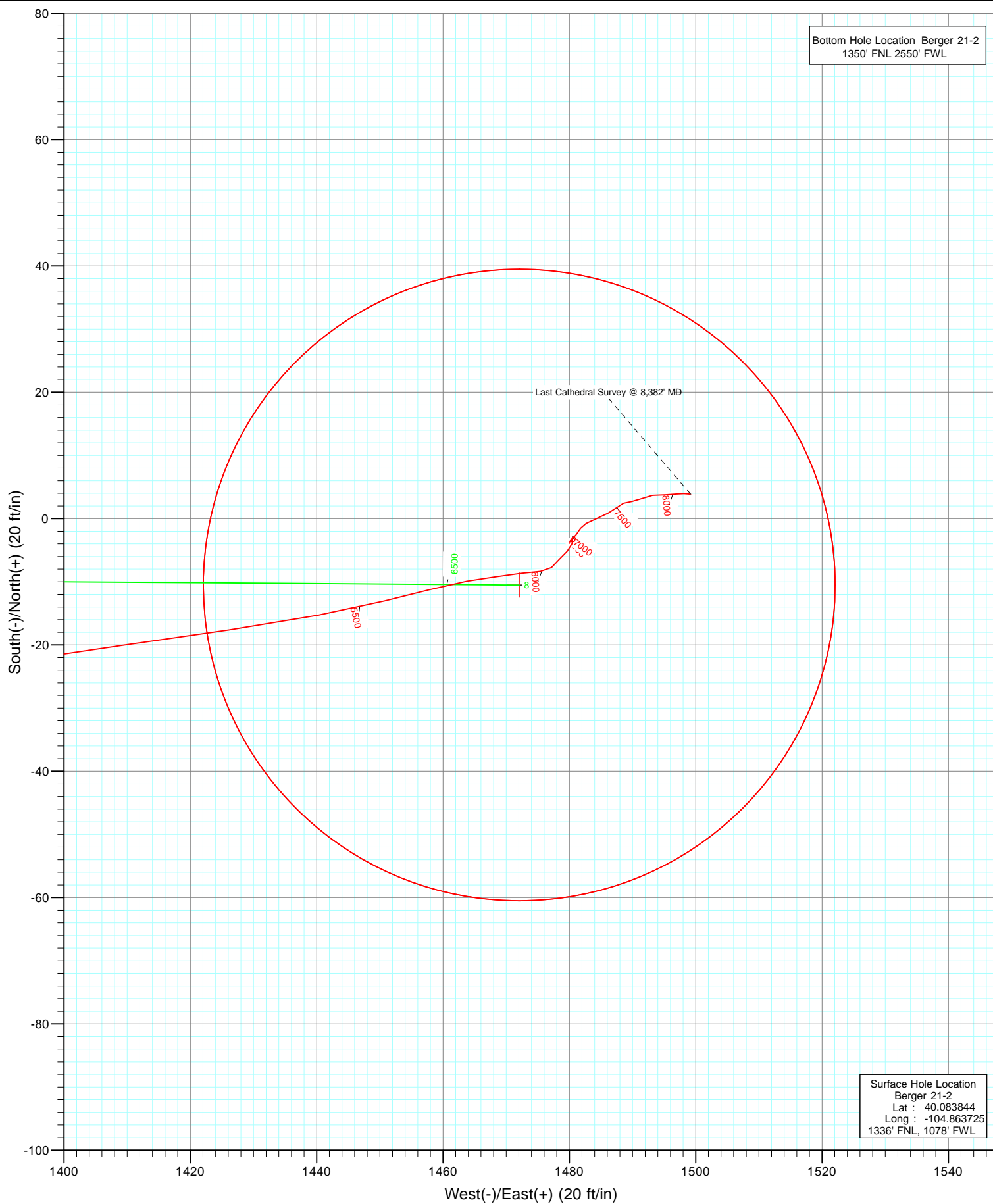


FINAL Berger 21-2 125378 172855; LR WELL @ 4976.0ft (Xtreme 11) North American Datum 1983 Well Berger 21-2, True North							
Type	Target	Azimuth	Origin	N/S	E/W	From	
User	No Target (Freehand)	92.04	Slot	0.0	0.0	TVD	
Name		+N/-S	+E/-W	Latitude	Longitude		
Berger 21-2 BHL		-10.5	1472.1	40.083815	-104.858464		



## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Berger 21-2
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 4976.0ft (Xtreme 11)
<b>Site:</b>	S2 T1N R67W (Berger 8 Pad)	<b>MD Reference:</b>	WELL @ 4976.0ft (Xtreme 11)
<b>Well:</b>	Berger 21-2	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 Multi Users DB

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

Site		S2 T1N R67W (Berger 8 Pad)			
Site Position:		Northing:	1,274,043.57 ft	Latitude:	40.083880
From:	Lat/Long	Easting:	3,178,047.58 ft	Longitude:	-104.863699
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	Berger 21-2					
Well Position	+N/-S	0.0 ft	Northing:	1,274,030.41 ft	Latitude:	40.083844
	+E/-W	0.0 ft	Easting:	3,178,040.40 ft	Longitude:	-104.863725
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,961.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/11/2012	8.76	66.74	52,849

<b>Design</b>	FINAL				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	92.04	

<b>Survey Program</b>	<b>Date</b>	6/15/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
90.0	8,382.0	Survey #1 (DD)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
90.0	1.80	224.10	90.0	-1.0	-1.0	-0.9	2.00	2.00		
178.0	1.10	189.60	178.0	-2.8	-2.1	-2.0	1.24	-0.80		
266.0	1.80	84.40	265.9	-3.5	-0.9	-0.7	2.66	0.80		
356.0	2.50	100.80	355.9	-3.8	2.5	2.6	1.03	0.78		
446.0	3.50	93.90	445.8	-4.3	7.2	7.3	1.18	1.11		
537.0	5.80	82.20	536.4	-3.9	14.5	14.6	2.72	2.53		
628.0	7.30	86.60	626.9	-2.9	24.8	24.9	1.74	1.65		
719.0	8.60	80.30	717.0	-1.4	37.3	37.3	1.72	1.43		
810.0	9.10	82.90	806.9	0.6	51.1	51.1	0.70	0.55		
890.0	10.00	86.60	885.8	1.8	64.3	64.2	1.36	1.12		
943.0	10.30	83.60	938.0	2.6	73.6	73.5	1.15	0.57		
1,034.0	12.10	94.50	1,027.2	2.8	91.2	91.1	3.05	1.98		

