

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_WARDELL 2 PAD**

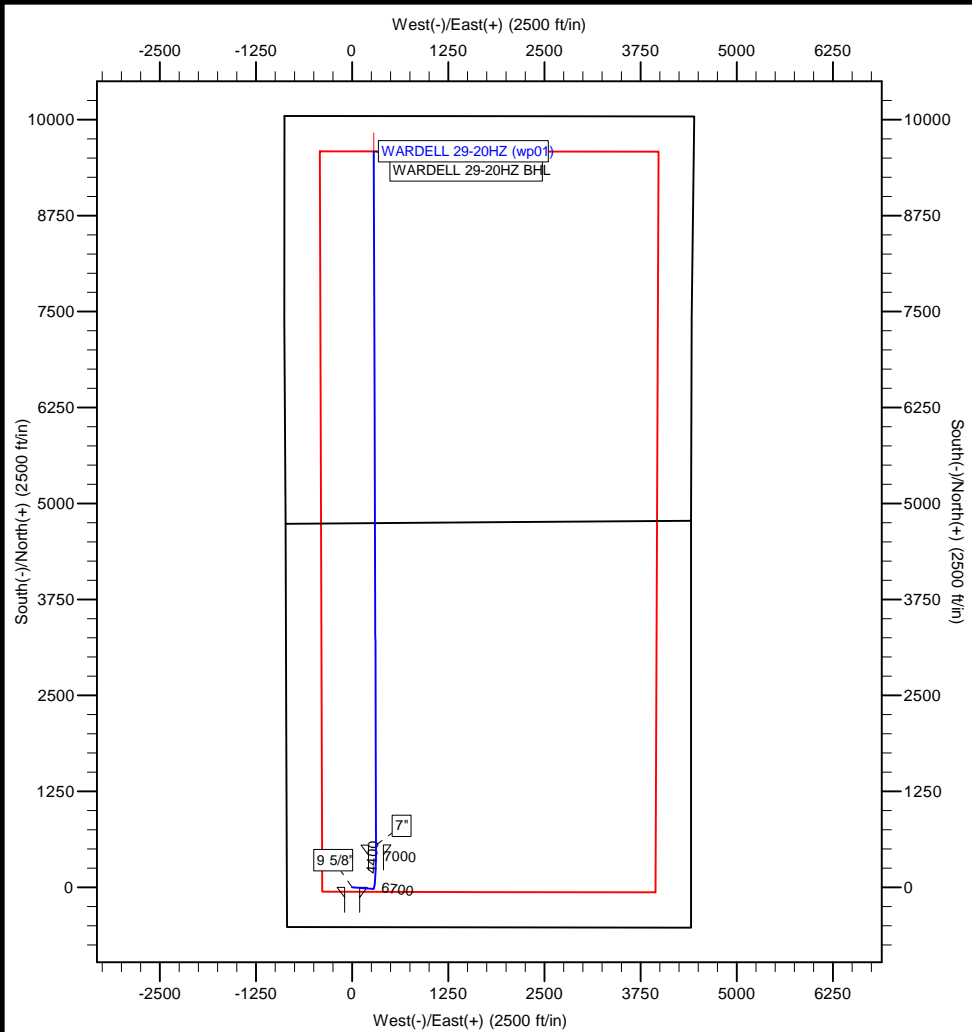
**WARDELL 29N-20HZ**

**WARDELL 29-20HZ**

**Plan: WARDELL 29-20HZ (wp01)**

## **Standard Planning Report**

**29 November, 2011**



**Azimuths to True North**  
Magnetic North: 8.75°

**Magnetic Field**  
Strength: 52980.1snT  
Dip Angle: 66.88°  
Date: 11/29/2011  
Model: IGRF2010

**Project:** COLORADO NORTHERN ZONE - 83  
**Site:** WELD WARDELL 2 PAD  
**Well:** WARDELL 29N-20HZ  
**Wellbore:** WARDELL 29-20HZ  
**Section:** SHL:  
**Design:** WARDELL 29-20HZ (wp01)  
**Latitude:** 40.190606  
**Longitude:** -104.693682  
**GL:** 4902.01  
**KB:** GL +RKB @ 4919.00ft

