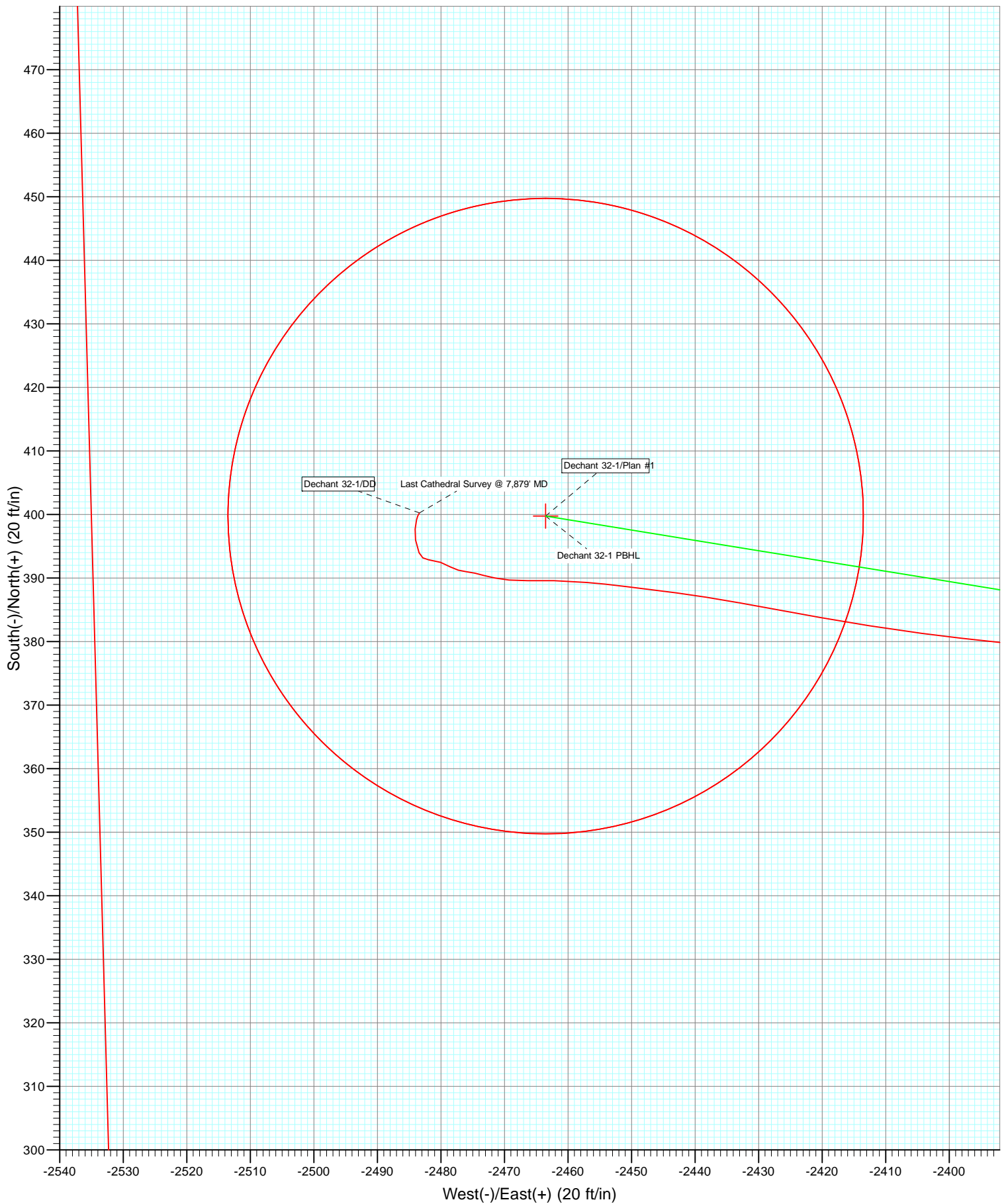


Azimuths to True North
Magnetic North: 8.69°

Magnetic Field
Strength: 52964.9snT
Dip Angle: 66.87°
Date: 1/8/2012
Model: IGRF2010

