

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_HUDSON 3E-26HZ PAD**

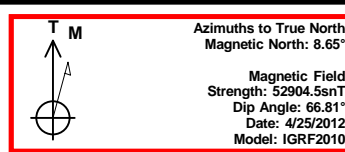
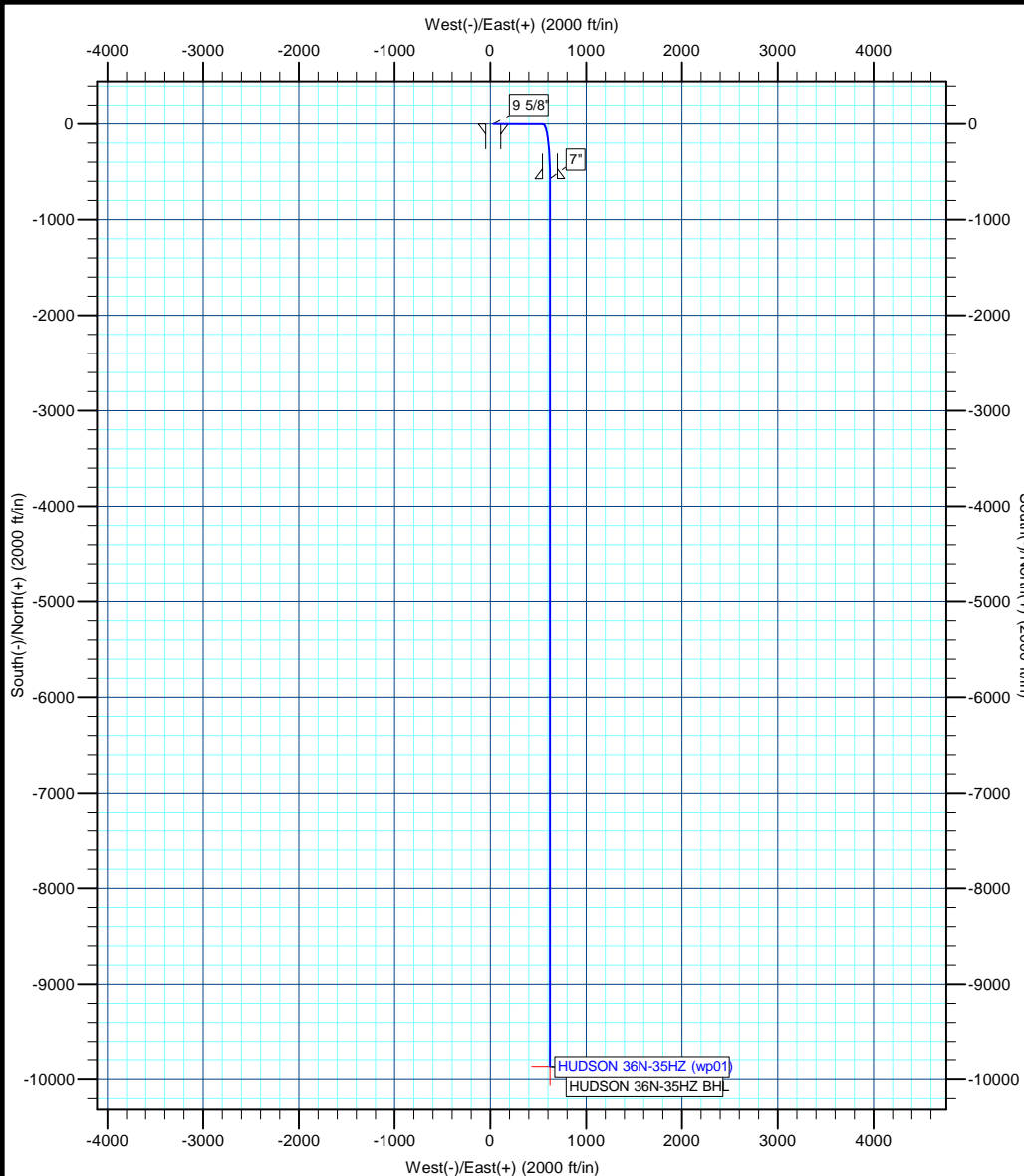
**HUDSON 36N-35HZ**

