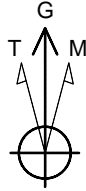


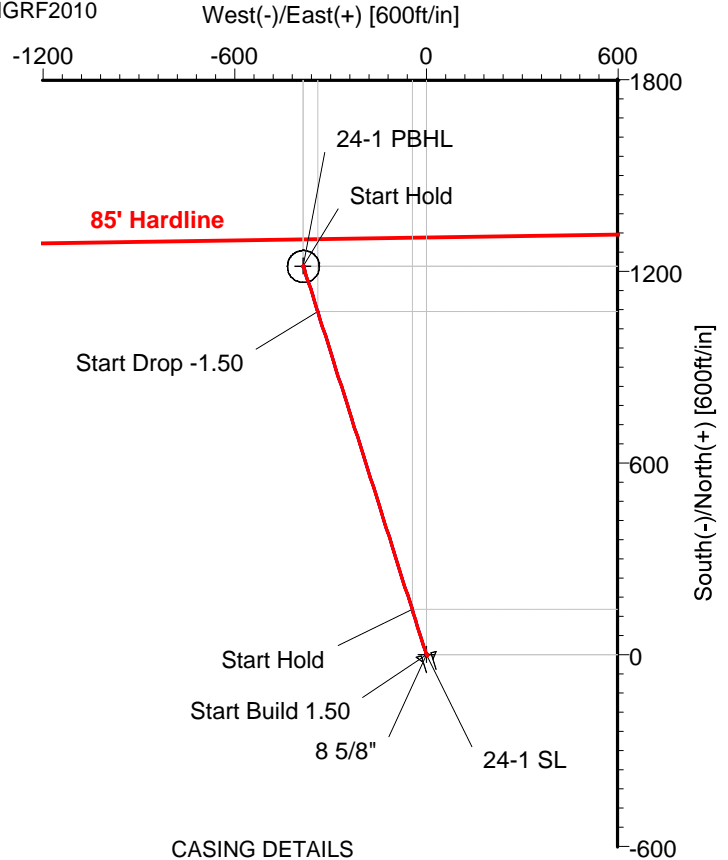
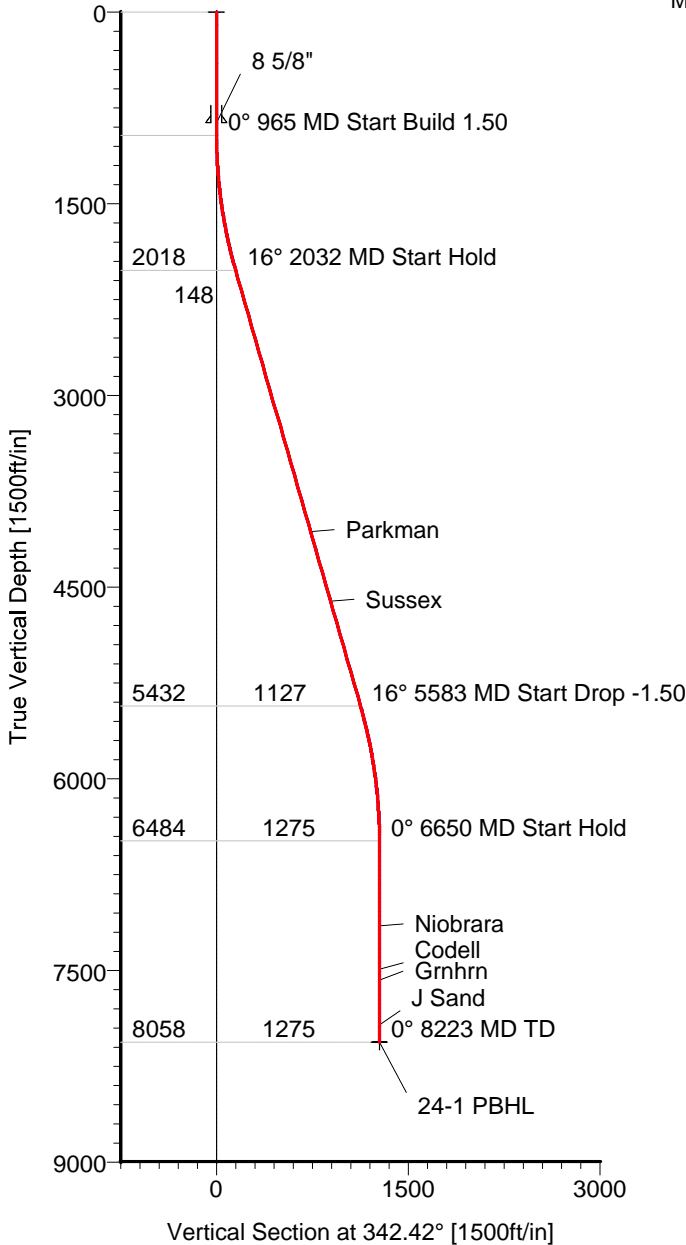
# ANADARKO PETROLEUM

