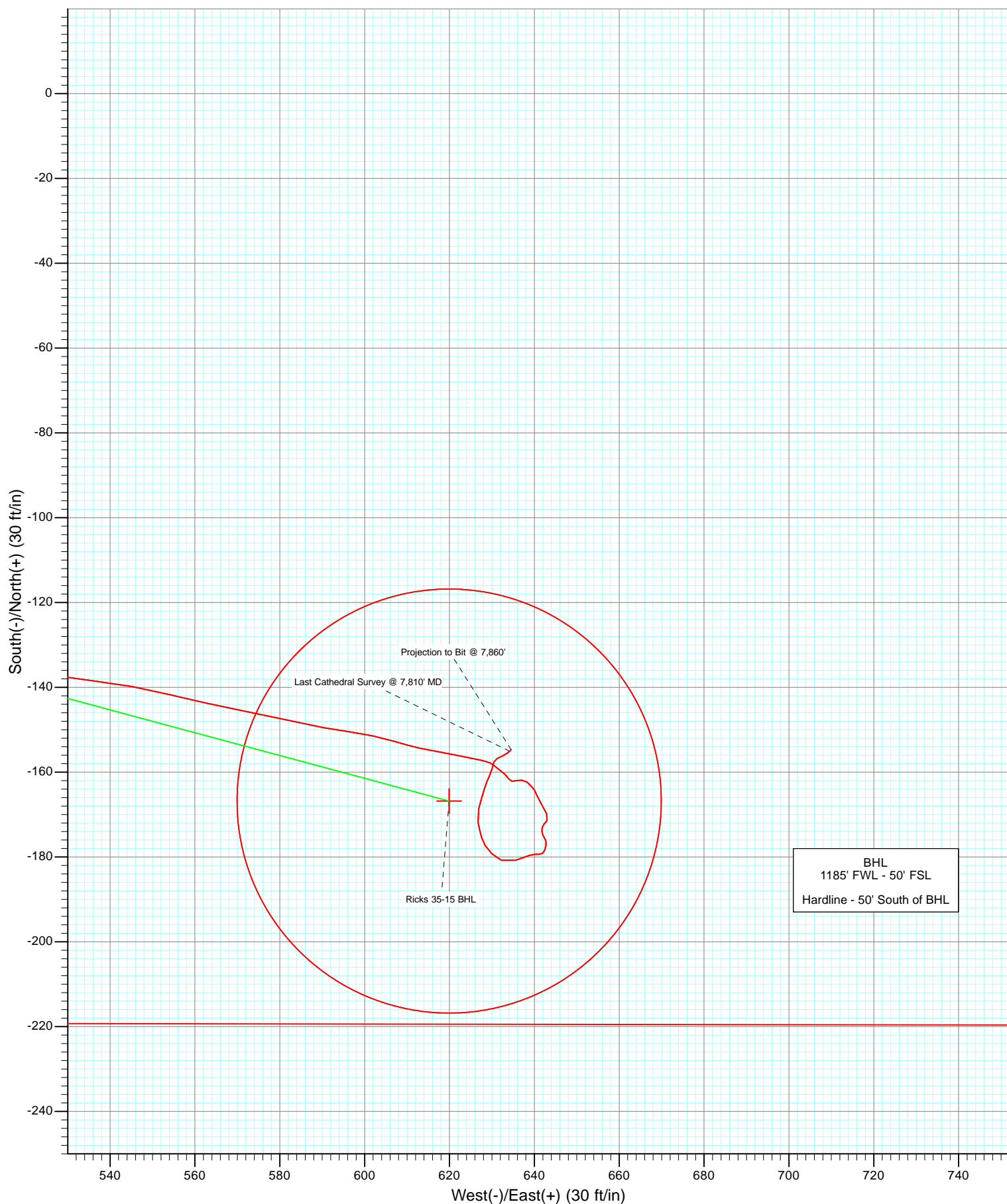


Azimuths to True North
Magnetic North: 8.76°

Magnetic Field
Strength: 52981.9snT
Dip Angle: 66.85°
Date: 8/22/2011
Model: IGRF2010