**HUDSON 36N-35HZ**

**Plan: HUDSON 36N-35HZ (wp01)**

## **Standard Planning Report**

**02 May, 2012**



Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_HUDSON 3E-26HZ PAD  
Well: HUDSON 36N-35HZ  
Wellbore: HUDSON 36N-35HZ  
Section:  
SHL:  
Design: HUDSON 36N-35HZ (wp01)  
Latitude: 40.115859  
Longitude: -104.633053  
GL: 4910.00  
KB: GL + RKB @ 4927.00ft

#### WELL DETAILS: HUDSON 36N-35HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4910.00 Latitude	Longitude	Slot
-0.01	29.93	1286236.74	3242461.83	40.115859	-104.633053	

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	-0.01	29.93	0.00	0.00	0.00
1500.00	0.00	0.00	1500.00	-0.01	29.93	0.00	0.00	0.00
2926.28	7.13	90.36	2922.60	-0.57	118.57	0.50	90.36	5.87
6414.57	7.13	90.36	6383.90	-3.31	551.62	0.00	0.00	34.56
7312.85	89.87	180.00	6952.00	-575.00	622.53	10.00	89.66	609.47
7313.64	89.86	180.00	6952.00	-575.79	622.53	1.00	180.00	610.26
16607.64	89.86	180.00	6974.00	-9869.76	622.53	0.00	0.00	9887.52

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

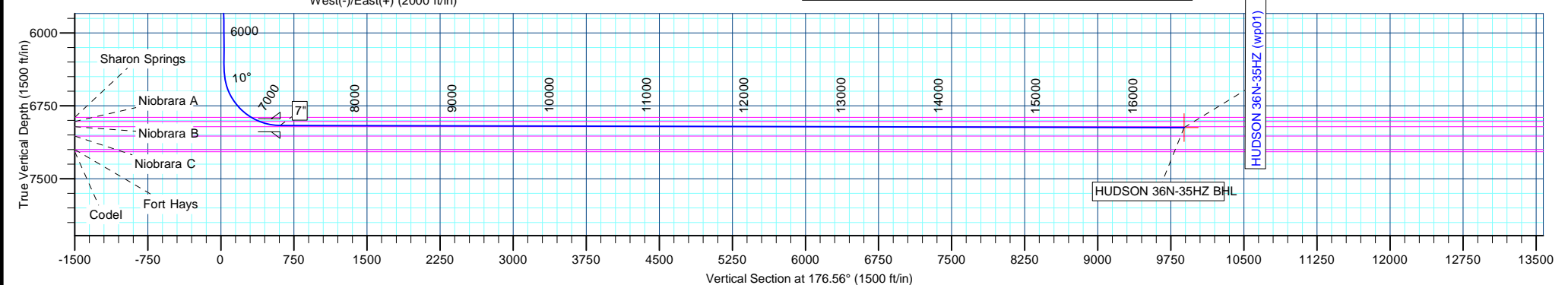
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HUDSON 36N-35HZ BHL	6974.00	-9869.76	622.53	40.088765	-104.630935	Point

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
768.00	768.00	Fox Hills
2859.00	2862.21	Parkman
4553.00	4569.39	Sussex
6868.00	6998.71	Sharon Springs
6910.00	7092.52	Niobrara A
6964.00	12382.75	Niobrara B

#### CASING DETAILS

TVD	MD	Name	Size
1300.00	1300.00	9 5/8"	9-5/8
6952.00	7312.85	7"	7



# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Site WELD_HUDSON 3E-26HZ PAD
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL + RKB @ 4927.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL + RKB @ 4927.00ft
<b>Site:</b>	WELD_HUDSON 3E-26HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HUDSON 36N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HUDSON 36N-35HZ		
<b>Design:</b>	HUDSON 36N-35HZ (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_HUDSON 3E-26HZ PAD			
<b>Site Position:</b>		<b>Northing:</b>	1,286,236.46 usft	<b>Latitude:</b> 40.115859
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,242,431.91 usft	<b>Longitude:</b> -104.633160
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.56 °