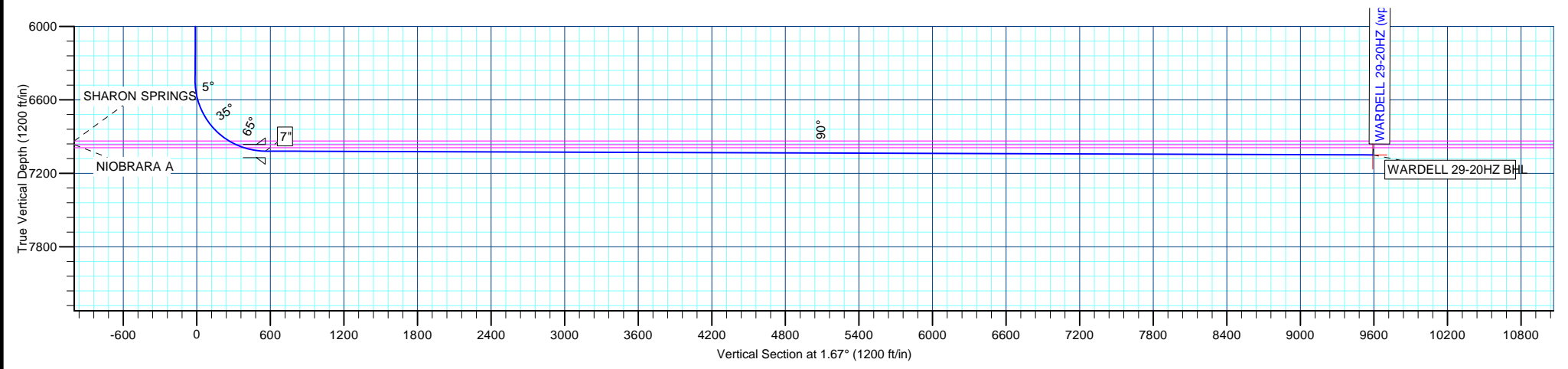
WELL DETAILS: WARDELL 29N-20HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4902.01 Latitude	Longitude	Slot
0.00	0.00	1313304.51	3225258.42	40.190606	-104.693682	

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
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
2181.68	3.63	94.40	2181.55	-0.44	5.74	2.00	94.40	-0.27
6452.99	3.63	94.40	6444.28	-21.22	275.63	0.00	0.00	-13.16
7354.05	89.81	359.81	7019.00	550.00	310.00	10.00	-94.59	558.82
7355.18	89.80	359.81	7019.00	551.13	310.00	1.00	177.84	559.95
16390.67	89.80	359.81	7050.00	9586.52	280.10	0.00	0.00	9590.61

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
WARDELL 29-20HZ BHL	7050.00	9586.52	280.10	40.216922	-104.692679	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3849.00	3852.48	PARKMAN
4473.00	4477.74	SUSSEX
6937.00	7045.26	SHARON SPRINGS
6966.00	7107.26	NIOBRARA A
6992.00	7179.12	NIOBRARA B

CASING DETAILS			
TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7019.00	7354.05	7"	7



# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well WARDELL 29N-20HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL +RKB @ 4919.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL +RKB @ 4919.00ft
<b>Site:</b>	WELD_WARDELL 2 PAD	<b>North Reference:</b>	True
<b>Well:</b>	WARDELL 29N-20HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	WARDELL 29-20HZ		
<b>Design:</b>	WARDELL 29-20HZ (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		

<b>Site</b>	WELD_WARDELL 2 PAD			
<b>Site Position:</b>		<b>Northing:</b>	1,313,304.26 usft	<b>Latitude:</b> 40.190606
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,225,228.53 usft	<b>Longitude:</b> -104.693789
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.52 °

<b>Well</b>	WARDELL 29N-20HZ			
<b>Well Position</b>	<b>+N/-S</b>	-0.02 ft	<b>Northing:</b>	1,313,304.51 usft
	<b>+E/-W</b>	29.89 ft	<b>Easting:</b>	3,225,258.42 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 40.190606
				<b>Longitude:</b> -104.693682
				<b>Ground Level:</b> 4,902.01 ft

<b>Wellbore</b>	WARDELL 29-20HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/29/2011	8.75	66.88	52,980

<b>Design</b>	WARDELL 29-20HZ (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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	1.67

