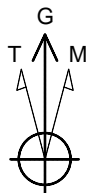


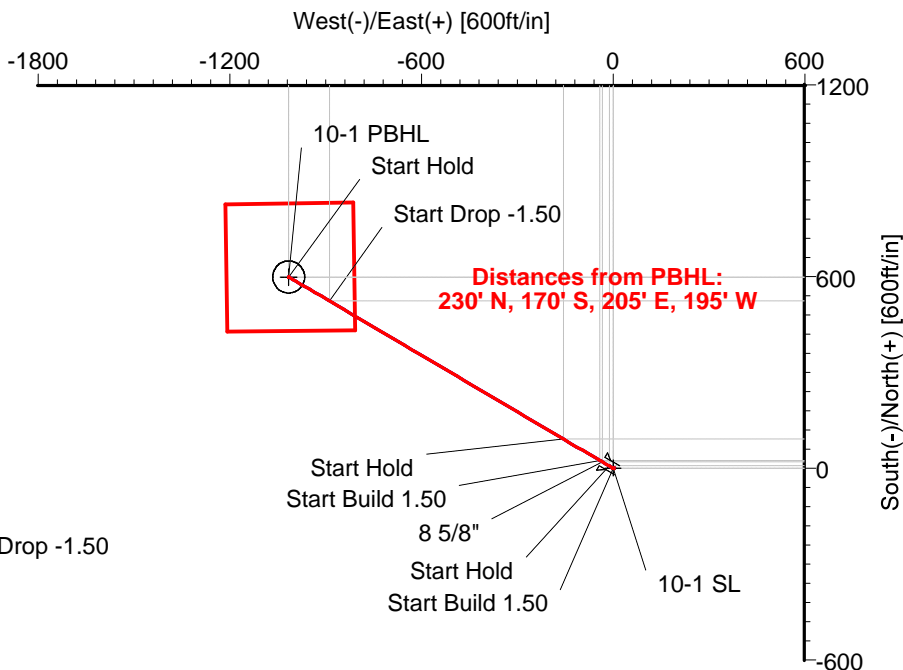
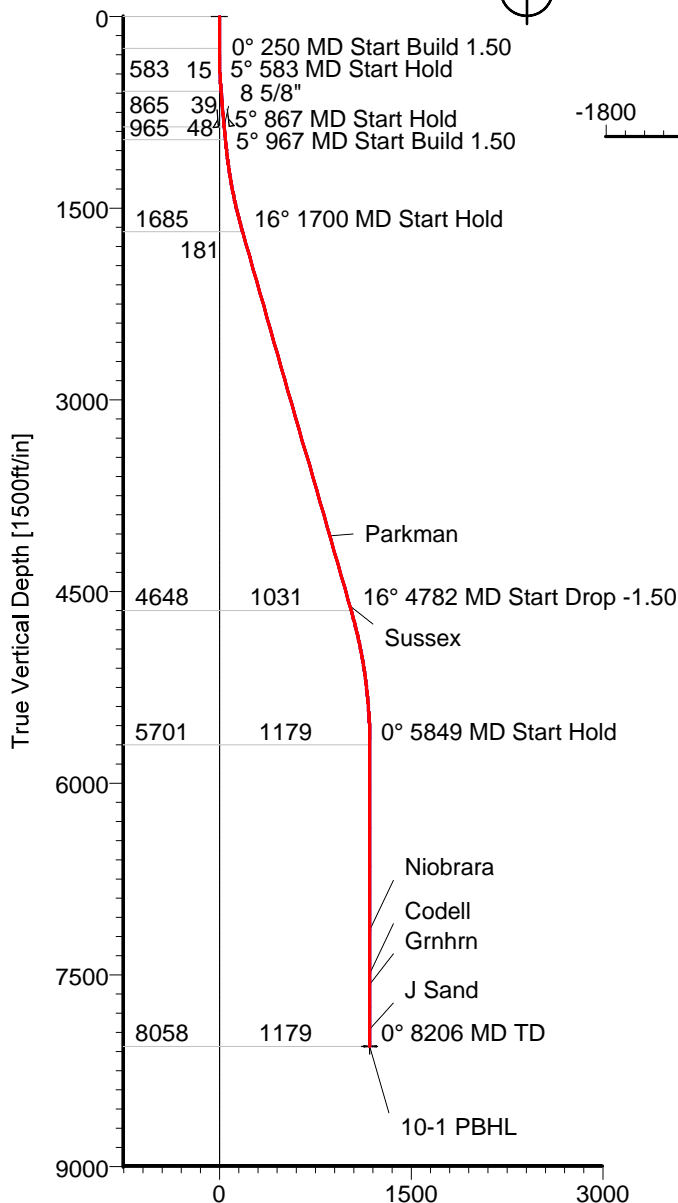
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Morton 20-1 Pad
Well: 10-1
Wellpath: Original Hole
Plan: Plan #1