<b>Well</b>	HUDSON 36N-35HZ			
<b>Well Position</b>	<b>+N/-S</b>	-0.01 ft	<b>Northing:</b>	1,286,236.74 usft
	<b>+E/-W</b>	29.93 ft	<b>Easting:</b>	3,242,461.83 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 4,910.00 ft

<b>Wellbore</b>	HUDSON 36N-35HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/25/2012	8.65	66.81	52,905

<b>Design</b>	HUDSON 36N-35HZ (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	-0.01	29.93	176.56

<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	-0.01	29.93	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	-0.01	29.93	0.00	0.00	0.00	0.00	
2,926.28	7.13	90.36	2,922.60	-0.57	118.57	0.50	0.50	0.00	90.36	
6,414.57	7.13	90.36	6,383.90	-3.31	551.62	0.00	0.00	0.00	0.00	
7,312.85	89.87	180.00	6,952.00	-575.00	622.53	10.00	9.21	9.98	89.66	
7,313.64	89.86	180.00	6,952.00	-575.79	622.53	1.00	-1.00	0.00	180.00	
16,607.64	89.86	180.00	6,974.00	-9,869.76	622.53	0.00	0.00	0.00	0.00	HUDSON 36N-35HZ

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Site WELD_HUDSON 3E-26HZ PAD
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL + RKB @ 4927.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL + RKB @ 4927.00ft
<b>Site:</b>	WELD_HUDSON 3E-26HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HUDSON 36N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HUDSON 36N-35HZ		
<b>Design:</b>	HUDSON 36N-35HZ (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	-0.01	29.93	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	-0.01	29.93	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	-0.01	29.93	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	-0.01	29.93	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	-0.01	29.93	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	-0.01	29.93	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	-0.01	29.93	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	-0.01	29.93	0.00	0.00	0.00	0.00
768.00	0.00	0.00	768.00	-0.01	29.93	0.00	0.00	0.00	0.00
Fox Hills									
800.00	0.00	0.00	800.00	-0.01	29.93	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	-0.01	29.93	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	-0.01	29.93	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	-0.01	29.93	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	-0.01	29.93	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	-0.01	29.93	0.00	0.00	0.00	0.00
9 5/8"									
1,400.00	0.00	0.00	1,400.00	-0.01	29.93	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	-0.01	29.93	0.00	0.00	0.00	0.00
Start Build 0.50									
1,600.00	0.50	90.36	1,600.00	-0.02	30.36	0.03	0.50	0.50	0.00
1,700.00	1.00	90.36	1,699.99	-0.02	31.67	0.12	0.50	0.50	0.00
1,800.00	1.50	90.36	1,799.97	-0.04	33.85	0.26	0.50	0.50	0.00
1,900.00	2.00	90.36	1,899.92	-0.06	36.91	0.46	0.50	0.50	0.00