DD Dechant 32-1 125027/134655; LR KBE @ 4852.0ft (Xtreme 14) North American Datum 1983 Well Dechant 32-1, True North					
Type	Target	Azimuth	Origin Type	N/S	E/W From TVD
Target	Dechant 32-1 PBHL	279.22	Slot	0.0	0.0
Name	Dechant 32-1 PBHL	TVD	+N/-S	+E/-W	Latitude
		7262.0	399.7	-2463.5	40.167133
					-104.621297



Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Dechant 32-1
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 32-1	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 32-1					
Well Position	+N/-S	0.0 ft	Northing:	1,304,573.83 ft	Latitude:	40.166036
	+E/-W	0.0 ft	Easting:	3,248,038.35 ft	Longitude:	-104.612482
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	1/8/2012	8.69	66.87	52,965

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	279.22	

Survey Program	Date	1/14/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
121.0	7,879.0	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	0.80	356.70	121.0	0.8	0.0	0.2	0.66	0.66		
215.0	2.50	313.30	215.0	2.9	-1.6	2.0	2.12	1.81		
308.0	4.30	302.80	307.8	6.2	-6.0	6.9	2.04	1.94		
415.0	6.10	290.00	414.3	10.3	-14.7	16.2	1.99	1.68		
504.0	7.70	273.80	502.7	12.3	-25.1	26.7	2.81	1.80		
592.0	9.20	271.80	589.8	12.9	-38.0	39.6	1.74	1.70		
683.0	10.80	273.10	679.4	13.6	-53.8	55.3	1.78	1.76		
799.0	9.70	271.20	793.5	14.4	-74.4	75.8	0.99	-0.95		
874.0	12.10	274.50	867.2	15.2	-88.6	89.9	3.31	3.20		
962.0	13.80	272.30	952.9	16.3	-108.3	109.5	2.01	1.93		
1,048.0	16.00	274.50	1,036.0	17.6	-130.3	131.5	2.64	2.56		
1,138.0	18.00	277.40	1,122.1	20.4	-156.5	157.7	2.41	2.22		

