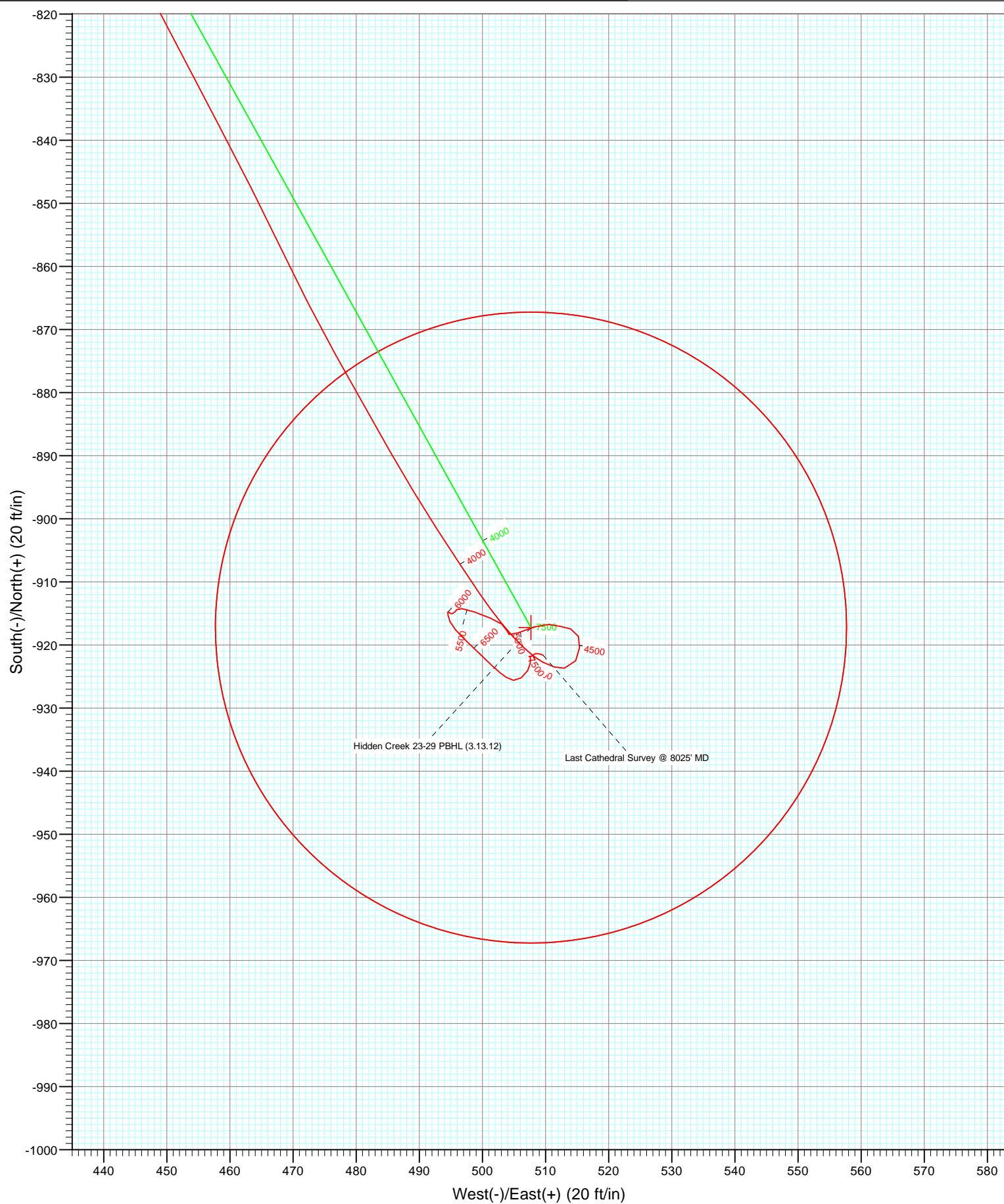


Azimuths to True North
Magnetic North: 8.80°

Magnetic Field
Strength: 52867.4snT
Dip Angle: 66.76°
Date: 4/30/2012
Model: IGRF2010