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

Magnetic Field
Strength: 52991nT
Dip Angle: 66.78°
Date: 06/23/2011
Model: IGRF2010



CASING DETAILS

No.	TVD	MD	Name	Size
1	865.00	866.50	8 5/8"	8.625

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	4063.00	4174.12	Parkman
2	4608.00	4741.08	Sussex
3	7148.00	7296.49	Niobrara
4	7488.00	7636.49	Codell
5	7573.00	7721.49	Grnhm
6	7923.00	8071.49	J Sand

Vertical Section at 300.51° [1500ft/in]

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
10-1 SL	0.00	0.00	0.00	40°04'35.433N	104°50'00.280W	Point
10-1 PBHL	8058.00	598.56	-1015.76	40°04'41.423N	104°50'13.289W	Circle (Radius: 50)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	300.51	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	300.51	250.00	0.00	0.00	0.00	300.51	0.00	
3	583.33	5.00	300.51	582.91	7.38	-12.52	1.50	300.51	14.54	
4	866.50	5.00	300.51	865.00	19.91	-33.79	0.00	0.00	39.21	
5	966.50	5.00	300.51	964.62	24.33	-41.29	0.00	0.00	47.93	
6	1699.83	16.00	300.51	1684.57	92.08	-156.25	1.50	0.00	181.36	
7	4782.38	16.00	300.51	4647.70	523.44	-888.27	0.00	0.00	1031.03	
8	5849.05	0.00	300.51	5700.56	598.56	-1015.76	1.50	180.00	1179.00	
9	8206.49	0.00	300.51	8058.00	598.56	-1015.76	0.00	0.00	1179.00	10-1 PBHL

Plan: Plan #1 (10-1/Original Hole)

Created By: Ivonne Gonzalez

Date: 06/27/2011

ARCHER DIRECTIONAL DRILLING SERVICES
911 Regional Park Drive Houston, Texas 77060
Phone: 713-934-9600 Fax: 713-934-9067

Archer

ARCHER

Planning Report

Company: ANADARKO PETROLEUM	Date: 06/27/2011	Time: 12:36:14	Page: 1
Field: Weld County, CO	Co-ordinate(NE) Reference: Well: 10-1, Grid North		
Site: Morton 20-1 Pad	Vertical (TVD) Reference: 4898'GL+15'KB 4913.0		
Well: 10-1	Section (VS) Reference: Well (0.00N,0.00E,300.51Azi)		
Wellpath: Original Hole	Plan: Plan #1		

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

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

Well: 10-1	Slot Name: 10-1				
Well Position: +N/-S 0.18 ft	Northing: 1271420.90 ft	Latitude: 40 4 35.433 N			
+E/-W 10.01 ft	Easting : 3186542.36 ft	Longitude: 104 50 0.280 W			
Position Uncertainty: 0.00 ft					