<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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,181.68	3.63	94.40	2,181.55	-0.44	5.74	2.00	2.00	0.00	94.40	
6,452.99	3.63	94.40	6,444.28	-21.22	275.63	0.00	0.00	0.00	0.00	
7,354.05	89.81	359.81	7,019.00	550.00	310.00	10.00	9.56	-10.50	-94.59	
7,355.18	89.80	359.81	7,019.00	551.13	310.00	1.00	-1.00	0.04	177.84	
16,390.67	89.80	359.81	7,050.00	9,586.52	280.10	0.00	0.00	0.00	0.00	WARDELL 29-20HZ E

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well WARDELL 29N-20HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL +RKB @ 4919.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL +RKB @ 4919.00ft
<b>Site:</b>	WELD_WARDELL 2 PAD	<b>North Reference:</b>	True
<b>Well:</b>	WARDELL 29N-20HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	WARDELL 29-20HZ		
<b>Design:</b>	WARDELL 29-20HZ (wp01)		

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
9 5/8"									
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
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	2.00	94.40	2,099.98	-0.13	1.74	-0.08	2.00	2.00	0.00
2,181.68	3.63	94.40	2,181.55	-0.44	5.74	-0.27	2.00	2.00	0.00
2,200.00	3.63	94.40	2,199.84	-0.53	6.90	-0.33	0.00	0.00	0.00
2,300.00	3.63	94.40	2,299.64	-1.02	13.22	-0.63	0.00	0.00	0.00
2,400.00	3.63	94.40	2,399.44	-1.50	19.54	-0.93	0.00	0.00	0.00
2,500.00	3.63	94.40	2,499.24	-1.99	25.86	-1.23	0.00	0.00	0.00
2,600.00	3.63	94.40	2,599.04	-2.48	32.17	-1.54	0.00	0.00	0.00
2,700.00	3.63	94.40	2,698.84	-2.96	38.49	-1.84	0.00	0.00	0.00
2,800.00	3.63	94.40	2,798.64	-3.45	44.81	-2.14	0.00	0.00	0.00
2,900.00	3.63	94.40	2,898.43	-3.94	51.13	-2.44	0.00	0.00	0.00
3,000.00	3.63	94.40	2,998.23	-4.42	57.45	-2.74	0.00	0.00	0.00
3,100.00	3.63	94.40	3,098.03	-4.91	63.77	-3.04	0.00	0.00	0.00
3,200.00	3.63	94.40	3,197.83	-5.40	70.09	-3.35	0.00	0.00	0.00
3,300.00	3.63	94.40	3,297.63	-5.88	76.41	-3.65	0.00	0.00	0.00
3,400.00	3.63	94.40	3,397.43	-6.37	82.72	-3.95	0.00	0.00	0.00
3,500.00	3.63	94.40	3,497.23	-6.85	89.04	-4.25	0.00	0.00	0.00
3,600.00	3.63	94.40	3,597.03	-7.34	95.36	-4.55	0.00	0.00	0.00
3,700.00	3.63	94.40	3,696.83	-7.83	101.68	-4.85	0.00	0.00	0.00
3,800.00	3.63	94.40	3,796.63	-8.31	108.00	-5.16	0.00	0.00	0.00
3,852.48	3.63	94.40	3,849.00	-8.57	111.31	-5.31	0.00	0.00	0.00
PARKMAN									
3,900.00	3.63	94.40	3,896.42	-8.80	114.32	-5.46	0.00	0.00	0.00
4,000.00	3.63	94.40	3,996.22	-9.29	120.64	-5.76	0.00	0.00	0.00
4,100.00	3.63	94.40	4,096.02	-9.77	126.95	-6.06	0.00	0.00	0.00
4,200.00	3.63	94.40	4,195.82	-10.26	133.27	-6.36	0.00	0.00	0.00
4,300.00	3.63	94.40	4,295.62	-10.75	139.59	-6.67	0.00	0.00	0.00
4,400.00	3.63	94.40	4,395.42	-11.23	145.91	-6.97	0.00	0.00	0.00
4,477.74	3.63	94.40	4,473.00	-11.61	150.82	-7.20	0.00	0.00	0.00
SUSSEX									
4,500.00	3.63	94.40	4,495.22	-11.72	152.23	-7.27	0.00	0.00	0.00
4,600.00	3.63	94.40	4,595.02	-12.21	158.55	-7.57	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well WARDELL 29N-20HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL +RKB @ 4919.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL +RKB @ 4919.00ft
<b>Site:</b>	WELD_WARDELL 2 PAD	<b>North Reference:</b>	True
<b>Well:</b>	WARDELL 29N-20HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	WARDELL 29-20HZ		
<b>Design:</b>	WARDELL 29-20HZ (wp01)		