DD				Hidden Creek 23-29			
125260; 151455; DN				KB=15' @ 5045.0ft (Xtreme 14)			
GL @ 5030.0				North American Datum 1983			
Well Hidden Creek 23-29, True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
Target	Hidden Creek 23-29 PBHL (3.13.12)	151.04	Slot		0.0	0.0	0.0
Hidden Creek 23-29 PBHL (3.13.12)	TVD	+N/-S	+E/-W	Latitude	Longitude		
	7819.0	-917.2	507.7	40.105707	-104.914729		



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Hidden Creek 23-29
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Site:	NESW Sec29-T2N-R67W (Hidden Creek)	MD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Well:	Hidden Creek 23-29	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		NESW Sec29-T2N-R67W (Hidden Creek)			
Site Position:		Northing:	1,282,820.26 ft	Latitude:	40.108253
From:	Lat/Long	Easting:	3,163,202.98 ft	Longitude:	-104.916544
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.38 °

Well		Hidden Creek 23-29				
Well Position	+N/-S	0.0 ft	Northing:	1,282,810.05 ft	Latitude:	40.108225
	+E/-W	0.0 ft	Easting:	3,163,203.05 ft	Longitude:	-104.916544
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,030.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/30/2012	8.80	66.76	52,867

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	151.04	

Survey Program	Date	5/4/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
78.0	8,025.0	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		
78.0	1.00	175.70	78.0	-0.7	0.1	0.6	1.28	1.28		
171.0	1.00	177.40	171.0	-2.3	0.1	2.1	0.03	0.00		
264.0	0.80	179.80	264.0	-3.8	0.2	3.4	0.22	-0.22		
357.0	0.70	162.50	357.0	-4.9	0.4	4.5	0.26	-0.11		
404.0	0.90	160.90	404.0	-5.6	0.6	5.2	0.43	0.43		
493.0	2.50	149.30	492.9	-7.9	1.8	7.8	1.83	1.80		
583.0	4.00	144.10	582.8	-12.1	4.6	12.9	1.70	1.67		
671.0	5.60	140.50	670.5	-17.9	9.2	20.1	1.85	1.82		
760.0	7.10	140.60	758.9	-25.5	15.4	29.8	1.69	1.69		
855.0	8.80	144.90	853.0	-36.0	23.3	42.8	1.89	1.79		
923.0	9.10	149.60	920.2	-44.9	29.0	53.4	1.16	0.44		
1,013.0	11.60	153.90	1,008.7	-59.2	36.6	69.5	2.91	2.78		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Hidden Creek 23-29
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Site:	NESW Sec29-T2N-R67W (Hidden Creek)	MD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Well:	Hidden Creek 23-29	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
1,102.0	13.50	154.20	1,095.6	-76.6	45.1	88.8	2.14	2.13	
1,192.0	15.10	156.80	1,182.8	-96.8	54.3	111.0	1.92	1.78	
1,282.0	16.90	156.20	1,269.3	-119.5	64.2	135.7	2.01	2.00	
1,371.0	18.70	156.80	1,354.0	-144.5	75.0	162.7	2.03	2.02	
1,461.0	20.60	155.80	1,438.8	-172.2	87.2	192.9	2.14	2.11	
1,550.0	21.00	151.00	1,522.0	-200.4	101.3	224.4	1.97	0.45	