2,000.00	2.50	90.36	1,999.84	-0.08	40.83	0.72	0.50	0.50	0.00
2,100.00	3.00	90.36	2,099.73	-0.11	45.63	1.04	0.50	0.50	0.00
2,200.00	3.50	90.36	2,199.56	-0.15	51.30	1.42	0.50	0.50	0.00
2,300.00	4.00	90.36	2,299.35	-0.19	57.84	1.85	0.50	0.50	0.00
2,400.00	4.50	90.36	2,399.08	-0.24	65.25	2.34	0.50	0.50	0.00
2,500.00	5.00	90.36	2,498.73	-0.29	73.53	2.89	0.50	0.50	0.00
2,600.00	5.50	90.36	2,598.31	-0.35	82.68	3.49	0.50	0.50	0.00
2,700.00	6.00	90.36	2,697.81	-0.41	92.70	4.16	0.50	0.50	0.00
2,800.00	6.50	90.36	2,797.21	-0.48	103.59	4.88	0.50	0.50	0.00
2,862.21	6.81	90.36	2,859.00	-0.52	110.79	5.36	0.50	0.50	0.00
Parkman									
2,900.00	7.00	90.36	2,896.52	-0.55	115.34	5.66	0.50	0.50	0.00
2,926.28	7.13	90.36	2,922.60	-0.57	118.57	5.87	0.50	0.50	0.00
Start 3488.29 hold at 2926.28 MD									
3,000.00	7.13	90.36	2,995.75	-0.63	127.72	6.48	0.00	0.00	0.00
3,100.00	7.13	90.36	3,094.98	-0.71	140.14	7.30	0.00	0.00	0.00
3,200.00	7.13	90.36	3,194.20	-0.79	152.55	8.12	0.00	0.00	0.00
3,300.00	7.13	90.36	3,293.43	-0.87	164.97	8.95	0.00	0.00	0.00
3,400.00	7.13	90.36	3,392.66	-0.94	177.38	9.77	0.00	0.00	0.00
3,500.00	7.13	90.36	3,491.88	-1.02	189.79	10.59	0.00	0.00	0.00
3,600.00	7.13	90.36	3,591.11	-1.10	202.21	11.41	0.00	0.00	0.00
3,700.00	7.13	90.36	3,690.33	-1.18	214.62	12.23	0.00	0.00	0.00
3,800.00	7.13	90.36	3,789.56	-1.26	227.04	13.06	0.00	0.00	0.00
3,900.00	7.13	90.36	3,888.79	-1.34	239.45	13.88	0.00	0.00	0.00
4,000.00	7.13	90.36	3,988.01	-1.41	251.87	14.70	0.00	0.00	0.00
4,100.00	7.13	90.36	4,087.24	-1.49	264.28	15.52	0.00	0.00	0.00
4,200.00	7.13	90.36	4,186.47	-1.57	276.69	16.35	0.00	0.00	0.00
4,300.00	7.13	90.36	4,285.69	-1.65	289.11	17.17	0.00	0.00	0.00
4,400.00	7.13	90.36	4,384.92	-1.73	301.52	17.99	0.00	0.00	0.00
4,500.00	7.13	90.36	4,484.15	-1.81	313.94	18.81	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Site WELD_HUDSON 3E-26HZ PAD
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL + RKB @ 4927.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL + RKB @ 4927.00ft
<b>Site:</b>	WELD_HUDSON 3E-26HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HUDSON 36N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HUDSON 36N-35HZ		
<b>Design:</b>	HUDSON 36N-35HZ (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)
4,569.39	7.13	90.36	4,553.00	-1.86	322.55	19.38	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	7.13	90.36	4,583.37	-1.89	326.35	19.64	0.00	0.00	0.00
4,700.00	7.13	90.36	4,682.60	-1.96	338.77	20.46	0.00	0.00	0.00
4,800.00	7.13	90.36	4,781.83	-2.04	351.18	21.28	0.00	0.00	0.00
4,900.00	7.13	90.36	4,881.05	-2.12	363.59	22.10	0.00	0.00	0.00
5,000.00	7.13	90.36	4,980.28	-2.20	376.01	22.92	0.00	0.00	0.00
5,100.00	7.13	90.36	5,079.50	-2.28	388.42	23.75	0.00	0.00	0.00
5,200.00	7.13	90.36	5,178.73	-2.36	400.84	24.57	0.00	0.00	0.00
