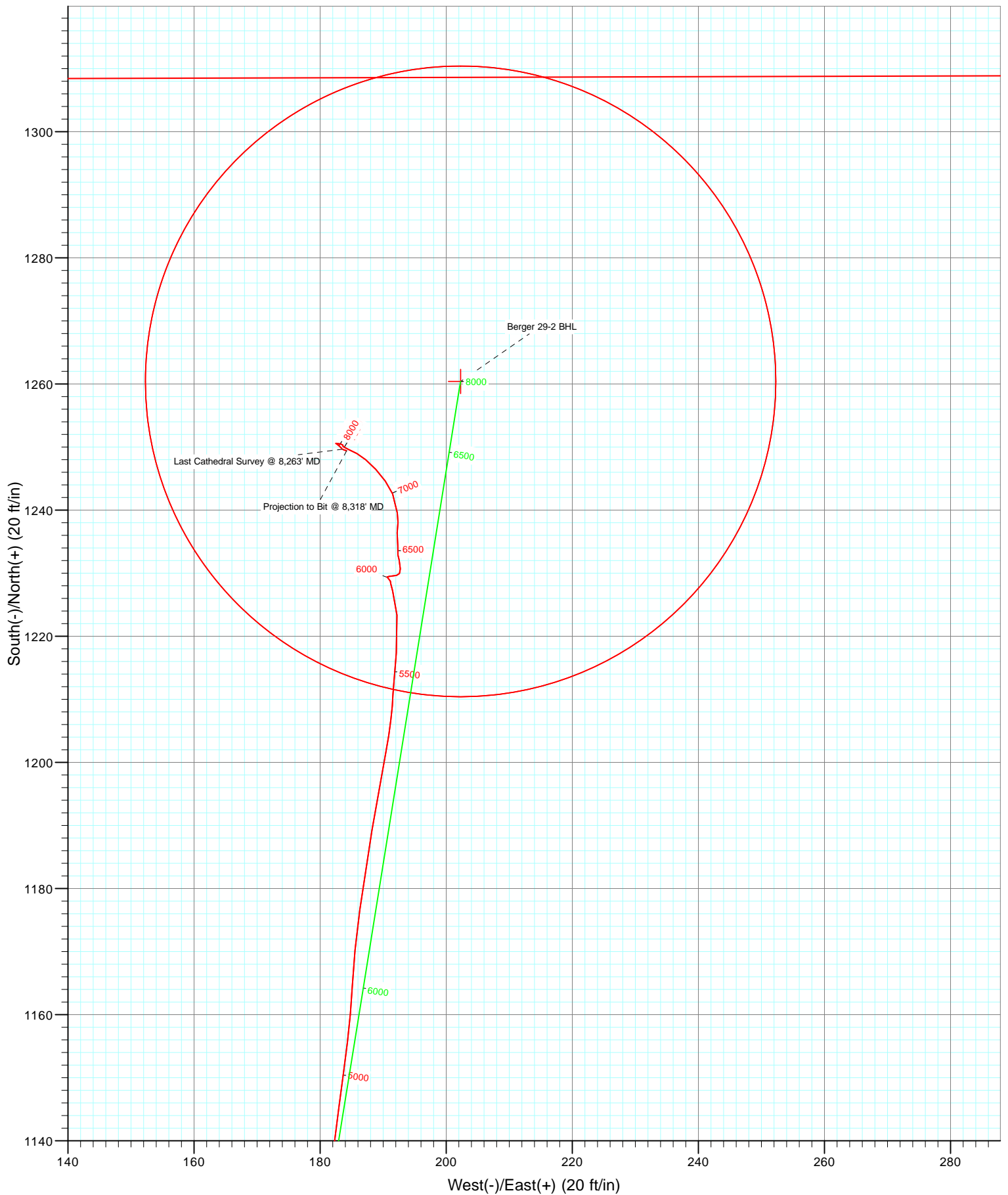


Type		Target		Azimuth		Origin Type		N/S		E/W		From TVD	
User		No Target (Freehand)		7.96		Slot		0.0		0.0		0.0	
Name		TVD		+N/-S		+E/-W		Latitude		Longitude			
Berger 29-2 BHL		8145.0		1260.4		202.3		40.087376		-104.862949			



## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Berger 29-2
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	15' KB @ 4975.0ft (Xtreme 11)
<b>Site:</b>	S2 T1N R67W (Berger 8 Pad)	<b>MD Reference:</b>	15' KB @ 4975.0ft (Xtreme 11)
<b>Well:</b>	Berger 29-2	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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 29-2					
Well Position	+N/-S	0.0 ft	Northing:	1,274,056.74 ft	Latitude:	40.083916
	+E/-W	0.0 ft	Easting:	3,178,055.04 ft	Longitude:	-104.863672
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,960.0 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	6/19/2012	8.75	66.74	52,847

