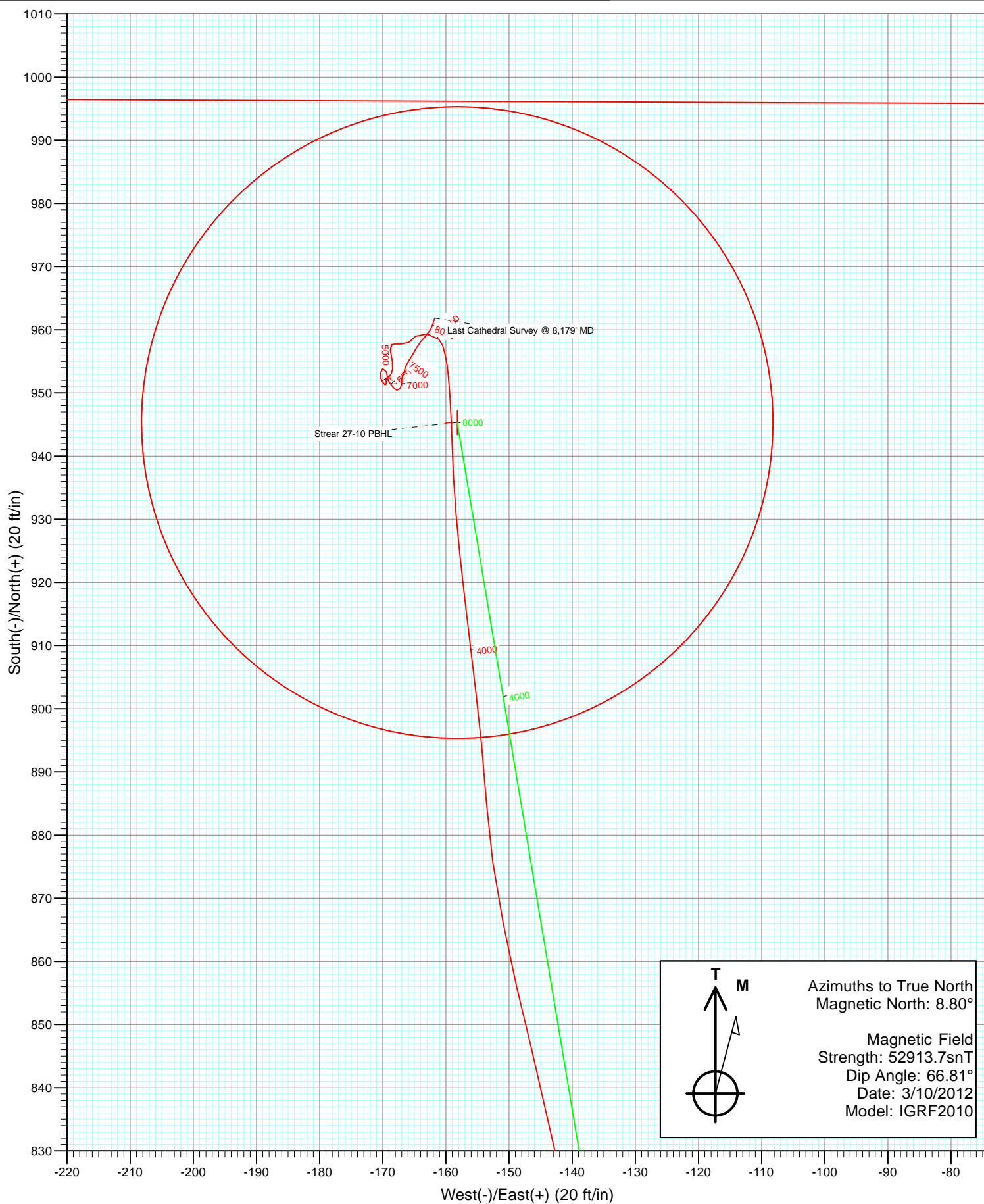


Azimuths to True North
Magnetic North: 8.80°

Magnetic Field
Strength: 52913.7snT
Dip Angle: 66.81°
Date: 3/10/2012
Model: IGRF2010