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Berger 21-2
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 4976.0ft (Xtreme 11)
<b>Site:</b>	S2 T1N R67W (Berger 8 Pad)	<b>MD Reference:</b>	WELL @ 4976.0ft (Xtreme 11)
<b>Well:</b>	Berger 21-2	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	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
1,124.0	11.90	103.90	1,115.3	-0.2	109.7	109.6	2.18	-0.22	
1,215.0	12.70	98.60	1,204.2	-4.0	128.7	128.7	1.52	0.88	
1,306.0	14.20	94.20	1,292.7	-6.3	149.7	149.8	1.99	1.65	
1,397.0	17.20	93.50	1,380.3	-7.9	174.2	174.4	3.30	3.30	
1,488.0	20.30	88.70	1,466.5	-8.4	203.5	203.6	3.80	3.41	
1,578.0	21.30	93.00	1,550.6	-8.9	235.4	235.6	2.03	1.11	
1,669.0	20.30	92.30	1,635.7	-10.4	267.7	267.9	1.13	-1.10	
1,760.0	19.50	91.30	1,721.2	-11.4	298.6	298.9	0.96	-0.88	
1,850.0	18.50	89.90	1,806.3	-11.7	327.9	328.1	1.22	-1.11	
1,941.0	17.40	84.40	1,892.9	-10.3	355.9	356.1	2.22	-1.21	
2,032.0	19.40	87.00	1,979.2	-8.2	384.6	384.6	2.38	2.20	
2,123.0	17.90	85.50	2,065.5	-6.3	413.6	413.6	1.73	-1.65	
2,214.0	18.90	86.30	2,151.8	-4.3	442.2	442.1	1.13	1.10	
2,304.0	16.20	87.20	2,237.6	-2.7	469.3	469.1	3.02	-3.00	
2,395.0	17.00	90.60	2,324.8	-2.2	495.3	495.1	1.38	0.88	
2,486.0	18.70	90.10	2,411.4	-2.4	523.2	523.0	1.88	1.87	
2,576.0	17.90	93.70	2,496.9	-3.3	551.4	551.2	1.54	-0.89	
2,667.0	19.20	93.60	2,583.2	-5.2	580.3	580.1	1.43	1.43	
2,758.0	19.40	96.30	2,669.0	-7.8	610.3	610.2	1.00	0.22	
2,849.0	17.40	95.40	2,755.4	-10.7	638.9	638.8	2.22	-2.20	
2,940.0	18.10	95.30	2,842.1	-13.3	666.5	666.5	0.77	0.77	
3,031.0	18.40	93.10	2,928.5	-15.4	694.9	695.0	0.83	0.33	
3,121.0	19.20	88.50	3,013.7	-15.7	723.9	724.0	1.87	0.89	
3,212.0	20.50	90.10	3,099.3	-15.4	754.8	754.8	1.55	1.43	
3,303.0	19.20	88.60	3,184.9	-15.0	785.7	785.7	1.53	-1.43	
3,394.0	20.00	88.00	3,270.6	-14.1	816.2	816.2	0.91	0.88	
3,484.0	18.40	88.80	3,355.6	-13.3	845.8	845.7	1.80	-1.78	
3,575.0	17.10	91.40	3,442.2	-13.3	873.5	873.4	1.67	-1.43	
3,666.0	17.00	86.00	3,529.3	-12.7	900.1	900.0	1.74	-0.11	
3,757.0	17.20	86.10	3,616.2	-10.9	926.8	926.6	0.22	0.22	
3,848.0	17.90	87.80	3,703.0	-9.4	954.2	954.0	0.95	0.77	
3,938.0	18.00	88.80	3,788.6	-8.6	982.0	981.6	0.36	0.11	
4,029.0	18.50	90.50	3,875.0	-8.4	1,010.5	1,010.1	0.80	0.55	
4,120.0	18.00	90.10	3,961.5	-8.6	1,038.9	1,038.6	0.57	-0.55	
4,211.0	19.00	92.30	4,047.8	-9.2	1,067.8	1,067.5	1.34	1.10	
4,302.0	18.50	94.50	4,133.9	-10.9	1,097.0	1,096.7	0.95	-0.55	
4,392.0	19.20	91.20	4,219.1	-12.4	1,126.0	1,125.8	1.42	0.78	
4,483.0	16.80	92.40	4,305.6	-13.2	1,154.1	1,153.9	2.67	-2.64	
4,574.0	14.20	90.80	4,393.3	-13.9	1,178.4	1,178.2	2.90	-2.86	
4,665.0	14.60	85.60	4,481.5	-13.2	1,201.0	1,200.8	1.49	0.44	
4,756.0	13.60	94.10	4,569.7	-13.1	1,223.2	1,222.8	2.52	-1.10	
4,846.0	15.10	95.90	4,656.9	-15.1	1,245.4	1,245.1	1.74	1.67	
4,937.0	16.60	93.70	4,744.5	-17.1	1,270.1	1,269.9	1.78	1.65	
5,028.0	16.30	97.40	4,831.7	-19.6	1,295.8	1,295.6	1.20	-0.33	
5,119.0	17.40	94.00	4,918.8	-22.2	1,322.0	1,322.0	1.62	1.21	
5,209.0	16.60	90.40	5,004.9	-23.2	1,348.3	1,348.3	1.47	-0.89	
5,300.0	14.00	91.20	5,092.7	-23.5	1,372.3	1,372.3	2.87	-2.86	
5,391.0	11.60	82.40	5,181.4	-22.6	1,392.4	1,392.3	3.39	-2.64	
5,482.0	11.00	80.70	5,270.7	-19.9	1,410.0	1,409.8	0.75	-0.66	
5,572.0	9.90	82.90	5,359.2	-17.6	1,426.2	1,425.9	1.30	-1.22	
5,663.0	8.30	78.00	5,449.0	-15.3	1,440.4	1,440.0	1.95	-1.76	
5,754.0	5.10	77.40	5,539.4	-13.0	1,450.7	1,450.3	3.52	-3.52	
5,845.0	4.10	74.60	5,630.1	-11.3	1,457.8	1,457.3	1.13	-1.10	

