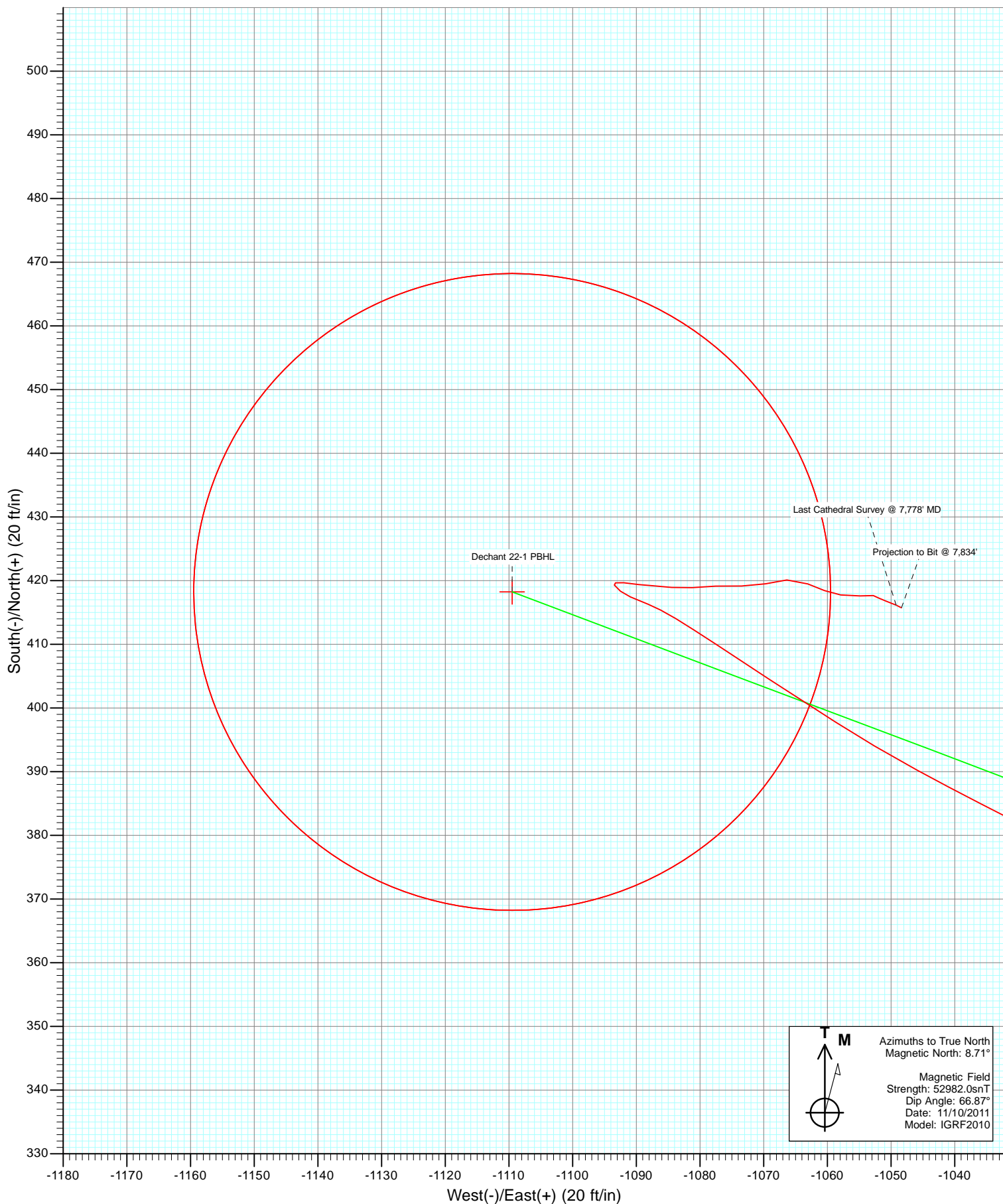


Azimuths to True North
Magnetic North: 8.71°

Magnetic Field
Strength: 52982.0nT
Dip Angle: 66.87°
Date: 11/10/2011
Model: IGRF2010