DD Ricks 35-15 115321/97659; BH KBE @ 4897.0ft (Xtreme 14) North American Datum 1983 Well Ricks 35-15, True North					
Type	Target	Azimuth	Origin Type	N/S	E/W
Target	Ricks 35-15 BHL	105.06	Slot	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude
Ricks 35-15 TGT		6380.0	-166.8	619.9	40.131531
Ricks 35-15 BHL		7765.0	-166.8	619.9	40.131531
					Longitude
					-104.655334
					-104.655334



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Ricks 35-15
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4897.0ft (Xtreme 14)
Site:	SWSW Sec15-2N-R65W (Ricks)	MD Reference:	KBE @ 4897.0ft (Xtreme 14)
Well:	Ricks 35-15	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		SWSW Sec15-2N-R65W (Ricks)			
Site Position:		Northing:	1,292,048.25 ft	Latitude:	40.131989
From:	Lat/Long	Easting:	3,235,497.23 ft	Longitude:	-104.657780
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.54 °

Well	Ricks 35-15					
Well Position	+N/-S	0.0 ft	Northing:	1,292,048.82 ft	Latitude:	40.131989
	+E/-W	0.0 ft	Easting:	3,235,561.26 ft	Longitude:	-104.657551
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,875.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/22/2011	8.76	66.85	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	105.06	