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)
4,700.00	3.63	94.40	4,694.82	-12.69	164.87	-7.87	0.00	0.00	0.00
4,800.00	3.63	94.40	4,794.62	-13.18	171.19	-8.17	0.00	0.00	0.00
4,900.00	3.63	94.40	4,894.41	-13.67	177.50	-8.48	0.00	0.00	0.00
5,000.00	3.63	94.40	4,994.21	-14.15	183.82	-8.78	0.00	0.00	0.00
5,100.00	3.63	94.40	5,094.01	-14.64	190.14	-9.08	0.00	0.00	0.00
5,200.00	3.63	94.40	5,193.81	-15.12	196.46	-9.38	0.00	0.00	0.00
5,300.00	3.63	94.40	5,293.61	-15.61	202.78	-9.68	0.00	0.00	0.00
5,400.00	3.63	94.40	5,393.41	-16.10	209.10	-9.98	0.00	0.00	0.00
5,500.00	3.63	94.40	5,493.21	-16.58	215.42	-10.29	0.00	0.00	0.00
5,600.00	3.63	94.40	5,593.01	-17.07	221.74	-10.59	0.00	0.00	0.00
5,700.00	3.63	94.40	5,692.81	-17.56	228.05	-10.89	0.00	0.00	0.00
5,800.00	3.63	94.40	5,792.61	-18.04	234.37	-11.19	0.00	0.00	0.00
5,900.00	3.63	94.40	5,892.40	-18.53	240.69	-11.49	0.00	0.00	0.00
6,000.00	3.63	94.40	5,992.20	-19.02	247.01	-11.79	0.00	0.00	0.00
6,100.00	3.63	94.40	6,092.00	-19.50	253.33	-12.10	0.00	0.00	0.00
6,200.00	3.63	94.40	6,191.80	-19.99	259.65	-12.40	0.00	0.00	0.00
6,300.00	3.63	94.40	6,291.60	-20.48	265.97	-12.70	0.00	0.00	0.00
6,400.00	3.63	94.40	6,391.40	-20.96	272.28	-13.00	0.00	0.00	0.00
6,452.99	3.63	94.40	6,444.28	-21.22	275.63	-13.16	0.00	0.00	0.00
6,500.00	5.70	39.12	6,491.16	-19.52	278.59	-11.38	10.00	4.40	-117.59
6,600.00	14.85	13.61	6,589.49	-3.17	284.76	5.15	10.00	9.14	-25.51
6,700.00	24.66	7.72	6,683.50	30.04	290.59	38.52	10.00	9.81	-5.89
6,800.00	34.58	5.07	6,770.33	79.10	295.92	87.71	10.00	9.92	-2.66
6,900.00	44.53	3.49	6,847.34	142.53	300.57	151.24	10.00	9.95	-1.58
6,903.59	44.88	3.44	6,849.88	145.04	300.72	153.76	10.00	9.96	-1.28
<b>WARDELL 29-20HZ heel</b>									
7,000.00	54.49	2.39	6,912.19	218.38	304.41	227.18	10.00	9.97	-1.09
7,045.26	59.00	1.98	6,937.00	256.20	305.84	265.02	10.00	9.97	-0.90
<b>SHARON SPRINGS</b>									
7,100.00	64.46	1.53	6,962.91	304.37	307.31	313.21	10.00	9.97	-0.82
7,107.26	65.19	1.48	6,966.00	310.94	307.49	319.78	10.00	9.98	-0.77
<b>NIORARA A</b>									
7,179.12	72.36	0.95	6,992.00	377.86	308.90	386.72	10.00	9.98	-0.73
<b>NIORARA B</b>									
7,200.00	74.44	0.81	6,997.96	397.87	309.20	406.73	10.00	9.98	-0.69
7,300.00	84.42	0.15	7,016.28	496.04	310.02	504.88	10.00	9.98	-0.66
7,354.05	89.81	359.81	7,019.00	550.00	310.00	558.82	10.00	9.98	-0.63
<b>7"</b>									
7,355.18	89.80	359.81	7,019.00	551.13	310.00	559.95	1.00	-1.00	0.04
7,400.00	89.80	359.81	7,019.16	595.95	309.85	604.75	0.00	0.00	0.00
7,500.00	89.80	359.81	7,019.50	695.95	309.52	704.69	0.00	0.00	0.00
7,600.00	89.80	359.81	7,019.84	795.95	309.19	804.64	0.00	0.00	0.00
7,700.00	89.80	359.81	7,020.19	895.95	308.86	904.59	0.00	0.00	0.00
7,800.00	89.80	359.81	7,020.53	995.95	308.52	1,004.53	0.00	0.00	0.00
7,900.00	89.80	359.81	7,020.87	1,095.95	308.19	1,104.48	0.00	0.00	0.00
8,000.00	89.80	359.81	7,021.22	1,195.95	307.86	1,204.43	0.00	0.00	0.00
8,100.00	89.80	359.81	7,021.56	1,295.94	307.53	1,304.37	0.00	0.00	0.00
8,200.00	89.80	359.81	7,021.90	1,395.94	307.20	1,404.32	0.00	0.00	0.00
8,300.00	89.80	359.81	7,022.25	1,495.94	306.87	1,504.27	0.00	0.00	0.00
8,400.00	89.80	359.81	7,022.59	1,595.94	306.54	1,604.21	0.00	0.00	0.00
8,500.00	89.80	359.81	7,022.93	1,695.94	306.21	1,704.16	0.00	0.00	0.00
8,600.00	89.80	359.81	7,023.27	1,795.94	305.88	1,804.11	0.00	0.00	0.00
8,700.00	89.80	359.81	7,023.62	1,895.94	305.55	1,904.05	0.00	0.00	0.00
8,800.00	89.80	359.81	7,023.96	1,995.94	305.22	2,004.00	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well WARDELL 29N-20HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL +RKB @ 4919.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL +RKB @ 4919.00ft
<b>Site:</b>	WELD_WARDELL 2 PAD	<b>North Reference:</b>	True
<b>Well:</b>	WARDELL 29N-20HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	WARDELL 29-20HZ		
<b>Design:</b>	WARDELL 29-20HZ (wp01)		