5,300.00	7.13	90.36	5,277.96	-2.43	413.25	25.39	0.00	0.00	0.00
5,400.00	7.13	90.36	5,377.18	-2.51	425.67	26.21	0.00	0.00	0.00
5,500.00	7.13	90.36	5,476.41	-2.59	438.08	27.04	0.00	0.00	0.00
5,600.00	7.13	90.36	5,575.64	-2.67	450.49	27.86	0.00	0.00	0.00
5,700.00	7.13	90.36	5,674.86	-2.75	462.91	28.68	0.00	0.00	0.00
5,800.00	7.13	90.36	5,774.09	-2.83	475.32	29.50	0.00	0.00	0.00
5,900.00	7.13	90.36	5,873.32	-2.90	487.74	30.33	0.00	0.00	0.00
6,000.00	7.13	90.36	5,972.54	-2.98	500.15	31.15	0.00	0.00	0.00
6,100.00	7.13	90.36	6,071.77	-3.06	512.56	31.97	0.00	0.00	0.00
6,200.00	7.13	90.36	6,171.00	-3.14	524.98	32.79	0.00	0.00	0.00
6,300.00	7.13	90.36	6,270.22	-3.22	537.39	33.62	0.00	0.00	0.00
6,400.00	7.13	90.36	6,369.45	-3.30	549.81	34.44	0.00	0.00	0.00
6,414.57	7.13	90.36	6,383.90	-3.31	551.62	34.56	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 89.66</b>									
6,500.00	11.14	140.59	6,468.36	-9.73	562.18	41.60	10.00	4.70	58.79
6,600.00	19.86	159.75	6,564.68	-33.20	574.23	65.75	10.00	8.72	19.16
6,700.00	29.39	167.18	6,655.50	-73.16	585.58	106.32	10.00	9.53	7.43
6,800.00	39.14	171.17	6,738.06	-128.42	595.89	162.09	10.00	9.75	3.99
6,900.00	48.98	173.77	6,809.84	-197.27	604.85	231.37	10.00	9.84	2.59
6,998.71	58.73	175.66	6,868.00	-276.55	612.11	310.93	10.00	9.88	1.92
<b>Sharon Springs</b>									
7,000.00	58.86	175.68	6,868.67	-277.65	612.19	312.04	10.00	9.89	1.70
7,092.52	68.02	177.12	6,910.00	-360.15	617.34	394.70	10.00	9.90	1.56
<b>Niobrara A</b>									
7,100.00	68.76	177.23	6,912.76	-367.10	617.68	401.65	10.00	9.91	1.44
7,200.00	78.68	178.58	6,940.76	-462.90	621.16	497.49	10.00	9.92	1.35
7,300.00	88.60	179.84	6,951.83	-562.15	622.51	596.64	10.00	9.92	1.26
7,312.85	89.87	180.00	6,952.00	-575.00	622.53	609.47	10.00	9.92	1.24
<b>Start DLS 1.00 TFO 180.00 - 7"</b>									
7,313.64	89.86	180.00	6,952.00	-575.79	622.53	610.26	0.99	-0.99	0.00
<b>Start 9294.00 hold at 7313.64 MD</b>									
7,400.00	89.86	180.00	6,952.21	-662.15	622.53	696.46	0.00	0.00	0.00
7,500.00	89.86	180.00	6,952.44	-762.15	622.53	796.28	0.00	0.00	0.00
7,600.00	89.86	180.00	6,952.68	-862.15	622.53	896.10	0.00	0.00	0.00
7,700.00	89.86	180.00	6,952.92	-962.15	622.53	995.92	0.00	0.00	0.00
7,800.00	89.86	180.00	6,953.15	-1,062.15	622.53	1,095.74	0.00	0.00	0.00
7,900.00	89.86	180.00	6,953.39	-1,162.15	622.53	1,195.56	0.00	0.00	0.00
8,000.00	89.86	180.00	6,953.63	-1,262.15	622.53	1,295.38	0.00	0.00	0.00
8,100.00	89.86	180.00	6,953.86	-1,362.15	622.53	1,395.20	0.00	0.00	0.00
8,200.00	89.86	180.00	6,954.10	-1,462.15	622.53	1,495.02	0.00	0.00	0.00
8,300.00	89.86	180.00	6,954.34	-1,562.15	622.53	1,594.84	0.00	0.00	0.00
8,400.00	89.86	180.00	6,954.57	-1,662.15	622.53	1,694.66	0.00	0.00	0.00
8,500.00	89.86	180.00	6,954.81	-1,762.15	622.53	1,794.48	0.00	0.00	0.00