Survey Program	Date	9/7/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
141.0	7,860.0	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		
141.0	1.20	298.40	141.0	0.7	-1.3	-1.4	0.85	0.85		
234.0	0.40	104.70	234.0	1.1	-1.8	-2.1	1.71	-0.86		
327.0	1.70	109.20	327.0	0.5	-0.2	-0.4	1.40	1.40		
405.0	2.90	99.90	404.9	-0.2	2.8	2.8	1.61	1.54		
494.0	4.50	100.70	493.7	-1.2	8.5	8.5	1.80	1.80		
582.0	6.90	101.60	581.3	-2.9	17.0	17.2	2.73	2.73		
671.0	8.40	101.90	669.5	-5.3	28.6	29.0	1.69	1.69		
760.0	9.40	106.10	757.4	-8.7	42.0	42.8	1.34	1.12		
849.0	10.50	106.30	845.1	-13.0	56.7	58.2	1.24	1.24		
891.0	10.50	104.40	886.4	-15.0	64.1	65.8	0.82	0.00		
948.0	11.90	100.30	942.3	-17.3	74.9	76.9	2.82	2.46		
1,037.0	12.50	106.50	1,029.3	-21.7	93.2	95.6	1.62	0.67		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Ricks 35-15
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4897.0ft (Xtreme 14)
Site:	SWSW Sec15-2N-R65W (Ricks)	MD Reference:	KBE @ 4897.0ft (Xtreme 14)
Well:	Ricks 35-15	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
1,125.0	12.00	106.20	1,115.3	-27.0	111.1	114.3	0.57	-0.57	
1,213.0	11.60	105.70	1,201.4	-31.9	128.4	132.3	0.47	-0.45	
1,303.0	12.60	101.70	1,289.4	-36.4	146.7	151.2	1.45	1.11	
1,390.0	13.20	104.30	1,374.2	-40.7	165.7	170.6	0.96	0.69	
1,480.0	13.30	103.90	1,461.8	-45.8	185.7	191.2	0.15	0.11	
1,566.0	13.20	103.40	1,545.5	-50.4	204.8	210.9	0.18	-0.12	
1,656.0	14.20	107.90	1,633.0	-56.2	225.3	232.2	1.62	1.11	
1,746.0	13.70	106.50	1,720.3	-62.6	246.0	253.9	0.67	-0.56	
1,832.0	13.10	106.10	1,804.0	-68.2	265.2	273.8	0.71	-0.70	
1,921.0	12.00	103.90	1,890.8	-73.2	283.8	293.1	1.35	-1.24	
2,007.0	11.70	107.40	1,975.0	-78.0	300.8	310.8	0.91	-0.35	
2,096.0	9.90	110.90	2,062.4	-83.4	316.6	327.4	2.15	-2.02	
2,185.0	10.10	114.50	2,150.1	-89.4	330.9	342.7	0.74	0.22	
2,275.0	9.80	112.60	2,238.7	-95.6	345.1	358.1	0.49	-0.33	
2,363.0	9.40	104.30	2,325.5	-100.2	359.0	372.7	1.64	-0.45	
2,451.0	11.60	99.90	2,412.0	-103.5	374.7	388.7	2.66	2.50	
2,537.0	10.80	107.70	2,496.4	-107.5	390.9	405.4	1.99	-0.93	
2,627.0	11.90	105.10	2,584.6	-112.5	407.9	423.1	1.35	1.22	
2,714.0	14.20	100.80	2,669.4	-116.8	427.0	442.7	2.87	2.64	
2,804.0	14.80	103.20	2,756.5	-121.5	449.0	465.2	0.94	0.67	
2,892.0	14.90	104.80	2,841.6	-126.9	470.9	487.7	0.48	0.11	
2,980.0	14.90	99.40	2,926.6	-131.7	493.0	510.3	1.58	0.00	
3,070.0	14.40	99.70	3,013.7	-135.5	515.5	533.0	0.56	-0.56	
3,158.0	12.70	96.80	3,099.2	-138.5	535.9	553.4	2.08	-1.93	
3,246.0	11.60	103.80	3,185.3	-141.7	554.1	571.8	2.09	-1.25	
3,335.0	9.80	101.10	3,272.7	-145.3	570.2	588.4	2.10	-2.02	
3,423.0	8.90	102.70	3,359.6	-148.2	584.2	602.6	1.06	-1.02	
3,510.0	7.50	97.70	3,445.7	-150.5	596.4	615.0	1.80	-1.61	
3,599.0	6.60	107.00	3,534.0	-152.8	607.0	625.9	1.63	-1.01	
3,687.0	4.60	99.00	3,621.6	-154.8	615.3	634.4	2.43	-2.27	
3,777.0	3.70	103.20	3,711.3	-156.0	621.7	640.9	1.05	-1.00	
3,866.0	3.20	99.90	3,800.2	-157.1	627.0	646.3	0.60	-0.56	
3,955.0	1.60	130.80	3,889.1	-158.3	630.4	649.8	2.25	-1.80	
4,045.0	1.60	127.30	3,979.1	-159.9	632.3	652.1	0.11	0.00	
4,134.0	0.40	152.40	4,068.0	-160.9	633.4	653.5	1.40	-1.35	
4,224.0	0.80	135.90	4,158.0	-161.7	634.0	654.3	0.48	0.44	
4,312.0	0.40	93.50	4,246.0	-162.1	634.8	655.1	0.65	-0.45	
4,401.0	0.80	76.40	4,335.0	-162.0	635.7	655.9	0.49	0.45	
4,491.0	1.00	92.80	4,425.0	-161.9	637.1	657.3	0.36	0.22	