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)
8,900.00	89.80	359.81	7,024.30	2,095.94	304.88	2,103.95	0.00	0.00	0.00
9,000.00	89.80	359.81	7,024.65	2,195.93	304.55	2,203.89	0.00	0.00	0.00
9,100.00	89.80	359.81	7,024.99	2,295.93	304.22	2,303.84	0.00	0.00	0.00
9,200.00	89.80	359.81	7,025.33	2,395.93	303.89	2,403.79	0.00	0.00	0.00
9,300.00	89.80	359.81	7,025.68	2,495.93	303.56	2,503.73	0.00	0.00	0.00
9,400.00	89.80	359.81	7,026.02	2,595.93	303.23	2,603.68	0.00	0.00	0.00
9,500.00	89.80	359.81	7,026.36	2,695.93	302.90	2,703.62	0.00	0.00	0.00
9,600.00	89.80	359.81	7,026.70	2,795.93	302.57	2,803.57	0.00	0.00	0.00
9,700.00	89.80	359.81	7,027.05	2,895.93	302.24	2,903.52	0.00	0.00	0.00
9,800.00	89.80	359.81	7,027.39	2,995.92	301.91	3,003.46	0.00	0.00	0.00
9,900.00	89.80	359.81	7,027.73	3,095.92	301.58	3,103.41	0.00	0.00	0.00
10,000.00	89.80	359.81	7,028.08	3,195.92	301.25	3,203.36	0.00	0.00	0.00
10,100.00	89.80	359.81	7,028.42	3,295.92	300.91	3,303.30	0.00	0.00	0.00
10,200.00	89.80	359.81	7,028.76	3,395.92	300.58	3,403.25	0.00	0.00	0.00
10,300.00	89.80	359.81	7,029.11	3,495.92	300.25	3,503.20	0.00	0.00	0.00
10,400.00	89.80	359.81	7,029.45	3,595.92	299.92	3,603.14	0.00	0.00	0.00
10,500.00	89.80	359.81	7,029.79	3,695.92	299.59	3,703.09	0.00	0.00	0.00
10,600.00	89.80	359.81	7,030.14	3,795.92	299.26	3,803.04	0.00	0.00	0.00
10,700.00	89.80	359.81	7,030.48	3,895.91	298.93	3,902.98	0.00	0.00	0.00
10,800.00	89.80	359.81	7,030.82	3,995.91	298.60	4,002.93	0.00	0.00	0.00
10,900.00	89.80	359.81	7,031.16	4,095.91	298.27	4,102.88	0.00	0.00	0.00
11,000.00	89.80	359.81	7,031.51	4,195.91	297.94	4,202.82	0.00	0.00	0.00
11,100.00	89.80	359.81	7,031.85	4,295.91	297.61	4,302.77	0.00	0.00	0.00
11,200.00	89.80	359.81	7,032.19	4,395.91	297.28	4,402.72	0.00	0.00	0.00
11,300.00	89.80	359.81	7,032.54	4,495.91	296.94	4,502.66	0.00	0.00	0.00
11,400.00	89.80	359.81	7,032.88	4,595.91	296.61	4,602.61	0.00	0.00	0.00
11,500.00	89.80	359.81	7,033.22	4,695.91	296.28	4,702.56	0.00	0.00	0.00
11,600.00	89.80	359.81	7,033.57	4,795.90	295.95	4,802.50	0.00	0.00	0.00
11,700.00	89.80	359.81	7,033.91	4,895.90	295.62	4,902.45	0.00	0.00	0.00