8,600.00	89.86	180.00	6,955.05	-1,862.15	622.53	1,894.30	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Site WELD_HUDSON 3E-26HZ PAD
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL + RKB @ 4927.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL + RKB @ 4927.00ft
<b>Site:</b>	WELD_HUDSON 3E-26HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HUDSON 36N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HUDSON 36N-35HZ		
<b>Design:</b>	HUDSON 36N-35HZ (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)
8,700.00	89.86	180.00	6,955.28	-1,962.15	622.53	1,994.12	0.00	0.00	0.00
8,800.00	89.86	180.00	6,955.52	-2,062.14	622.53	2,093.94	0.00	0.00	0.00
8,900.00	89.86	180.00	6,955.76	-2,162.14	622.53	2,193.76	0.00	0.00	0.00
9,000.00	89.86	180.00	6,955.99	-2,262.14	622.53	2,293.58	0.00	0.00	0.00
9,100.00	89.86	180.00	6,956.23	-2,362.14	622.53	2,393.40	0.00	0.00	0.00
9,200.00	89.86	180.00	6,956.47	-2,462.14	622.53	2,493.22	0.00	0.00	0.00
9,300.00	89.86	180.00	6,956.70	-2,562.14	622.53	2,593.04	0.00	0.00	0.00
9,400.00	89.86	180.00	6,956.94	-2,662.14	622.53	2,692.86	0.00	0.00	0.00
9,500.00	89.86	180.00	6,957.18	-2,762.14	622.53	2,792.68	0.00	0.00	0.00
9,600.00	89.86	180.00	6,957.41	-2,862.14	622.53	2,892.50	0.00	0.00	0.00
9,700.00	89.86	180.00	6,957.65	-2,962.14	622.53	2,992.32	0.00	0.00	0.00
9,800.00	89.86	180.00	6,957.89	-3,062.14	622.53	3,092.14	0.00	0.00	0.00
9,900.00	89.86	180.00	6,958.12	-3,162.14	622.53	3,191.96	0.00	0.00	0.00
10,000.00	89.86	180.00	6,958.36	-3,262.14	622.53	3,291.78	0.00	0.00	0.00
10,100.00	89.86	180.00	6,958.60	-3,362.14	622.53	3,391.60	0.00	0.00	0.00
10,200.00	89.86	180.00	6,958.83	-3,462.14	622.53	3,491.42	0.00	0.00	0.00
10,300.00	89.86	180.00	6,959.07	-3,562.14	622.53	3,591.24	0.00	0.00	0.00
10,400.00	89.86	180.00	6,959.31	-3,662.14	622.53	3,691.06	0.00	0.00	0.00
10,500.00	89.86	180.00	6,959.54	-3,762.14	622.53	3,790.88	0.00	0.00	0.00
10,600.00	89.86	180.00	6,959.78	-3,862.14	622.53	3,890.70	0.00	0.00	0.00
10,700.00	89.86	180.00	6,960.02	-3,962.14	622.53	3,990.52	0.00	0.00	0.00
10,800.00	89.86	180.00	6,960.25	-4,062.14	622.53	4,090.34	0.00	0.00	0.00
10,900.00	89.86	180.00	6,960.49	-4,162.14	622.53	4,190.16	0.00	0.00	0.00
11,000.00	89.86	180.00	6,960.73	-4,262.14	622.53	4,289.98	0.00	0.00	0.00
11,100.00	89.86	180.00	6,960.96	-4,362.14	622.53	4,389.80	0.00	0.00	0.00
11,200.00	89.86	180.00	6,961.20	-4,462.14	622.53	4,489.62	0.00	0.00	0.00
11,300.00	89.86	180.00	6,961.44	-4,562.14	622.53	4,589.44	0.00	0.00	0.00
11,400.00	89.86	180.00	6,961.67	-4,662.14	622.53	4,689.26	0.00	0.00	0.00
11,500.00	89.86	180.00	6,961.91	-4,762.14	622.53	4,789.08	0.00	0.00	0.00
11,600.00	89.86	180.00	6,962.15	-4,862.14	622.53	4,888.90	0.00	0.00	0.00
11,700.00	89.86	180.00	6,962.38	-4,962.14	622.53	4,988.72	0.00	0.00	0.00