Wellpath: Original Hole	Drilled From: Surface				
Current Datum: 4898'GL+15'KB	Tie-on Depth: 0.00 ft				
Magnetic Data: 06/23/2011	Above System Datum: Mean Sea Level				
Field Strength: 52991 nT	Declination: 8.87 deg				
Vertical Section: Depth From (TVD)	Mag Dip Angle: 66.78 deg				
ft	+N/-S ft	+E/-W ft	Direction deg		
0.00	0.00	0.00	300.51		

Plan: Plan #1	Date Composed: 06/27/2011	
Principal: Yes	Version: 1	
	Tied-to: 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	300.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	300.51	250.00	0.00	0.00	0.00	0.00	0.00	300.51	
583.33	5.00	300.51	582.91	7.38	-12.52	1.50	1.50	0.00	300.51	
866.50	5.00	300.51	865.00	19.91	-33.79	0.00	0.00	0.00	0.00	
966.50	5.00	300.51	964.62	24.33	-41.29	0.00	0.00	0.00	0.00	
1699.83	16.00	300.51	1684.57	92.08	-156.25	1.50	1.50	0.00	0.00	
4782.38	16.00	300.51	4647.70	523.44	-888.27	0.00	0.00	0.00	0.00	
5849.05	0.00	300.51	5700.56	598.56	-1015.76	1.50	-1.50	0.00	180.00	
8206.49	0.00	300.51	8058.00	598.56	-1015.76	0.00	0.00	0.00	0.00	10-1 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
250.00	0.00	300.51	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.75	300.51	300.00	0.17	-0.28	0.33	1.50	1.50	0.00	
400.00	2.25	300.51	399.96	1.50	-2.54	2.94	1.50	1.50	0.00	
500.00	3.75	300.51	499.82	4.15	-7.05	8.18	1.50	1.50	0.00	
583.33	5.00	300.51	582.91	7.38	-12.52	14.54	1.50	1.50	0.00	
600.00	5.00	300.51	599.51	8.12	-13.77	15.99	0.00	0.00	0.00	
700.00	5.00	300.51	699.13	12.54	-21.28	24.70	0.00	0.00	0.00	
800.00	5.00	300.51	798.75	16.97	-28.79	33.42	0.00	0.00	0.00	
866.50	5.00	300.51	865.00	19.91	-33.79	39.21	0.00	0.00	0.00	8 5/8"
900.00	5.00	300.51	898.37	21.39	-36.30	42.13	0.00	0.00	0.00	
966.50	5.00	300.51	964.62	24.33	-41.29	47.93	0.00	0.00	0.00	
1000.00	5.50	300.51	997.98	25.89	-43.94	51.00	1.50	1.50	0.00	
1100.00	7.00	300.51	1097.38	31.42	-53.32	61.89	1.50	1.50	0.00	

ARCHER

Planning Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Morton 20-1 Pad
Well: 10-1
Wellpath: Original Hole