11,800.00	89.80	359.81	7,034.25	4,995.90	295.29	5,002.40	0.00	0.00	0.00
11,900.00	89.80	359.81	7,034.59	5,095.90	294.96	5,102.34	0.00	0.00	0.00
12,000.00	89.80	359.81	7,034.94	5,195.90	294.63	5,202.29	0.00	0.00	0.00
12,100.00	89.80	359.81	7,035.28	5,295.90	294.30	5,302.23	0.00	0.00	0.00
12,200.00	89.80	359.81	7,035.62	5,395.90	293.97	5,402.18	0.00	0.00	0.00
12,300.00	89.80	359.81	7,035.97	5,495.90	293.64	5,502.13	0.00	0.00	0.00
12,400.00	89.80	359.81	7,036.31	5,595.90	293.30	5,602.07	0.00	0.00	0.00
12,500.00	89.80	359.81	7,036.65	5,695.89	292.97	5,702.02	0.00	0.00	0.00
12,600.00	89.80	359.81	7,037.00	5,795.89	292.64	5,801.97	0.00	0.00	0.00
12,700.00	89.80	359.81	7,037.34	5,895.89	292.31	5,901.91	0.00	0.00	0.00
12,800.00	89.80	359.81	7,037.68	5,995.89	291.98	6,001.86	0.00	0.00	0.00
12,900.00	89.80	359.81	7,038.03	6,095.89	291.65	6,101.81	0.00	0.00	0.00
13,000.00	89.80	359.81	7,038.37	6,195.89	291.32	6,201.75	0.00	0.00	0.00
13,100.00	89.80	359.81	7,038.71	6,295.89	290.99	6,301.70	0.00	0.00	0.00
13,200.00	89.80	359.81	7,039.05	6,395.89	290.66	6,401.65	0.00	0.00	0.00
13,300.00	89.80	359.81	7,039.40	6,495.89	290.33	6,501.59	0.00	0.00	0.00
13,400.00	89.80	359.81	7,039.74	6,595.88	290.00	6,601.54	0.00	0.00	0.00
13,500.00	89.80	359.81	7,040.08	6,695.88	289.67	6,701.49	0.00	0.00	0.00
13,600.00	89.80	359.81	7,040.43	6,795.88	289.33	6,801.43	0.00	0.00	0.00
13,700.00	89.80	359.81	7,040.77	6,895.88	289.00	6,901.38	0.00	0.00	0.00
13,800.00	89.80	359.81	7,041.11	6,995.88	288.67	7,001.33	0.00	0.00	0.00
13,900.00	89.80	359.81	7,041.46	7,095.88	288.34	7,101.27	0.00	0.00	0.00
14,000.00	89.80	359.81	7,041.80	7,195.88	288.01	7,201.22	0.00	0.00	0.00
14,100.00	89.80	359.81	7,042.14	7,295.88	287.68	7,301.17	0.00	0.00	0.00
14,200.00	89.80	359.81	7,042.49	7,395.88	287.35	7,401.11	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well WARDELL 29N-20HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL +RKB @ 4919.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL +RKB @ 4919.00ft
<b>Site:</b>	WELD_WARDELL 2 PAD	<b>North Reference:</b>	True
<b>Well:</b>	WARDELL 29N-20HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	WARDELL 29-20HZ		
<b>Design:</b>	WARDELL 29-20HZ (wp01)		