11,800.00	89.86	180.00	6,962.62	-5,062.14	622.53	5,088.54	0.00	0.00	0.00
11,900.00	89.86	180.00	6,962.86	-5,162.14	622.53	5,188.36	0.00	0.00	0.00
12,000.00	89.86	180.00	6,963.09	-5,262.14	622.53	5,288.18	0.00	0.00	0.00
12,100.00	89.86	180.00	6,963.33	-5,362.14	622.53	5,388.00	0.00	0.00	0.00
12,200.00	89.86	180.00	6,963.57	-5,462.14	622.53	5,487.82	0.00	0.00	0.00
12,300.00	89.86	180.00	6,963.80	-5,562.14	622.53	5,587.64	0.00	0.00	0.00
12,382.75	89.86	180.00	6,964.00	-5,644.88	622.53	5,670.24	0.00	0.00	0.00
<b>Niobrara B</b>									
12,400.00	89.86	180.00	6,964.04	-5,662.13	622.53	5,687.46	0.00	0.00	0.00
12,500.00	89.86	180.00	6,964.28	-5,762.13	622.53	5,787.28	0.00	0.00	0.00
12,600.00	89.86	180.00	6,964.51	-5,862.13	622.53	5,887.10	0.00	0.00	0.00
12,700.00	89.86	180.00	6,964.75	-5,962.13	622.53	5,986.92	0.00	0.00	0.00
12,800.00	89.86	180.00	6,964.99	-6,062.13	622.53	6,086.74	0.00	0.00	0.00
12,900.00	89.86	180.00	6,965.22	-6,162.13	622.53	6,186.56	0.00	0.00	0.00
13,000.00	89.86	180.00	6,965.46	-6,262.13	622.53	6,286.38	0.00	0.00	0.00
13,100.00	89.86	180.00	6,965.70	-6,362.13	622.53	6,386.20	0.00	0.00	0.00
13,200.00	89.86	180.00	6,965.93	-6,462.13	622.53	6,486.02	0.00	0.00	0.00
13,300.00	89.86	180.00	6,966.17	-6,562.13	622.53	6,585.84	0.00	0.00	0.00
13,400.00	89.86	180.00	6,966.41	-6,662.13	622.53	6,685.66	0.00	0.00	0.00
13,500.00	89.86	180.00	6,966.64	-6,762.13	622.53	6,785.48	0.00	0.00	0.00
13,600.00	89.86	180.00	6,966.88	-6,862.13	622.53	6,885.30	0.00	0.00	0.00
13,700.00	89.86	180.00	6,967.12	-6,962.13	622.53	6,985.12	0.00	0.00	0.00
13,800.00	89.86	180.00	6,967.35	-7,062.13	622.53	7,084.94	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Site WELD_HUDSON 3E-26HZ PAD
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL + RKB @ 4927.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL + RKB @ 4927.00ft
<b>Site:</b>	WELD_HUDSON 3E-26HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HUDSON 36N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HUDSON 36N-35HZ		
<b>Design:</b>	HUDSON 36N-35HZ (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)
13,900.00	89.86	180.00	6,967.59	-7,162.13	622.53	7,184.76	0.00	0.00	0.00
14,000.00	89.86	180.00	6,967.83	-7,262.13	622.53	7,284.58	0.00	0.00	0.00
14,100.00	89.86	180.00	6,968.06	-7,362.13	622.53	7,384.40	0.00	0.00	0.00
14,200.00	89.86	180.00	6,968.30	-7,462.13	622.53	7,484.22	0.00	0.00	0.00
14,300.00	89.86	180.00	6,968.54	-7,562.13	622.53	7,584.04	0.00	0.00	0.00
14,400.00	89.86	180.00	6,968.77	-7,662.13	622.53	7,683.86	0.00	0.00	0.00
14,500.00	89.86	180.00	6,969.01	-7,762.13	622.53	7,783.68	0.00	0.00	0.00
14,600.00	89.86	180.00	6,969.25	-7,862.13	622.53	7,883.50	0.00	0.00	0.00
14,700.00	89.86	180.00	6,969.48	-7,962.13	622.53	7,983.32	0.00	0.00	0.00
14,800.00	89.86	180.00	6,969.72	-8,062.13	622.53	8,083.14	0.00	0.00	0.00