1,637.0	20.40	149.60	1,603.4	-227.1	116.6	255.2	0.89	-0.69	
1,726.0	20.20	147.60	1,686.8	-253.5	132.6	286.0	0.81	-0.22	
1,815.0	20.20	145.10	1,770.4	-279.1	149.7	316.7	0.97	0.00	
1,905.0	19.20	147.10	1,855.1	-304.2	166.6	346.9	1.34	-1.11	
1,994.0	18.90	147.70	1,939.2	-328.7	182.3	375.9	0.40	-0.34	
2,082.0	19.80	150.00	2,022.3	-353.7	197.3	405.0	1.34	1.02	
2,169.0	19.50	153.10	2,104.2	-379.4	211.3	434.2	1.25	-0.34	
2,258.0	18.90	154.50	2,188.2	-405.6	224.2	463.5	0.85	-0.67	
2,347.0	19.40	156.30	2,272.3	-432.2	236.3	492.6	0.87	0.56	
2,434.0	19.70	153.00	2,354.3	-458.5	248.8	521.6	1.32	0.34	
2,523.0	21.00	151.60	2,437.7	-485.9	263.2	552.6	1.56	1.46	
2,613.0	20.50	150.80	2,521.9	-513.8	278.6	584.4	0.64	-0.56	
2,699.0	18.50	147.10	2,603.0	-538.4	293.3	613.1	2.73	-2.33	
2,789.0	19.00	148.50	2,688.2	-562.9	308.7	642.0	0.75	0.56	
2,878.0	19.20	152.30	2,772.3	-588.2	323.1	671.1	1.41	0.22	
2,966.0	20.10	152.30	2,855.2	-614.4	336.9	700.7	1.02	1.02	
3,056.0	20.60	149.20	2,939.6	-641.7	352.1	732.0	1.32	0.56	
3,143.0	18.30	148.20	3,021.6	-666.5	367.2	760.9	2.67	-2.64	
3,230.0	19.60	150.40	3,103.9	-690.8	381.6	789.2	1.70	1.49	
3,319.0	19.30	152.10	3,187.8	-716.7	395.8	818.8	0.72	-0.34	
3,405.0	19.60	153.00	3,268.9	-742.2	409.0	847.4	0.49	0.35	
3,494.0	20.80	153.20	3,352.4	-769.6	422.9	878.1	1.35	1.35	
3,582.0	17.80	152.30	3,435.5	-795.4	436.2	907.2	3.43	-3.41	
3,669.0	15.60	152.70	3,518.8	-817.6	447.8	932.2	2.53	-2.53	
3,759.0	14.10	152.20	3,605.8	-838.1	458.5	955.2	1.67	-1.67	
3,849.0	13.00	154.40	3,693.3	-856.9	467.9	976.3	1.35	-1.22	
3,937.0	12.20	151.10	3,779.2	-873.9	476.7	995.5	1.22	-0.91	
4,026.0	10.40	150.20	3,866.4	-889.2	485.3	1,012.9	2.03	-2.02	
4,115.0	8.60	147.20	3,954.2	-901.7	492.9	1,027.6	2.10	-2.02	
4,203.0	6.90	145.70	4,041.4	-911.6	499.4	1,039.4	1.95	-1.93	
4,291.0	5.00	137.50	4,128.9	-918.8	505.0	1,048.4	2.36	-2.16	
4,380.0	2.90	117.90	4,217.7	-922.7	509.6	1,054.1	2.77	-2.36	
4,467.0	1.90	87.00	4,304.6	-923.7	513.0	1,056.6	1.84	-1.15	
4,556.0	1.50	16.60	4,393.6	-922.5	514.8	1,056.4	2.23	-0.45	
4,646.0	1.20	16.00	4,483.6	-920.4	515.4	1,054.9	0.33	-0.33	
4,735.0	1.30	336.00	4,572.6	-918.6	515.2	1,053.2	0.97	0.11	
4,825.0	1.10	286.20	4,662.5	-917.5	514.0	1,051.6	1.14	-0.22	
4,914.0	1.10	281.70	4,751.5	-917.0	512.3	1,050.4	0.10	0.00	
5,002.0	1.30	277.00	4,839.5	-916.8	510.5	1,049.3	0.25	0.23	
5,089.0	1.90	248.70	4,926.5	-917.2	508.2	1,048.5	1.12	0.69	
5,177.0	1.60	251.70	5,014.4	-918.1	505.6	1,048.1	0.36	-0.34	
5,263.0	0.40	292.30	5,100.4	-918.3	504.2	1,047.6	1.54	-1.40	
5,351.0	0.70	350.10	5,188.4	-917.7	503.8	1,046.9	0.67	0.34	
5,439.0	1.10	304.60	5,276.4	-916.7	503.1	1,045.6	0.90	0.45	