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)
14,300.00	89.80	359.81	7,042.83	7,495.87	287.02	7,501.06	0.00	0.00	0.00
14,400.00	89.80	359.81	7,043.17	7,595.87	286.69	7,601.01	0.00	0.00	0.00
14,500.00	89.80	359.81	7,043.51	7,695.87	286.36	7,700.95	0.00	0.00	0.00
14,600.00	89.80	359.81	7,043.86	7,795.87	286.03	7,800.90	0.00	0.00	0.00
14,700.00	89.80	359.81	7,044.20	7,895.87	285.69	7,900.85	0.00	0.00	0.00
14,800.00	89.80	359.81	7,044.54	7,995.87	285.36	8,000.79	0.00	0.00	0.00
14,900.00	89.80	359.81	7,044.89	8,095.87	285.03	8,100.74	0.00	0.00	0.00
15,000.00	89.80	359.81	7,045.23	8,195.87	284.70	8,200.68	0.00	0.00	0.00
15,100.00	89.80	359.81	7,045.57	8,295.86	284.37	8,300.63	0.00	0.00	0.00
15,200.00	89.80	359.81	7,045.92	8,395.86	284.04	8,400.58	0.00	0.00	0.00
15,300.00	89.80	359.81	7,046.26	8,495.86	283.71	8,500.52	0.00	0.00	0.00
15,400.00	89.80	359.81	7,046.60	8,595.86	283.38	8,600.47	0.00	0.00	0.00
15,500.00	89.80	359.81	7,046.94	8,695.86	283.05	8,700.42	0.00	0.00	0.00
15,600.00	89.80	359.81	7,047.29	8,795.86	282.72	8,800.36	0.00	0.00	0.00
15,700.00	89.80	359.81	7,047.63	8,895.86	282.39	8,900.31	0.00	0.00	0.00
15,800.00	89.80	359.81	7,047.97	8,995.86	282.06	9,000.26	0.00	0.00	0.00
15,900.00	89.80	359.81	7,048.32	9,095.86	281.72	9,100.20	0.00	0.00	0.00
16,000.00	89.80	359.81	7,048.66	9,195.85	281.39	9,200.15	0.00	0.00	0.00
16,100.00	89.80	359.81	7,049.00	9,295.85	281.06	9,300.10	0.00	0.00	0.00
16,200.00	89.80	359.81	7,049.35	9,395.85	280.73	9,400.04	0.00	0.00	0.00
16,300.00	89.80	359.81	7,049.69	9,495.85	280.40	9,499.99	0.00	0.00	0.00
16,390.67	89.80	359.81	7,050.00	9,586.52	280.10	9,590.61	0.00	0.00	0.00
WARDELL 29-20HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
WARDELL 29-20HZ BH	0.00	0.00	7,050.00	9,586.52	280.10	1,322,893.16	3,225,451.34	40.216922	-104.692679
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
900.00	900.00	9 5/8"	9-5/8	12-1/4	
7,354.05	7,019.00	7"	7	8-3/4	

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well WARDELL 29N-20HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL +RKB @ 4919.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL +RKB @ 4919.00ft
<b>Site:</b>	WELD_ WARDELL 2 PAD	<b>North Reference:</b>	True
<b>Well:</b>	WARDELL 29N-20HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	WARDELL 29-20HZ		
<b>Design:</b>	WARDELL 29-20HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,852.48	3,849.00	PARKMAN		0.00		
4,477.74	4,473.00	SUSSEX		0.00		
7,045.26	6,937.00	SHARON SPRINGS		0.00		
7,107.26	6,966.00	NIOBRARA A		0.00		
7,179.12	6,992.00	NIOBRARA B		0.00		