14,900.00	89.86	180.00	6,969.96	-8,162.13	622.53	8,182.96	0.00	0.00	0.00
15,000.00	89.86	180.00	6,970.19	-8,262.13	622.53	8,282.78	0.00	0.00	0.00
15,100.00	89.86	180.00	6,970.43	-8,362.13	622.53	8,382.60	0.00	0.00	0.00
15,200.00	89.86	180.00	6,970.67	-8,462.13	622.53	8,482.42	0.00	0.00	0.00
15,300.00	89.86	180.00	6,970.91	-8,562.13	622.53	8,582.24	0.00	0.00	0.00
15,400.00	89.86	180.00	6,971.14	-8,662.13	622.53	8,682.06	0.00	0.00	0.00
15,500.00	89.86	180.00	6,971.38	-8,762.13	622.53	8,781.88	0.00	0.00	0.00
15,600.00	89.86	180.00	6,971.62	-8,862.13	622.53	8,881.70	0.00	0.00	0.00
15,700.00	89.86	180.00	6,971.85	-8,962.13	622.53	8,981.52	0.00	0.00	0.00
15,800.00	89.86	180.00	6,972.09	-9,062.13	622.53	9,081.34	0.00	0.00	0.00
15,900.00	89.86	180.00	6,972.33	-9,162.13	622.53	9,181.16	0.00	0.00	0.00
16,000.00	89.86	180.00	6,972.56	-9,262.12	622.53	9,280.98	0.00	0.00	0.00
16,100.00	89.86	180.00	6,972.80	-9,362.12	622.53	9,380.80	0.00	0.00	0.00
16,200.00	89.86	180.00	6,973.04	-9,462.12	622.53	9,480.62	0.00	0.00	0.00
16,300.00	89.86	180.00	6,973.27	-9,562.12	622.53	9,580.44	0.00	0.00	0.00
16,400.00	89.86	180.00	6,973.51	-9,662.12	622.53	9,680.26	0.00	0.00	0.00
16,500.00	89.86	180.00	6,973.75	-9,762.12	622.53	9,780.08	0.00	0.00	0.00
16,600.00	89.86	180.00	6,973.98	-9,862.12	622.53	9,879.90	0.00	0.00	0.00
16,607.64	89.86	180.00	6,974.00	-9,869.76	622.53	9,887.52	0.00	0.00	0.00
TD at 16607.64 - HUDSON 36N-35HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
HUDSON 36N-35HZ BH - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	6,974.00	-9,869.76	622.53	1,276,373.27	3,243,150.89	40.088765	-104.630935

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,300.00	1,300.00	9 5/8"	9-5/8	12-1/4	
7,312.85	6,952.00	7"	7	8-3/4	

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Site WELD_HUDSON 3E-26HZ PAD
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL + RKB @ 4927.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL + RKB @ 4927.00ft
<b>Site:</b>	WELD_HUDSON 3E-26HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HUDSON 36N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HUDSON 36N-35HZ		
<b>Design:</b>	HUDSON 36N-35HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
768.00	768.00	Fox Hills				
2,862.21	2,859.00	Parkman				
4,569.39	4,553.00	Sussex				
6,998.71	6,868.00	Sharon Springs				
7,092.52	6,910.00	Niobrara A				
12,382.75	6,964.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,500.00	1,500.00	-0.01	29.93	Start Build 0.50	
2,926.28	2,922.60	-0.57	118.57	Start 3488.29 hold at 2926.28 MD	
6,414.57	6,383.90	-3.31	551.62	Start DLS 10.00 TFO 89.66	
7,312.85	6,952.00	-575.00	622.53	Start DLS 1.00 TFO 180.00	
7,313.64	6,952.00	-575.79	622.53	Start 9294.00 hold at 7313.64 MD	
16,607.64	6,974.00	-9,869.76	622.53	TD at 16607.64	