5,527.0	1.60	292.20	5,364.4	-915.7	501.2	1,043.9	0.65	0.57	
5,616.0	1.80	290.60	5,453.3	-914.8	498.8	1,041.9	0.23	0.22	
5,704.0	0.90	272.90	5,541.3	-914.3	496.8	1,040.5	1.12	-1.02	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Hidden Creek 23-29
Project:	DJ Wattenberg	TVD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Site:	NESW Sec29-T2N-R67W (Hidden Creek)	MD Reference:	KB=15' @ 5045.0ft (Xtreme 14)
Well:	Hidden Creek 23-29	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
5,792.0	0.30	222.20	5,629.3	-914.4	495.9	1,040.2	0.85	-0.68	
5,880.0	0.30	215.30	5,717.3	-914.7	495.7	1,040.4	0.04	0.00	
5,969.0	0.30	251.00	5,806.3	-915.0	495.3	1,040.4	0.21	0.00	
6,057.0	0.20	298.20	5,894.3	-915.0	494.9	1,040.2	0.25	-0.11	
6,144.0	0.30	316.10	5,981.3	-914.8	494.7	1,039.9	0.14	0.11	
6,232.0	0.20	169.70	6,069.3	-914.8	494.5	1,039.8	0.54	-0.11	
6,320.0	0.50	179.50	6,157.3	-915.3	494.5	1,040.3	0.35	0.34	
6,409.0	0.90	152.10	6,246.3	-916.3	494.9	1,041.3	0.57	0.45	
6,496.0	1.20	141.30	6,333.3	-917.6	495.8	1,042.9	0.41	0.34	
6,586.0	1.30	132.00	6,423.3	-919.0	497.1	1,044.8	0.25	0.11	
6,674.0	1.90	135.40	6,511.2	-920.7	498.9	1,047.2	0.69	0.68	
6,762.0	2.80	132.70	6,599.1	-923.2	501.5	1,050.6	1.03	1.02	
6,851.0	1.00	121.10	6,688.1	-925.1	503.8	1,053.4	2.06	-2.02	
6,938.0	0.70	98.80	6,775.1	-925.6	504.9	1,054.3	0.51	-0.34	
7,027.0	1.10	54.70	6,864.1	-925.2	506.2	1,054.6	0.87	0.45	
7,116.0	0.90	25.70	6,953.1	-924.1	507.2	1,054.1	0.60	-0.22	
7,206.0	0.70	11.70	7,043.1	-922.9	507.6	1,053.3	0.31	-0.22	
7,296.0	0.40	345.50	7,133.0	-922.0	507.6	1,052.5	0.43	-0.33	
7,384.0	0.10	231.10	7,221.0	-921.8	507.5	1,052.2	0.51	-0.34	
7,472.0	0.00	271.70	7,309.0	-921.8	507.4	1,052.3	0.11	-0.11	
7,560.0	0.20	84.30	7,397.0	-921.8	507.6	1,052.3	0.23	0.23	
7,646.0	0.30	55.90	7,483.0	-921.7	507.9	1,052.4	0.18	0.12	
7,735.0	0.10	49.10	7,572.0	-921.5	508.2	1,052.3	0.23	-0.22	
7,822.0	0.20	69.80	7,659.0	-921.4	508.4	1,052.3	0.13	0.11	
7,912.0	0.50	96.70	7,749.0	-921.4	508.9	1,052.6	0.37	0.33	
7,965.0	0.40	108.90	7,802.0	-921.5	509.3	1,052.9	0.26	-0.19	Hidden Creek 23-29 PBHL (3.13.12)
8,025.0	0.29	122.70	7,862.0	-921.6	509.6	1,053.1	0.23	-0.18	Last Cathedral Survey @ 8025' MD

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									
Hidden Creek 23-29 PBI	0.00	0.00	7,819.0	-917.2	507.7	1,281,896.17	3,163,716.76	40.105707	-104.914729
- actual wellpath misses target center by 17.6ft at 7965.0ft MD (7802.0 TVD, -921.5 N, 509.3 E)									
- Circle (radius 50.0)									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,025.0	7,862.0	-921.6	509.6	Last Cathedral Survey @ 8025' MD

Checked By: _____ Approved By: _____ Date: _____