Type	Target	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	Strear 27-10 PBHL	Strear 27-10 PBHL	350.50	Slot	0.0	0.0	0.0
Name	Strear 27-10 PBHL	TVD	+N/-S	+E/-W	Latitude	Longitude	
		8063.0	945.3	-158.2	40.159727	-104.871808	

DD
Strear 27-10
125218; 150655 DN
KBE @ 4939.0ft (Xtreme 14)
North American Datum 1983
Well Strear 27-10, True North



Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Strear 27-10
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4939.0ft (Xtreme 14)
Site:	NENE Sec10-T2N-R67W (Strear 17-10-9F)	MD Reference:	KBE @ 4939.0ft (Xtreme 14)
Well:	Strear 27-10	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Project	DJ Wattenberg		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	NENE Sec10-T2N-R67W (Strear 17-10-9F)				
Site Position:		Northing:	1,300,712.08 ft	Latitude:	40.157132
From:	Lat/Long	Easting:	3,175,747.83 ft	Longitude:	-104.871242
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	Strear 27-10					
Well Position	+N/-S	0.0 ft	Northing:	1,300,712.07 ft	Latitude:	40.157132
	+E/-W	0.0 ft	Easting:	3,175,747.83 ft	Longitude:	-104.871242
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,924.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/10/2012	8.80	66.81	52,914

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	350.50	

Survey Program	Date	3/14/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
122.0	8,179.0	Survey #1 (DD)	MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
122.0	0.30	227.20	122.0	-0.2	-0.2	-0.2	0.25	0.25		
215.0	1.50	342.50	215.0	0.8	-0.8	0.9	1.77	1.29		
308.0	3.60	354.80	307.9	4.8	-1.4	5.0	2.32	2.26		
372.0	5.40	349.80	371.7	9.8	-2.1	10.0	2.88	2.81		
462.0	7.40	351.60	461.1	19.7	-3.7	20.1	2.23	2.22		
548.0	10.10	353.30	546.1	32.7	-5.4	33.1	3.15	3.14		
636.0	11.20	348.20	632.6	48.7	-8.1	49.4	1.64	1.25		
686.0	12.10	348.90	681.6	58.6	-10.1	59.5	1.82	1.80		
768.0	12.80	348.10	761.6	75.9	-13.6	77.1	0.88	0.85		
888.0	15.00	349.30	878.1	104.2	-19.2	105.9	1.85	1.83		
976.0	16.10	352.10	962.9	127.5	-23.0	129.5	1.51	1.25		
1,065.0	15.70	351.40	1,048.5	151.6	-26.5	153.9	0.50	-0.45		