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Berger 21-2
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 4976.0ft (Xtreme 11)
<b>Site:</b>	S2 T1N R67W (Berger 8 Pad)	<b>MD Reference:</b>	WELL @ 4976.0ft (Xtreme 11)
<b>Well:</b>	Berger 21-2	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	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
5,936.0	3.60	80.10	5,720.9	-9.9	1,463.8	1,463.2	0.68	-0.55	
6,027.0	2.40	82.60	5,811.8	-9.2	1,468.5	1,467.9	1.33	-1.32	
6,117.0	2.50	82.10	5,901.7	-8.7	1,472.3	1,471.7	0.11	0.11	
6,208.0	1.50	87.80	5,992.6	-8.4	1,475.4	1,474.8	1.12	-1.10	
6,299.0	1.00	44.90	6,083.6	-7.7	1,477.2	1,476.5	1.13	-0.55	
6,390.0	1.10	41.00	6,174.6	-6.5	1,478.3	1,477.6	0.14	0.11	
6,480.0	1.30	48.60	6,264.6	-5.2	1,479.7	1,478.9	0.28	0.22	
6,571.0	0.80	6.50	6,355.6	-3.9	1,480.5	1,479.7	0.97	-0.55	
6,662.0	0.30	331.10	6,446.6	-3.0	1,480.5	1,479.6	0.64	-0.55	
6,752.0	0.40	81.40	6,536.6	-2.8	1,480.7	1,479.8	0.64	0.11	
6,843.0	0.50	172.70	6,627.6	-3.1	1,481.0	1,480.2	0.71	0.11	
6,934.0	0.40	254.60	6,718.5	-3.6	1,480.8	1,480.0	0.65	-0.11	
7,025.0	0.40	273.70	6,809.5	-3.7	1,480.1	1,479.3	0.15	0.00	
7,115.0	0.40	70.10	6,899.5	-3.5	1,480.1	1,479.3	0.87	0.00	
7,252.0	0.80	32.20	7,036.5	-2.6	1,481.1	1,480.2	0.40	0.29	
7,342.0	0.80	36.40	7,126.5	-1.5	1,481.8	1,480.9	0.07	0.00	
7,433.0	0.70	63.30	7,217.5	-0.8	1,482.7	1,481.8	0.40	-0.11	
7,524.0	1.40	65.10	7,308.5	-0.1	1,484.2	1,483.2	0.77	0.77	
7,615.0	1.30	64.40	7,399.5	0.9	1,486.1	1,485.1	0.11	-0.11	
7,705.0	0.70	44.40	7,489.5	1.7	1,487.4	1,486.4	0.76	-0.67	
7,796.0	1.10	66.30	7,580.5	2.4	1,488.6	1,487.6	0.57	0.44	
7,887.0	0.60	98.80	7,671.4	2.7	1,489.9	1,488.8	0.74	-0.55	
7,978.0	1.30	62.50	7,762.4	3.1	1,491.3	1,490.2	0.98	0.77	
8,069.0	1.30	84.60	7,853.4	3.7	1,493.2	1,492.1	0.55	0.00	
8,159.0	1.30	90.50	7,943.4	3.8	1,495.2	1,494.2	0.15	0.00	
8,250.0	0.80	79.00	8,034.4	3.9	1,496.9	1,495.8	0.59	-0.55	
8,327.0	1.10	94.10	8,111.4	3.9	1,498.2	1,497.1	0.50	0.39	
8,361.2	1.10	94.10	8,145.5	3.9	1,498.8	1,497.7	0.00	0.00	Berger 21-2 BHL
8,382.0	1.10	94.10	8,166.3	3.9	1,499.2	1,498.1	0.00	0.00	Last Cathedral Survey @ 8,382' 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									
Berger 21-2 BHL	0.00	0.41	8,146.0	-10.5	1,472.1	1,274,030.47	3,179,512.52	40.083815	-104.858464
- actual wellpath misses target center by 30.4ft at 8361.2ft MD (8145.5 TVD, 3.9 N, 1498.8 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
8,382.0	8,166.3	3.9	1,499.2	Last Cathedral Survey @ 8,382' MD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_