DD Dechant 22-1 115588/134355; LR KBE @ 4852.0ft (Xtreme 14) North American Datum 1983 Well Dechant 22-1, True North		Azimuth 290.65		Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Type Target	Target Dechant 22-1 PBHL	TVS 7712.0	+N/-S 418.2	+E/-W -1109.5	Latitude 40.167267	Longitude -104.616451	



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Dechant 22-1
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4852.0ft (Xtreme 14)
Site:	NESW Sec1-T2N-R65W (Dechant 23-1)	MD Reference:	KBE @ 4852.0ft (Xtreme 14)
Well:	Dechant 22-1	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 Sec1-T2N-R65W (Dechant 23-1)			
Site Position:		Northing:	1,304,604.07 ft	Latitude:	40.166119
From:	Lat/Long	Easting:	3,248,038.33 ft	Longitude:	-104.612481
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.57 °

Well	Dechant 22-1					
Well Position	+N/-S	0.0 ft	Northing:	1,304,604.07 ft	Latitude:	40.166119
	+E/-W	0.0 ft	Easting:	3,248,038.33 ft	Longitude:	-104.612481
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,837.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/10/2011	8.71	66.87	52,982

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	290.65	

Survey Program	Date	1/3/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
121.0	7,834.0	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		
121.0	0.20	2.40	121.0	0.2	0.0	0.1	0.17	0.17		
214.0	0.90	309.80	214.0	0.8	-0.5	0.8	0.85	0.75		
308.0	1.50	302.20	308.0	2.0	-2.2	2.7	0.66	0.64		
416.0	2.90	285.90	415.9	3.5	-6.0	6.8	1.41	1.30		
504.0	5.10	278.80	503.7	4.7	-12.0	12.9	2.56	2.50		
594.0	6.80	282.60	593.2	6.5	-21.1	22.1	1.94	1.89		
677.0	9.10	285.30	675.4	9.3	-32.3	33.5	2.81	2.77		
771.0	9.50	284.90	768.1	13.2	-46.9	48.6	0.43	0.43		
863.0	10.60	282.70	858.7	17.0	-62.5	64.5	1.27	1.20		
953.0	13.10	283.80	946.8	21.3	-80.5	82.8	2.79	2.78		
1,042.0	14.90	288.30	1,033.2	27.3	-101.2	104.3	2.36	2.02		
1,131.0	17.40	288.60	1,118.6	35.1	-124.6	129.0	2.81	2.81		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Dechant 22-1
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4852.0ft (Xtreme 14)
Site:	NESW Sec1-T2N-R65W (Dechant 23-1)	MD Reference:	KBE @ 4852.0ft (Xtreme 14)
Well:	Dechant 22-1	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
1,221.0	18.90	291.60	1,204.2	44.8	-151.0	157.0	1.96	1.67	
1,309.0	18.70	292.20	1,287.5	55.4	-177.3	185.4	0.32	-0.23	
1,398.0	18.50	293.20	1,371.8	66.3	-203.5	213.8	0.42	-0.22	
1,484.0	17.40	292.30	1,453.6	76.6	-227.9	240.3	1.32	-1.28	
1,574.0	17.20	291.30	1,539.6	86.5	-252.7	267.0	0.40	-0.22	
1,663.0	16.40	290.90	1,624.8	95.8	-276.7	292.7	0.91	-0.90	