Date: 06/27/2011
Co-ordinate(NE) Reference: Well: 10-1, Grid North
Vertical (TVD) Reference: 4898'GL+15'KB 4913.0
Section (VS) Reference: Well (0.00N,0.00E,300.51Azi)
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
1200.00	8.50	300.51	1196.46	38.27	-64.94	75.38	1.50	1.50	0.00	
1300.00	10.00	300.51	1295.16	46.43	-78.79	91.45	1.50	1.50	0.00	
1400.00	11.50	300.51	1393.40	55.90	-94.86	110.11	1.50	1.50	0.00	
1500.00	13.00	300.51	1491.12	66.68	-113.15	131.33	1.50	1.50	0.00	
1600.00	14.50	300.51	1588.25	78.74	-133.63	155.10	1.50	1.50	0.00	
1699.83	16.00	300.51	1684.57	92.08	-156.25	181.36	1.50	1.50	0.00	
1800.00	16.00	300.51	1780.85	106.09	-180.04	208.97	0.00	0.00	0.00	
1900.00	16.00	300.51	1876.98	120.09	-203.79	236.54	0.00	0.00	0.00	
2000.00	16.00	300.51	1973.10	134.08	-227.53	264.10	0.00	0.00	0.00	
2100.00	16.00	300.51	2069.23	148.08	-251.28	291.67	0.00	0.00	0.00	
2200.00	16.00	300.51	2165.36	162.07	-275.03	319.23	0.00	0.00	0.00	
2300.00	16.00	300.51	2261.48	176.06	-298.78	346.79	0.00	0.00	0.00	
2400.00	16.00	300.51	2357.61	190.06	-322.52	374.36	0.00	0.00	0.00	
2500.00	16.00	300.51	2453.74	204.05	-346.27	401.92	0.00	0.00	0.00	
2600.00	16.00	300.51	2549.86	218.04	-370.02	429.48	0.00	0.00	0.00	
2700.00	16.00	300.51	2645.99	232.04	-393.77	457.05	0.00	0.00	0.00	
2800.00	16.00	300.51	2742.11	246.03	-417.51	484.61	0.00	0.00	0.00	
2900.00	16.00	300.51	2838.24	260.03	-441.26	512.18	0.00	0.00	0.00	
3000.00	16.00	300.51	2934.37	274.02	-465.01	539.74	0.00	0.00	0.00	
3100.00	16.00	300.51	3030.49	288.01	-488.75	567.30	0.00	0.00	0.00	
3200.00	16.00	300.51	3126.62	302.01	-512.50	594.87	0.00	0.00	0.00	
3300.00	16.00	300.51	3222.74	316.00	-536.25	622.43	0.00	0.00	0.00	
3400.00	16.00	300.51	3318.87	329.99	-560.00	649.99	0.00	0.00	0.00	
3500.00	16.00	300.51	3415.00	343.99	-583.74	677.56	0.00	0.00	0.00	
3600.00	16.00	300.51	3511.12	357.98	-607.49	705.12	0.00	0.00	0.00	
3700.00	16.00	300.51	3607.25	371.98	-631.24	732.69	0.00	0.00	0.00	
3800.00	16.00	300.51	3703.38	385.97	-654.99	760.25	0.00	0.00	0.00	
3900.00	16.00	300.51	3799.50	399.96	-678.73	787.81	0.00	0.00	0.00	
4000.00	16.00	300.51	3895.63	413.96	-702.48	815.38	0.00	0.00	0.00	
4100.00	16.00	300.51	3991.75	427.95	-726.23	842.94	0.00	0.00	0.00	
4174.12	16.00	300.51	4063.00	438.32	-743.83	863.37	0.00	0.00	0.00	Parkman
4200.00	16.00	300.51	4087.88	441.94	-749.97	870.50	0.00	0.00	0.00	
4300.00	16.00	300.51	4184.01	455.94	-773.72	898.07	0.00	0.00	0.00	
4400.00	16.00	300.51	4280.13	469.93	-797.47	925.63	0.00	0.00	0.00	
4500.00	16.00	300.51	4376.26	483.93	-821.22	953.20	0.00	0.00	0.00	
4600.00	16.00	300.51	4472.38	497.92	-844.96	980.76	0.00	0.00	0.00	
4700.00	16.00	300.51	4568.51	511.91	-868.71	1008.32	0.00	0.00	0.00	
4741.08	16.00	300.51	4608.00	517.66	-878.47	1019.65	0.00	0.00	0.00	Sussex
4782.38	16.00	300.51	4647.70	523.44	-888.27	1031.03	0.00	0.00	0.00	
4800.00	15.74	300.51	4664.65	525.89	-892.42	1035.85	1.50	-1.50	0.00	
4900.00	14.24	300.51	4761.24	539.02	-914.70	1061.70	1.50	-1.50	0.00	
5000.00	12.74	300.51	4858.48	550.85	-934.79	1085.02	1.50	-1.50	0.00	
5100.00	11.24	300.51	4956.30	561.40	-952.68	1105.79	1.50	-1.50	0.00	
5200.00	9.74	300.51	5054.63	570.64	-968.36	1123.99	1.50	-1.50	0.00	
5300.00	8.24	300.51	5153.40	578.57	-981.82	1139.61	1.50	-1.50	0.00	
5400.00	6.74	300.51	5252.54	585.18	-993.04	1152.63	1.50	-1.50	0.00	
5500.00	5.24	300.51	5352.00	590.47	-1002.03	1163.06	1.50	-1.50	0.00	
5600.00	3.74	300.51	5451.69	594.44	-1008.76	1170.88	1.50	-1.50	0.00	
5700.00	2.24	300.51	5551.55	597.09	-1013.25	1176.09	1.50	-1.50	0.00	
5800.00	0.74	300.51	5651.51	598.41	-1015.49	1178.69	1.50	-1.50	0.00	
5849.05	0.00	300.51	5700.56	598.56	-1015.76	1179.00	1.50	-1.50	0.00	
5900.00	0.00	300.51	5751.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6000.00	0.00	300.51	5851.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	