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Strear 27-10
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4939.0ft (Xtreme 14)
Site:	NENE Sec10-T2N-R67W (Strear 17-10-9F)	MD Reference:	KBE @ 4939.0ft (Xtreme 14)
Well:	Strear 27-10	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,155.0	15.60	351.10	1,135.2	175.6	-30.2	178.2	0.14	-0.11	
1,243.0	15.60	350.80	1,219.9	199.0	-33.9	201.8	0.09	0.00	
1,333.0	15.60	351.40	1,306.6	222.9	-37.7	226.0	0.18	0.00	
1,421.0	15.80	350.80	1,391.3	246.4	-41.3	249.9	0.29	0.23	
1,511.0	15.20	349.80	1,478.1	270.1	-45.4	273.9	0.73	-0.67	
1,599.0	15.60	353.50	1,562.9	293.2	-48.8	297.3	1.21	0.45	
1,687.0	14.90	352.90	1,647.8	316.2	-51.5	320.4	0.82	-0.80	
1,777.0	15.40	350.60	1,734.7	339.5	-54.9	343.9	0.87	0.56	
1,865.0	15.00	348.50	1,819.6	362.2	-59.1	367.0	0.77	-0.45	
1,954.0	14.00	348.30	1,905.8	384.0	-63.6	389.2	1.12	-1.12	
2,044.0	14.30	348.10	1,993.0	405.5	-68.1	411.2	0.34	0.33	
2,130.0	16.00	350.80	2,076.0	427.6	-72.1	433.7	2.14	1.98	
2,218.0	14.90	349.60	2,160.9	450.7	-76.1	457.1	1.30	-1.25	
2,306.0	15.00	351.70	2,245.9	473.1	-79.8	479.8	0.63	0.11	
2,396.0	14.60	353.20	2,332.9	495.9	-82.8	502.8	0.62	-0.44	
2,484.0	14.60	353.60	2,418.0	518.0	-85.4	524.9	0.11	0.00	
2,572.0	14.70	351.40	2,503.2	540.0	-88.3	547.2	0.64	0.11	
2,660.0	14.40	352.00	2,588.4	561.9	-91.5	569.3	0.38	-0.34	
2,748.0	15.20	349.90	2,673.4	584.1	-95.0	591.8	1.09	0.91	
2,836.0	15.40	347.70	2,758.3	606.9	-99.5	615.0	0.70	0.23	
2,929.0	15.30	349.60	2,848.0	631.0	-104.4	639.6	0.55	-0.11	
3,010.0	14.20	344.40	2,926.3	651.1	-109.0	660.1	2.12	-1.36	
3,100.0	14.90	348.10	3,013.5	673.0	-114.3	682.7	1.29	0.78	
3,189.0	15.10	345.20	3,099.4	695.4	-119.7	705.7	0.87	0.22	
3,279.0	15.30	345.80	3,186.3	718.3	-125.6	729.2	0.28	0.22	
3,369.0	13.70	347.60	3,273.4	740.2	-130.8	751.6	1.85	-1.78	
3,456.0	13.60	355.00	3,358.0	760.5	-133.9	772.1	2.01	-0.11	
3,545.0	14.60	354.60	3,444.3	782.1	-135.8	793.7	1.13	1.12	
3,633.0	13.80	353.20	3,529.6	803.5	-138.1	815.3	0.99	-0.91	
3,722.0	13.90	348.50	3,616.0	824.5	-141.5	836.6	1.27	0.11	
3,811.0	14.30	345.90	3,702.3	845.7	-146.3	858.2	0.84	0.45	
3,899.0	13.20	348.80	3,787.8	866.1	-150.9	879.1	1.47	-1.25	
3,987.0	12.10	355.70	3,873.7	885.1	-153.6	898.3	2.12	-1.25	
4,076.0	10.40	353.20	3,961.0	902.4	-155.2	915.6	1.99	-1.91	
4,164.0	9.60	353.20	4,047.6	917.6	-157.0	930.9	0.91	-0.91	
4,251.0	7.80	355.40	4,133.6	930.7	-158.4	944.0	2.10	-2.07	
4,340.0	6.70	358.20	4,221.9	941.9	-159.0	955.2	1.30	-1.24	
4,427.0	4.70	355.80	4,308.5	950.5	-159.4	963.8	2.31	-2.30	
4,515.0	2.50	348.40	4,396.3	956.0	-160.1	969.3	2.55	-2.50	
4,603.0	1.20	314.50	4,484.2	958.5	-161.1	972.0	1.87	-1.48	
4,691.0	1.60	278.80	4,572.2	959.3	-163.0	973.1	1.07	0.45	
4,781.0	1.00	225.70	4,662.2	959.0	-164.8	973.0	1.42	-0.67	
4,870.0	0.80	229.40	4,751.2	958.0	-165.8	972.3	0.23	-0.22	
4,958.0	1.00	278.80	4,839.2	957.8	-167.1	972.2	0.88	0.23	
5,047.0	0.30	241.20	4,928.2	957.8	-168.0	972.4	0.88	-0.79	
5,136.0	0.50	271.00	5,017.2	957.7	-168.6	972.3	0.32	0.22	
5,225.0	1.20	166.80	5,106.2	956.8	-168.8	971.5	1.58	0.79	
5,313.0	1.10	172.70	5,194.1	955.0	-168.5	969.7	0.18	-0.11	
5,403.0	0.50	192.20	5,284.1	953.8	-168.4	968.5	0.72	-0.67	
5,491.0	0.40	197.90	5,372.1	953.1	-168.6	967.9	0.12	-0.11	
5,580.0	0.30	238.70	5,461.1	952.7	-168.9	967.5	0.29	-0.11	
5,668.0	0.30	239.20	5,549.1	952.5	-169.3	967.3	0.00	0.00	
5,757.0	0.30	177.20	5,638.1	952.1	-169.5	967.0	0.35	0.00	