1,751.0	16.40	291.80	1,709.2	104.8	-299.9	317.6	0.29	0.00	
1,841.0	14.50	290.60	1,795.9	113.5	-322.2	341.5	2.14	-2.11	
1,930.0	13.50	289.40	1,882.3	120.9	-342.5	363.1	1.17	-1.12	
2,020.0	12.30	288.50	1,970.0	127.4	-361.5	383.2	1.35	-1.33	
2,109.0	12.90	284.00	2,056.9	132.8	-380.1	402.5	1.29	0.67	
2,196.0	13.80	282.30	2,141.5	137.4	-399.6	422.4	1.13	1.03	
2,282.0	11.90	281.50	2,225.4	141.3	-418.4	441.3	2.22	-2.21	
2,372.0	11.90	278.90	2,313.4	144.6	-436.6	459.6	0.60	0.00	
2,461.0	14.20	279.90	2,400.1	147.9	-456.4	479.3	2.60	2.58	
2,550.0	14.20	285.70	2,486.4	152.7	-477.7	500.9	1.60	0.00	
2,639.0	14.60	291.30	2,572.6	159.8	-498.7	523.0	1.63	0.45	
2,728.0	12.70	287.00	2,659.1	166.7	-518.5	544.0	2.42	-2.13	
2,815.0	13.10	287.00	2,743.9	172.4	-537.1	563.3	0.46	0.46	
2,903.0	14.00	293.00	2,829.5	179.5	-556.4	583.9	1.90	1.02	
2,991.0	14.80	293.30	2,914.7	188.1	-576.5	605.8	0.91	0.91	
3,079.0	13.80	293.00	3,000.0	196.6	-596.5	627.5	1.14	-1.14	
3,167.0	13.10	294.20	3,085.5	204.8	-615.3	647.9	0.86	-0.80	
3,256.0	12.60	292.00	3,172.3	212.6	-633.5	667.7	0.79	-0.56	
3,346.0	12.70	293.10	3,260.1	220.1	-651.7	687.4	0.29	0.11	
3,433.0	12.00	290.10	3,345.1	227.0	-668.9	706.0	1.09	-0.80	
3,521.0	10.50	288.40	3,431.4	232.7	-685.1	723.2	1.75	-1.70	
3,609.0	10.20	286.70	3,518.0	237.4	-700.2	739.0	0.49	-0.34	
3,699.0	11.50	291.60	3,606.4	243.0	-716.2	755.9	1.77	1.44	
3,788.0	11.20	293.00	3,693.6	249.7	-732.4	773.4	0.46	-0.34	
3,876.0	11.70	291.60	3,779.9	256.3	-748.6	790.8	0.65	0.57	
3,963.0	12.20	295.20	3,865.0	263.4	-765.1	808.8	1.03	0.57	
4,053.0	14.00	296.50	3,952.7	272.4	-783.4	829.1	2.03	2.00	
4,141.0	13.40	296.60	4,038.2	281.7	-802.1	849.9	0.68	-0.68	
4,230.0	11.90	296.30	4,125.0	290.4	-819.5	869.3	1.69	-1.69	
4,318.0	12.10	288.60	4,211.1	297.3	-836.4	887.5	1.83	0.23	
4,405.0	14.10	290.00	4,295.8	303.9	-855.0	907.2	2.33	2.30	
4,494.0	13.40	294.90	4,382.3	311.9	-874.5	928.3	1.53	-0.79	
4,584.0	13.90	291.60	4,469.7	320.3	-894.1	949.6	1.03	0.56	
4,673.0	14.60	290.70	4,556.0	328.2	-914.5	971.5	0.82	0.79	
4,761.0	13.40	290.70	4,641.4	335.7	-934.4	992.8	1.36	-1.36	
4,851.0	12.00	291.30	4,729.2	342.8	-952.9	1,012.5	1.56	-1.56	
4,938.0	12.10	295.20	4,814.2	350.0	-969.5	1,030.7	0.94	0.11	
5,025.0	11.00	297.10	4,899.5	357.6	-985.2	1,048.0	1.34	-1.26	
5,114.0	11.00	300.80	4,986.8	365.8	-1,000.0	1,064.8	0.79	0.00	
5,203.0	10.50	297.90	5,074.3	374.0	-1,014.5	1,081.2	0.83	-0.56	
5,292.0	12.40	296.70	5,161.5	382.1	-1,030.2	1,098.8	2.15	2.13	
5,382.0	10.30	298.60	5,249.7	390.3	-1,045.9	1,116.3	2.37	-2.33	