ARCHER

Planning Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Morton 20-1 Pad
Well: 10-1
Wellpath: Original Hole

Date: 06/27/2011
Co-ordinate(NE) Reference: Well: 10-1, Grid North
Vertical (TVD) Reference: 4898'GL+15'KB 4913.0
Section (VS) Reference: Well (0.00N,0.00E,300.51Azi)
Plan: Plan #1

Page: 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
6100.00	0.00	300.51	5951.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6200.00	0.00	300.51	6051.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6300.00	0.00	300.51	6151.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6400.00	0.00	300.51	6251.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6500.00	0.00	300.51	6351.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6600.00	0.00	300.51	6451.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6700.00	0.00	300.51	6551.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6800.00	0.00	300.51	6651.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
6900.00	0.00	300.51	6751.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7000.00	0.00	300.51	6851.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7100.00	0.00	300.51	6951.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7200.00	0.00	300.51	7051.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7296.49	0.00	300.51	7148.00	598.56	-1015.76	1179.00	0.00	0.00	0.00	Niobrara
7300.00	0.00	300.51	7151.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7400.00	0.00	300.51	7251.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7500.00	0.00	300.51	7351.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7600.00	0.00	300.51	7451.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7636.49	0.00	300.51	7488.00	598.56	-1015.76	1179.00	0.00	0.00	0.00	Codell
7700.00	0.00	300.51	7551.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7721.49	0.00	300.51	7573.00	598.56	-1015.76	1179.00	0.00	0.00	0.00	Grnhn
7800.00	0.00	300.51	7651.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
7900.00	0.00	300.51	7751.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
8000.00	0.00	300.51	7851.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
8071.49	0.00	300.51	7923.00	598.56	-1015.76	1179.00	0.00	0.00	0.00	J Sand
8100.00	0.00	300.51	7951.51	598.56	-1015.76	1179.00	0.00	0.00	0.00	
8206.49	0.00	300.51	8058.00	598.56	-1015.76	1179.00	0.00	0.00	0.00	10-1 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		
10-1 SL			0.00	0.00	0.00	1271420.90	3186542.36	40	4	35.433 N	104	50	0.280 W
10-1 PBHL			8058.00	598.56	-1015.76	1272019.46	3185526.61	40	4	41.423 N	104	50	13.289 W
-Circle (Radius: 50)													
-Plan hit target													

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
866.50	865.00	8.625	9.875	8 5/8"

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
4174.12	4063.00	Parkman		0.00	0.00
4741.08	4608.00	Sussex		0.00	0.00
7296.49	7148.00	Niobrara		0.00	0.00
7636.49	7488.00	Codell		0.00	0.00
7721.49	7573.00	Grnhn		0.00	0.00
8071.49	7923.00	J Sand		0.00	0.00