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Strear 27-10
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4939.0ft (Xtreme 14)
Site:	NENE Sec10-T2N-R67W (Strear 17-10-9F)	MD Reference:	KBE @ 4939.0ft (Xtreme 14)
Well:	Strear 27-10	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
5,845.0	0.20	158.70	5,726.1	951.7	-169.4	966.6	0.14	-0.11	
5,935.0	0.30	203.30	5,816.1	951.4	-169.5	966.3	0.23	0.11	
6,023.0	0.30	323.30	5,904.1	951.3	-169.7	966.3	0.59	0.00	
6,111.0	0.50	320.80	5,992.1	951.8	-170.1	966.8	0.23	0.23	
6,200.0	0.30	2.20	6,081.1	952.4	-170.3	967.4	0.38	-0.22	
6,288.0	0.60	346.70	6,169.1	953.0	-170.4	968.1	0.36	0.34	
6,377.0	0.80	56.30	6,258.1	953.8	-170.0	968.8	0.92	0.22	
6,465.0	1.10	175.40	6,346.1	953.3	-169.4	968.2	1.87	0.34	
6,555.0	0.70	157.00	6,436.1	952.0	-169.1	966.8	0.54	-0.44	
6,643.0	0.60	127.10	6,524.1	951.2	-168.6	966.0	0.40	-0.11	
6,731.0	0.30	164.70	6,612.1	950.7	-168.1	965.4	0.46	-0.34	
6,819.0	0.40	98.80	6,700.1	950.4	-167.8	965.1	0.44	0.11	
6,908.0	0.40	29.00	6,789.1	950.6	-167.3	965.2	0.51	0.00	
6,996.0	0.30	23.50	6,877.1	951.1	-167.1	965.7	0.12	-0.11	
7,086.0	0.10	4.10	6,967.1	951.4	-167.0	965.9	0.23	-0.22	
7,175.0	0.20	349.60	7,056.1	951.7	-167.0	966.2	0.12	0.11	
7,264.0	0.30	355.30	7,145.1	952.0	-167.0	966.5	0.12	0.11	
7,352.0	0.60	25.30	7,233.1	952.7	-166.9	967.2	0.42	0.34	
7,441.0	0.40	15.00	7,322.1	953.4	-166.6	967.8	0.25	-0.22	
7,530.0	0.60	17.40	7,411.1	954.1	-166.4	968.5	0.23	0.22	
7,618.0	0.90	33.70	7,499.1	955.2	-165.8	969.4	0.42	0.34	
7,708.0	0.60	31.20	7,589.1	956.2	-165.2	970.3	0.34	-0.33	
7,796.0	0.70	27.20	7,677.1	957.0	-164.7	971.1	0.12	0.11	
7,884.0	1.00	38.80	7,765.0	958.1	-164.0	972.0	0.39	0.34	
7,970.0	0.80	43.30	7,851.0	959.1	-163.1	972.9	0.25	-0.23	
8,058.0	0.60	28.70	7,939.0	960.0	-162.5	973.6	0.30	-0.23	
8,129.0	1.00	21.10	8,010.0	960.9	-162.1	974.5	0.58	0.56	
8,179.0	1.29	15.53	8,060.0	961.8	-161.8	975.3	0.62	0.58	Last Cathedral Survey @ 8,179' MD - Strear 27-1

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Strear 27-10 PBHL	0.00	0.00	8,063.0	945.3	-158.2	1,301,656.25	3,175,582.93	40.159727	-104.871808
- actual wellpath misses target center by 17.2ft at 8179.0ft MD (8060.0 TVD, 961.8 N, -161.8 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
8,179.0	8,060.0	961.8	-161.8	Last Cathedral Survey @ 8,179' MD	

Checked By: _____ Approved By: _____ Date: _____