Field: Weld County, CO  
Site: Morton 20-1 Pad  
Well: 24-1  
Wellpath: Original Hole  
Plan: Plan #1



Azimuths to Grid North  
True North: -0.43°  
Magnetic North: 8.44°

Magnetic Field  
Strength: 52989nT  
Dip Angle: 66.78°  
Date: 06/27/2011  
Model: IGRF2010



# ARCHER

## Planning Report

<b>Company:</b> ANADARKO PETROLEUM	<b>Date:</b> 06/27/2011	<b>Time:</b> 12:54:12	<b>Page:</b> 1
<b>Field:</b> Weld County, CO	<b>Co-ordinate(NE) Reference:</b> Well: 24-1, Grid North		
<b>Site:</b> Morton 20-1 Pad	<b>Vertical (TVD) Reference:</b> 4898'GL+15'KB 4913.0		
<b>Well:</b> 24-1	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,342.42Azi)		
<b>Wellpath:</b> Original Hole	<b>Plan:</b> Plan #1		

<b>Field:</b> Weld County, CO		
<b>Map System:</b> US State Plane Coordinate System 1983	<b>Map Zone:</b> Colorado, Northern Zone	
<b>Geo Datum:</b> GRS 1980	<b>Coordinate System:</b> Well Centre	
<b>Sys Datum:</b> Mean Sea Level	<b>Geomagnetic Model:</b> IGRF2010	

<b>Site:</b> Morton 20-1 Pad					
Centered on 23-1					
<b>Site Position:</b>	<b>Northing:</b> 1271420.72 ft	<b>Latitude:</b> 40 4 35.432 N			
<b>From:</b> Geographic	<b>Easting:</b> 3186532.35 ft	<b>Longitude:</b> 104 50 0.409 W			
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> Grid			
<b>Ground Level:</b> 4898.00 ft		<b>Grid Convergence:</b> 0.43 deg			

<b>Well:</b> 24-1	<b>Slot Name:</b> 24-1				
<b>Well Position:</b> +N/-S 0.52 ft	<b>Northing:</b> 1271421.24 ft	<b>Latitude:</b> 40 4 35.435 N			
+E/-W 30.01 ft	<b>Easting :</b> 3186562.36 ft	<b>Longitude:</b> 104 50 0.023 W			
<b>Position Uncertainty:</b> 0.00 ft					

<b>Wellpath:</b> Original Hole	<b>Drilled From:</b> Surface				
<b>Current Datum:</b> 4898'GL+15'KB	<b>Tie-on Depth:</b> 0.00 ft				
<b>Magnetic Data:</b> 06/27/2011	<b>Above System Datum:</b> Mean Sea Level				
<b>Field Strength:</b> 52989 nT	<b>Declination:</b> 8.87 deg				
<b>Vertical Section:</b> Depth From (TVD)	<b>Mag Dip Angle:</b> 66.78 deg				
ft	+N/-S ft	+E/-W ft	<b>Direction</b> deg		
0.00	0.00	0.00	342.42		

<b>Plan:</b> Plan #1	<b>Date Composed:</b> 06/27/2011	
<b>Principal:</b> Yes	<b>Version:</b> 1	
	<b>Tied-to:</b> From Surface	

### Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	342.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
965.00	0.00	342.42	965.00	0.00	0.00	0.00	0.00	0.00	0.00	
2031.67	16.00	342.42	2017.86	141.06	-44.69	1.50	1.50	0.00	342.42	
5582.89	16.00	342.42	5431.52	1074.19	-340.34	0.00	0.00	0.00	0.00	
6649.56	0.00	342.42	6484.37	1215.25	-385.03	1.50	-1.50	0.00	180.00	
8223.19	0.00	342.42	8058.00	1215.25	-385.03	0.00	0.00	0.00	0.00	24-1 PBHL

### Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
965.00	0.00	342.42	965.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.53	342.42	1000.00	0.15	-0.05	0.16	1.50	1.50	0.00	
1100.00	2.03	342.42	1099.97	2.27	-0.72	2.39	1.50	1.50	0.00	
1200.00	3.53	342.42	1199.85	6.89	-2.18	7.23	1.50	1.50	0.00	
1300.00	5.03	342.42	1299.57	14.00	-4.43	14.68	1.50	1.50	0.00	
1400.00	6.53	342.42	1399.06	23.59	-7.47	24.74	1.50	1.50	0.00	
1500.00	8.03	342.42	1498.25	35.66	-11.30	37.41	1.50	1.50	0.00	
1600.00	9.53	342.42	1597.08	50.20	-15.91	52.66	1.50	1.50	0.00	
1700.00	11.03	342.42	1695.47	67.20	-21.29	70.50	1.50	1.50	0.00	
1800.00	12.53	342.42	1793.37	86.66	-27.46	90.90	1.50	1.50	0.00	
1900.00	14.03	342.42	1890.69	108.55	-34.39	113.87	1.50	1.50	0.00	
2000.00	15.53	342.42	1987.38	132.86	-42.09	139.37	1.50	1.50	0.00	
2031.67	16.00	342.42	2017.86	141.06	-44.69	147.97	1.50	1.50	0.00	
2100.00	16.00	342.42	2083.54	159.01	-50.38	166.80	0.00	0.00	0.00	
2200.00	16.00	342.42	2179.67	185.29	-58.71	194.37	0.00	0.00	0.00	