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Dechant 32-1
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 32-1	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
1,226.0	20.70	278.30	1,205.1	24.4	-185.4	186.9	3.09	3.07	
1,316.0	22.40	278.60	1,288.8	29.3	-218.1	219.9	1.89	1.89	
1,404.0	25.00	281.10	1,369.4	35.4	-252.9	255.3	3.17	2.95	
1,493.0	27.20	281.40	1,449.3	43.0	-291.3	294.4	2.48	2.47	
1,581.0	28.60	281.10	1,527.1	51.0	-331.7	335.6	1.60	1.59	
1,668.0	30.70	281.50	1,602.7	59.5	-373.9	378.6	2.42	2.41	
1,757.0	32.10	281.10	1,678.6	68.5	-419.3	424.9	1.59	1.57	
1,844.0	30.90	279.90	1,752.8	76.8	-464.0	470.4	1.56	-1.38	
1,934.0	30.50	277.40	1,830.2	83.8	-509.5	516.3	1.49	-0.44	
2,022.0	32.40	276.10	1,905.3	89.1	-555.1	562.2	2.29	2.16	
2,109.0	32.10	275.30	1,978.9	93.7	-601.2	608.5	0.60	-0.34	
2,197.0	32.00	275.30	2,053.5	98.1	-647.7	655.1	0.11	-0.11	
2,287.0	32.10	277.30	2,129.7	103.3	-695.2	702.8	1.18	0.11	
2,375.0	31.00	279.00	2,204.7	109.8	-740.8	748.8	1.61	-1.25	
2,465.0	31.10	279.70	2,281.8	117.4	-786.6	795.2	0.42	0.11	
2,553.0	31.30	281.60	2,357.1	125.8	-831.4	840.8	1.14	0.23	
2,639.0	31.70	281.50	2,430.4	134.8	-875.4	885.7	0.47	0.47	
2,729.0	31.10	281.50	2,507.3	144.1	-921.4	932.6	0.67	-0.67	
2,818.0	31.90	281.00	2,583.1	153.2	-967.0	979.0	0.95	0.90	
2,907.0	29.50	280.20	2,659.7	161.6	-1,011.6	1,024.4	2.74	-2.70	
2,994.0	29.90	279.00	2,735.2	168.8	-1,054.1	1,067.5	0.82	0.46	
3,083.0	32.90	280.00	2,811.2	176.4	-1,099.8	1,113.9	3.42	3.37	
3,170.0	33.70	281.00	2,883.9	185.1	-1,146.8	1,161.7	1.12	0.92	
3,259.0	32.30	280.30	2,958.5	194.1	-1,194.4	1,210.1	1.63	-1.57	
3,347.0	32.40	279.90	3,032.9	202.4	-1,240.8	1,257.2	0.27	0.11	
3,435.0	32.40	278.20	3,107.2	209.8	-1,287.4	1,304.3	1.04	0.00	
3,523.0	30.60	277.00	3,182.2	215.9	-1,332.9	1,350.3	2.17	-2.05	
3,610.0	30.10	277.30	3,257.3	221.3	-1,376.6	1,394.2	0.60	-0.57	
3,700.0	29.40	276.80	3,335.4	226.8	-1,420.9	1,438.9	0.83	-0.78	
3,789.0	26.20	278.20	3,414.2	232.2	-1,462.0	1,480.3	3.67	-3.60	
3,876.0	25.80	277.40	3,492.3	237.4	-1,499.8	1,518.5	0.61	-0.46	
3,965.0	25.70	278.40	3,572.5	242.7	-1,538.1	1,557.1	0.50	-0.11	
4,054.0	27.90	281.10	3,652.0	249.5	-1,577.6	1,597.2	2.82	2.47	
4,142.0	28.70	279.30	3,729.4	256.9	-1,618.7	1,638.9	1.33	0.91	
4,230.0	29.40	279.30	3,806.4	263.8	-1,660.9	1,681.7	0.80	0.80	
4,320.0	30.60	279.00	3,884.3	271.0	-1,705.3	1,726.7	1.34	1.33	
4,410.0	31.50	278.50	3,961.4	278.0	-1,751.2	1,773.1	1.04	1.00	
4,499.0	30.80	277.90	4,037.6	284.6	-1,796.7	1,819.1	0.86	-0.79	
4,589.0	28.60	278.50	4,115.7	290.9	-1,840.9	1,863.7	2.47	-2.44	
4,677.0	27.30	277.90	4,193.5	296.8	-1,881.7	1,904.9	1.51	-1.48	
4,767.0	28.20	281.80	4,273.1	304.0	-1,923.0	1,946.8	2.25	1.00	
4,856.0	28.70	281.80	4,351.4	312.7	-1,964.5	1,989.2	0.56	0.56	
4,945.0	30.40	281.10	4,428.8	321.4	-2,007.5	2,033.0	1.95	1.91	
5,031.0	29.10	281.10	4,503.5	329.6	-2,049.4	2,075.7	1.51	-1.51	
5,119.0	31.00	282.10	4,579.6	338.5	-2,092.5	2,119.7	2.23	2.16	
5,207.0	29.20	281.60	4,655.8	347.6	-2,135.7	2,163.8	2.07	-2.05	
5,297.0	25.40	281.30	4,735.7	355.8	-2,176.2	2,205.0	4.22	-4.22	
5,386.0	24.90	280.00	4,816.3	362.7	-2,213.3	2,242.8	0.84	-0.56	
5,476.0	22.10	280.00	4,898.8	369.0	-2,248.7	2,278.7	3.11	-3.11	
5,564.0	20.10	274.00	4,980.9	372.9	-2,280.1	2,310.3	3.34	-2.27	
5,654.0	19.00	273.30	5,065.7	374.8	-2,310.1	2,340.3	1.25	-1.22	
5,742.0	18.10	273.40	5,149.2	376.5	-2,338.1	2,368.2	1.02	-1.02	
5,831.0	14.60	272.50	5,234.6	377.8	-2,363.1	2,393.1	3.94	-3.93	