4,580.0	0.80	134.20	4,514.0	-162.4	638.3	658.6	0.75	-0.22	
4,668.0	0.90	135.10	4,602.0	-163.3	639.2	659.7	0.11	0.11	
4,756.0	0.80	145.70	4,690.0	-164.3	640.0	660.8	0.21	-0.11	
4,846.0	1.10	164.10	4,780.0	-165.6	640.6	661.7	0.47	0.33	
4,934.0	1.70	144.10	4,868.0	-167.5	641.6	663.1	0.87	0.68	
5,023.0	1.70	159.10	4,956.9	-169.8	642.9	664.9	0.50	0.00	
5,111.0	0.70	223.70	5,044.9	-171.4	643.0	665.4	1.75	-1.14	
5,201.0	0.70	216.10	5,134.9	-172.3	642.3	665.0	0.10	0.00	
5,291.0	0.50	199.00	5,224.9	-173.1	641.8	664.7	0.30	-0.22	
5,379.0	0.70	173.60	5,312.9	-174.0	641.8	664.9	0.37	0.23	
5,468.0	0.40	149.30	5,401.9	-174.8	642.0	665.3	0.42	-0.34	
5,557.0	0.60	154.70	5,490.9	-175.5	642.3	665.9	0.23	0.22	
5,644.0	0.50	155.40	5,577.9	-176.2	642.7	666.4	0.12	-0.11	
5,733.0	0.90	190.80	5,666.9	-177.3	642.7	666.7	0.64	0.45	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Ricks 35-15
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4897.0ft (Xtreme 14)
Site:	SWSW Sec15-2N-R65W (Ricks)	MD Reference:	KBE @ 4897.0ft (Xtreme 14)
Well:	Ricks 35-15	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
5,822.0	0.70	200.10	5,755.9	-178.5	642.4	666.7	0.27	-0.22	
5,910.0	0.50	239.20	5,843.9	-179.2	641.9	666.4	0.50	-0.23	
5,998.0	0.60	267.50	5,931.9	-179.4	641.1	665.7	0.32	0.11	
6,086.0	0.70	274.30	6,019.8	-179.4	640.1	664.7	0.14	0.11	
6,175.0	1.20	247.60	6,108.8	-179.7	638.7	663.4	0.74	0.56	
6,265.0	2.90	252.00	6,198.8	-180.7	635.7	660.8	1.90	1.89	
6,353.0	1.90	296.50	6,286.7	-180.8	632.2	657.5	2.32	-1.14	
6,441.0	1.70	312.60	6,374.7	-179.2	630.0	654.9	0.62	-0.23	
6,530.0	1.60	330.60	6,463.6	-177.3	628.4	652.9	0.59	-0.11	
6,618.0	1.20	343.20	6,551.6	-175.3	627.5	651.5	0.57	-0.45	
6,708.0	1.10	348.90	6,641.6	-173.6	627.1	650.6	0.17	-0.11	
6,796.0	1.20	348.50	6,729.6	-171.8	626.7	649.9	0.11	0.11	
6,930.0	1.60	13.20	6,863.5	-168.6	626.9	649.2	0.53	0.30	
7,018.0	1.60	17.10	6,951.5	-166.3	627.5	649.2	0.12	0.00	
7,106.0	1.30	15.70	7,039.5	-164.1	628.2	649.2	0.34	-0.34	
7,194.0	1.20	21.80	7,127.4	-162.3	628.8	649.3	0.19	-0.11	
7,282.0	1.20	24.80	7,215.4	-160.6	629.5	649.6	0.07	0.00	
7,372.0	1.10	14.50	7,305.4	-158.9	630.1	649.8	0.25	-0.11	
7,461.0	0.70	16.10	7,394.4	-157.6	630.5	649.8	0.45	-0.45	
7,551.0	0.80	67.00	7,484.4	-156.8	631.2	650.3	0.72	0.11	
7,637.0	0.90	61.10	7,570.4	-156.2	632.3	651.2	0.15	0.12	
7,724.0	0.70	60.00	7,657.4	-155.6	633.4	652.1	0.23	-0.23	
7,810.0	0.60	45.10	7,743.3	-155.1	634.2	652.7	0.23	-0.12	Last Cathedral Survey @ 7,810' MD Projection to Bit @ 7,860'
7,860.0	0.60	45.10	7,793.3	-154.7	634.5	652.9	0.00	0.00	

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Ricks 35-15 TGT	0.00	0.00	6,380.0	-166.8	619.9	1,291,887.92	3,236,182.72	40.131531	-104.655334
- hit/miss target									
- Shape									
- survey misses target center by 15.8ft at 6446.8ft MD (6380.5 TVD, -179.1 N, 629.8 E)									
- Point									
Ricks 35-15 BHL	0.00	0.00	7,765.0	-166.8	619.9	1,291,887.92	3,236,182.72	40.131531	-104.655334
- survey misses target center by 28.5ft at 7810.0ft MD (7743.3 TVD, -155.1 N, 634.2 E)									
- Circle (radius 50.0)									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,810.0	7,743.3	-155.1	634.2	Last Cathedral Survey @ 7,810' MD Projection to Bit @ 7,860'
7,860.0	7,793.3	-154.7	634.5	

Checked By: _____ Approved By: _____ Date: _____