# ARCHER

## Planning Report

**Company:** ANADARKO PETROLEUM  
**Field:** Weld County, CO  
**Site:** Morton 20-1 Pad  
**Well:** 24-1  
**Wellpath:** Original Hole

**Date:** 06/27/2011  
**Co-ordinate(NE) Reference:** Well: 24-1, Grid North  
**Vertical (TVD) Reference:** 4898'GL+15'KB 4913.0  
**Section (VS) Reference:** Well (0.00N,0.00E,342.42Azi)  
**Plan:** Plan #1

**Page:** 2

### Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2300.00	16.00	342.42	2275.80	211.57	-67.03	221.93	0.00	0.00	0.00	
2400.00	16.00	342.42	2371.92	237.84	-75.36	249.50	0.00	0.00	0.00	
2500.00	16.00	342.42	2468.05	264.12	-83.68	277.06	0.00	0.00	0.00	
2600.00	16.00	342.42	2564.17	290.40	-92.01	304.62	0.00	0.00	0.00	
2700.00	16.00	342.42	2660.30	316.67	-100.33	332.19	0.00	0.00	0.00	
2800.00	16.00	342.42	2756.43	342.95	-108.66	359.75	0.00	0.00	0.00	
2900.00	16.00	342.42	2852.55	369.23	-116.98	387.31	0.00	0.00	0.00	
3000.00	16.00	342.42	2948.68	395.50	-125.31	414.88	0.00	0.00	0.00	
3100.00	16.00	342.42	3044.81	421.78	-133.63	442.44	0.00	0.00	0.00	
3200.00	16.00	342.42	3140.93	448.05	-141.96	470.01	0.00	0.00	0.00	
3300.00	16.00	342.42	3237.06	474.33	-150.28	497.57	0.00	0.00	0.00	
3400.00	16.00	342.42	3333.18	500.61	-158.61	525.13	0.00	0.00	0.00	
3500.00	16.00	342.42	3429.31	526.88	-166.94	552.70	0.00	0.00	0.00	
3600.00	16.00	342.42	3525.44	553.16	-175.26	580.26	0.00	0.00	0.00	
3700.00	16.00	342.42	3621.56	579.44	-183.59	607.82	0.00	0.00	0.00	
3800.00	16.00	342.42	3717.69	605.71	-191.91	635.39	0.00	0.00	0.00	
3900.00	16.00	342.42	3813.81	631.99	-200.24	662.95	0.00	0.00	0.00	
4000.00	16.00	342.42	3909.94	658.27	-208.56	690.52	0.00	0.00	0.00	
4100.00	16.00	342.42	4006.07	684.54	-216.89	718.08	0.00	0.00	0.00	
4159.23	16.00	342.42	4063.00	700.11	-221.82	734.40	0.00	0.00	0.00	Parkman
4200.00	16.00	342.42	4102.19	710.82	-225.21	745.64	0.00	0.00	0.00	
4300.00	16.00	342.42	4198.32	737.10	-233.54	773.21	0.00	0.00	0.00	
4400.00	16.00	342.42	4294.45	763.37	-241.86	800.77	0.00	0.00	0.00	
4500.00	16.00	342.42	4390.57	789.65	-250.19	828.33	0.00	0.00	0.00	
4600.00	16.00	342.42	4486.70	815.92	-258.51	855.90	0.00	0.00	0.00	
4700.00	16.00	342.42	4582.82	842.20	-266.84	883.46	0.00	0.00	0.00	
4726.19	16.00	342.42	4608.00	849.08	-269.02	890.68	0.00	0.00	0.00	Sussex
4800.00	16.00	342.42	4678.95	868.48	-275.16	911.03	0.00	0.00	0.00	
4900.00	16.00	342.42	4775.08	894.75	-283.49	938.59	0.00	0.00	0.00	
5000.00	16.00	342.42	4871.20	921.03	-291.81	966.15	0.00	0.00	0.00	
5100.00	16.00	342.42	4967.33	947.31	-300.14	993.72	0.00	0.00	0.00	
5200.00	16.00	342.42	5063.45	973.58	-308.46	1021.28	0.00	0.00	0.00	
5300.00	16.00	342.42	5159.58	999.86	-316.79	1048.84	0.00	0.00	0.00	
5400.00	16.00	342.42	5255.71	1026.14	-325.12	1076.41	0.00	0.00	0.00	
5500.00	16.00	342.42	5351.83	1052.41	-333.44	1103.97	0.00	0.00	0.00	
5582.89	16.00	342.42	5431.52	1074.19	-340.34	1126.82	0.00	0.00	0.00	
5600.00	15.74	342.42	5447.97	1078.65	-341.75	1131.50	1.50	-1.50	0.00	
5700.00	14.24	342.42	5544.56	1103.32	-349.57	1157.37	1.50	-1.50	0.00	
5800.00	12.74	342.42	5641.80	1125.56	-356.62	1180.70	1.50	-1.50	0.00	
5900.00	11.24	342.42	5739.61	1145.37	-362.89	1201.48	1.50	-1.50	0.00	
6000.00	9.74	342.42	5837.94	1162.73	-368.39	1219.69	1.50	-1.50	0.00	
6100.00	8.24	342.42	5936.71	1177.63	-373.11	1235.32	1.50	-1.50	0.00	
6200.00	6.74	342.42	6035.85	1190.06	-377.05	1248.36	1.50	-1.50	0.00	
6300.00	5.24	342.42	6135.30	1200.01	-380.21	1258.81	1.50	-1.50	0.00	
6400.00	3.74	342.42	6234.99	1207.48	-382.57	1266.64	1.50	-1.50	0.00	
6500.00	2.24	342.42	6334.85	1212.46	-384.15	1271.86	1.50	-1.50	0.00	
6600.00	0.74	342.42	6434.81	1214.95	-384.94	1274.47	1.50	-1.50	0.00	
6649.56	0.00	342.42	6484.37	1215.25	-385.03	1274.79	1.50	-1.50	0.00	
6700.00	0.00	342.42	6534.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
6800.00	0.00	342.42	6634.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
6900.00	0.00	342.42	6734.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7000.00	0.00	342.42	6834.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7100.00	0.00	342.42	6934.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7200.00	0.00	342.42	7034.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	