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Dechant 32-1
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 32-1	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
5,919.0	13.90	275.00	5,319.8	379.2	-2,384.7	2,414.6	1.06	-0.80	
6,009.0	11.40	277.60	5,407.7	381.3	-2,404.3	2,434.3	2.85	-2.78	
6,098.0	9.60	280.30	5,495.2	383.8	-2,420.3	2,450.5	2.10	-2.02	
6,185.0	7.40	280.30	5,581.2	386.1	-2,432.9	2,463.4	2.53	-2.53	
6,274.0	5.70	277.30	5,669.6	387.7	-2,443.0	2,473.5	1.95	-1.91	
6,362.0	4.60	276.90	5,757.3	388.7	-2,450.8	2,481.4	1.25	-1.25	
6,450.0	3.60	275.00	5,845.0	389.3	-2,457.1	2,487.7	1.15	-1.14	
6,538.0	3.10	270.80	5,932.9	389.6	-2,462.2	2,492.8	0.63	-0.57	
6,628.0	2.20	269.10	6,022.8	389.6	-2,466.4	2,496.9	1.00	-1.00	
6,717.0	1.60	275.70	6,111.7	389.7	-2,469.3	2,499.8	0.72	-0.67	
6,805.0	1.30	281.20	6,199.7	390.0	-2,471.5	2,502.1	0.38	-0.34	
6,894.0	1.00	284.60	6,288.7	390.4	-2,473.2	2,503.8	0.35	-0.34	
6,982.0	0.90	284.20	6,376.7	390.8	-2,474.7	2,505.3	0.11	-0.11	
7,071.0	0.90	276.70	6,465.7	391.0	-2,476.0	2,506.7	0.13	0.00	
7,160.0	0.70	284.90	6,554.7	391.2	-2,477.2	2,507.9	0.26	-0.22	
7,247.0	1.10	297.10	6,641.7	391.8	-2,478.5	2,509.3	0.51	0.46	
7,336.0	1.10	292.90	6,730.6	392.5	-2,480.0	2,510.9	0.09	0.00	
7,424.0	1.40	273.00	6,818.6	392.9	-2,481.9	2,512.8	0.59	0.34	
7,513.0	1.50	337.50	6,907.6	394.0	-2,483.4	2,514.5	1.74	0.11	
7,602.0	1.20	352.70	6,996.6	396.0	-2,484.0	2,515.4	0.52	-0.34	
7,691.0	1.00	4.60	7,085.6	397.7	-2,484.1	2,515.7	0.34	-0.22	
7,779.0	0.90	13.10	7,173.5	399.1	-2,483.8	2,515.7	0.20	-0.11	
7,829.0	0.70	23.70	7,223.5	399.8	-2,483.6	2,515.6	0.50	-0.40	
7,867.6	0.54	31.19	7,262.1	400.2	-2,483.4	2,515.5	0.46	-0.41	Dechant 32-1 PBHL
7,879.0	0.50	34.30	7,273.5	400.3	-2,483.4	2,515.4	0.46	-0.38	Last Cathedral Survey @ 7,879' MD

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
Dechant 32-1 PBHL		0.00	0.00	7,262.0	399.7	-2,463.5	1,304,948.90	3,245,570.97	40.167133 -104.621297
- actual wellpath misses target center by 19.9ft at 7867.6ft MD (7262.1 TVD, 400.2 N, -2483.4 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
7,879.0	7,273.5	400.3	-2,483.4	Last Cathedral Survey @ 7,879' MD	

Checked By: _____	Approved By: _____	Date: _____
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