5,470.0	9.00	302.50	5,336.5	397.7	-1,058.6	1,130.9	1.65	-1.48	
5,558.0	7.30	303.40	5,423.6	404.5	-1,069.1	1,143.1	1.94	-1.93	
5,647.0	5.70	303.30	5,512.0	410.0	-1,077.5	1,152.9	1.80	-1.80	
5,735.0	4.00	301.20	5,599.7	414.0	-1,083.8	1,160.2	1.94	-1.93	
5,824.0	2.30	291.30	5,688.6	416.3	-1,088.1	1,165.0	2.00	-1.91	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Dechant 22-1
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4852.0ft (Xtreme 14)
Site:	NESW Sec1-T2N-R65W (Dechant 23-1)	MD Reference:	KBE @ 4852.0ft (Xtreme 14)
Well:	Dechant 22-1	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
5,914.0	1.60	294.30	5,778.5	417.5	-1,090.9	1,168.1	0.79	-0.78	
6,003.0	0.70	312.10	5,867.5	418.3	-1,092.5	1,169.8	1.08	-1.01	
6,180.0	0.20	327.20	6,044.5	419.3	-1,093.4	1,171.1	0.29	-0.28	
6,269.0	0.40	51.30	6,133.5	419.6	-1,093.3	1,171.0	0.48	0.22	
6,358.0	1.40	98.80	6,222.5	419.7	-1,092.0	1,169.8	1.31	1.12	
6,445.0	1.70	95.20	6,309.5	419.4	-1,089.6	1,167.5	0.36	0.34	
6,533.0	1.60	94.70	6,397.4	419.2	-1,087.1	1,165.1	0.11	-0.11	
6,621.0	1.90	95.20	6,485.4	418.9	-1,084.4	1,162.5	0.34	0.34	
6,709.0	2.30	86.70	6,573.3	418.9	-1,081.2	1,159.5	0.57	0.45	
6,797.0	2.50	86.50	6,661.3	419.1	-1,077.5	1,156.1	0.23	0.23	
6,885.0	2.80	92.50	6,749.2	419.1	-1,073.5	1,152.3	0.46	0.34	
6,973.0	2.20	74.20	6,837.1	419.5	-1,069.7	1,148.9	1.13	-0.68	
7,062.0	2.20	85.50	6,926.0	420.1	-1,066.3	1,146.0	0.49	0.00	
7,152.0	2.20	116.40	7,015.9	419.5	-1,063.1	1,142.7	1.30	0.00	
7,241.0	1.50	104.90	7,104.9	418.4	-1,060.4	1,139.9	0.89	-0.79	
7,329.0	1.90	104.80	7,192.9	417.8	-1,057.9	1,137.3	0.45	0.45	
7,417.0	2.10	82.00	7,280.8	417.6	-1,054.9	1,134.4	0.93	0.23	
7,506.0	0.70	109.10	7,369.8	417.7	-1,052.8	1,132.4	1.70	-1.57	
7,594.0	0.50	122.90	7,457.8	417.3	-1,051.9	1,131.5	0.28	-0.23	
7,683.0	1.10	108.80	7,546.8	416.8	-1,050.8	1,130.3	0.70	0.67	
7,778.0	1.00	114.60	7,641.8	416.1	-1,049.2	1,128.5	0.15	-0.11	Last Cathedral Survey @ 7,778' MD
7,834.0	0.90	117.40	7,697.7	415.7	-1,048.3	1,127.6	0.20	-0.18	Projection to Bit @ 7,834'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Dechant 22-1 PBHL	0.00	0.00	7,712.0	418.2	-1,109.5	1,305,011.17	3,246,924.72	40.167267	-104.616451
- hit/miss target									
- Shape									
- survey misses target center by 62.8ft at 7834.0ft MD (7697.7 TVD, 415.7 N, -1048.3 E)									
- Circle (radius 50.0)									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
7,778.0	7,641.8	416.1	-1,049.2	Last Cathedral Survey @ 7,778' MD
7,834.0	7,697.7	415.7	-1,048.3	Projection to Bit @ 7,834'

Checked By: _____ Approved By: _____ Date: _____