# ARCHER

## Planning Report

<b>Company:</b> ANADARKO PETROLEUM <b>Field:</b> Weld County, CO <b>Site:</b> Morton 20-1 Pad <b>Well:</b> 24-1 <b>Wellpath:</b> Original Hole	<b>Date:</b> 06/27/2011 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Plan:</b>	<b>Time:</b> 12:54:12 Well: 24-1, Grid North 4898'GL+15'KB 4913.0 Well (0.00N,0.00E,342.42Azi) Plan #1	<b>Page:</b> 3
--	--	--	----------------

### Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
7300.00	0.00	342.42	7134.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7313.19	0.00	342.42	7148.00	1215.25	-385.03	1274.79	0.00	0.00	0.00	Niobrara
7400.00	0.00	342.42	7234.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7500.00	0.00	342.42	7334.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7600.00	0.00	342.42	7434.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7653.19	0.00	342.42	7488.00	1215.25	-385.03	1274.79	0.00	0.00	0.00	Codell
7700.00	0.00	342.42	7534.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7738.19	0.00	342.42	7573.00	1215.25	-385.03	1274.79	0.00	0.00	0.00	Grnhm
7800.00	0.00	342.42	7634.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
7900.00	0.00	342.42	7734.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
8000.00	0.00	342.42	7834.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
8088.19	0.00	342.42	7923.00	1215.25	-385.03	1274.79	0.00	0.00	0.00	J Sand
8100.00	0.00	342.42	7934.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
8200.00	0.00	342.42	8034.81	1215.25	-385.03	1274.79	0.00	0.00	0.00	
8223.19	0.00	342.42	8058.00	1215.25	-385.03	1274.79	0.00	0.00	0.00	24-1 PBHL

### Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ----> Deg Min Sec			<--- Longitude ---> Deg Min Sec		
24-1 SL		0.00	0.00	0.00	1271421.24	3186562.36	40	4	35.435 N	104	50	0.023 W
24-1 PBHL		8058.00	1215.25	-385.03	1272636.49	3186177.33	40	4	47.473 N	104	50	4.859 W
-Circle (Radius: 50)												
-Plan hit target												

### Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
865.00	865.00	8.625	9.875	8 5/8"

### Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
4159.23	4063.00	Parkman		0.00	0.00
4726.19	4608.00	Sussex		0.00	0.00
7313.19	7148.00	Niobrara		0.00	0.00
7653.19	7488.00	Codell		0.00	0.00
7738.19	7573.00	Grnhm		0.00	0.00
8088.19	7923.00	J Sand		0.00	0.00