<b>Design</b>	DD				
<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	7.96	

<b>Survey Program</b>	<b>Date</b>	6/22/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
76.0	8,318.0	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		
76.0	1.10	205.80	76.0	-0.7	-0.3	-0.7	1.45	1.45		
163.0	0.60	331.70	163.0	-1.0	-0.9	-1.1	1.76	-0.57		
252.0	1.60	348.80	252.0	0.6	-1.4	0.4	1.17	1.12		
339.0	3.80	25.20	338.9	4.4	-0.4	4.3	3.09	2.53		
416.0	5.60	12.00	415.6	10.4	1.5	10.5	2.71	2.34		
506.0	7.30	11.10	505.0	20.3	3.5	20.6	1.89	1.89		
597.0	10.80	11.60	594.9	34.3	6.3	34.9	3.85	3.85		
688.0	11.80	5.10	684.1	52.0	8.9	52.7	1.78	1.10		
779.0	14.00	7.80	772.8	72.1	11.2	73.0	2.51	2.42		
890.0	13.20	3.10	880.7	98.1	13.7	99.1	1.23	-0.72		
974.0	13.40	3.20	962.5	117.4	14.8	118.3	0.24	0.24		
1,064.0	14.50	2.50	1,049.8	139.1	15.8	139.9	1.24	1.22		

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Berger 29-2
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	15' KB @ 4975.0ft (Xtreme 11)
<b>Site:</b>	S2 T1N R67W (Berger 8 Pad)	<b>MD Reference:</b>	15' KB @ 4975.0ft (Xtreme 11)
<b>Well:</b>	Berger 29-2	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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
1,155.0	17.40	4.00	1,137.3	164.0	17.3	164.8	3.22	3.19	
1,246.0	18.50	6.90	1,223.9	191.9	20.0	192.8	1.56	1.21	
1,337.0	17.80	12.40	1,310.4	219.8	24.7	221.2	2.03	-0.77	
1,427.0	17.60	11.50	1,396.1	246.6	30.4	248.4	0.38	-0.22	
1,518.0	17.70	18.10	1,482.8	273.3	37.4	275.8	2.20	0.11	
1,609.0	17.40	16.60	1,569.6	299.4	45.6	302.9	0.60	-0.33	
1,699.0	16.60	11.30	1,655.7	324.9	52.0	329.0	1.94	-0.89	
1,790.0	15.50	12.40	1,743.1	349.6	57.1	354.1	1.25	-1.21	
1,881.0	15.00	12.30	1,830.9	373.0	62.2	378.0	0.55	-0.55	
1,972.0	14.90	8.20	1,918.8	396.0	66.4	401.4	1.17	-0.11	
2,063.0	13.70	7.80	2,007.0	418.3	69.5	423.9	1.32	-1.32	
2,153.0	15.00	5.30	2,094.2	440.5	72.1	446.2	1.60	1.44	
2,244.0	13.40	3.80	2,182.4	462.7	73.9	468.5	1.80	-1.76	
2,335.0	14.80	6.40	2,270.7	484.8	75.8	490.6	1.69	1.54	
2,426.0	13.20	2.90	2,359.0	506.7	77.7	512.6	1.99	-1.76	
2,517.0	15.00	13.40	2,447.2	528.5	80.9	534.7	3.43	1.98	
2,607.0	13.10	12.10	2,534.5	549.8	85.8	556.4	2.14	-2.11	
2,698.0	15.30	10.20	2,622.7	571.7	90.1	578.7	2.47	2.42	
2,789.0	12.90	9.40	2,711.0	593.6	93.8	600.9	2.65	-2.64	
2,880.0	14.20	12.40	2,799.5	614.5	97.9	622.1	1.62	1.43	
2,970.0	15.80	11.60	2,886.4	637.3	102.7	645.4	1.79	1.78	
3,061.0	14.80	11.90	2,974.2	660.8	107.6	669.3	1.10	-1.10	
3,152.0	12.80	10.50	3,062.5	682.1	111.8	691.0	2.23	-2.20	
3,242.0	15.20	9.00	3,149.9	703.6	115.5	712.8	2.70	2.67	
3,333.0	12.60	6.40	3,238.2	725.2	118.5	734.6	2.94	-2.86	
3,424.0	14.20	8.30	3,326.7	746.1	121.2	755.7	1.82	1.76	
3,515.0	15.20	11.70	3,414.7	768.8	125.2	778.8	1.45	1.10	
3,605.0	14.70	12.20	3,501.7	791.6	130.0	801.9	0.57	-0.56	
3,696.0	14.90	7.90	3,589.7	814.4	134.1	825.2	1.23	0.22	
3,787.0	16.10	6.40	3,677.4	838.6	137.1	849.5	1.39	1.32	
3,878.0	13.30	6.00	3,765.4	861.5	139.6	872.5	3.08	-3.08	
3,969.0	15.10	12.80	3,853.6	883.5	143.3	894.8	2.69	1.98	
4,059.0	16.00	9.00	3,940.3	907.2	147.9	918.9	1.51	1.00	
4,150.0	12.70	7.40	4,028.5	929.5	151.1	941.5	3.65	-3.63	
4,241.0	13.00	6.90	4,117.2	949.6	153.6	961.7	0.35	0.33	
4,332.0	15.00	4.00	4,205.5	971.5	155.7	983.7	2.33	2.20	
4,423.0	15.40	7.80	4,293.3	995.2	158.1	1,007.5	1.18	0.44	
4,514.0	13.70	7.90	4,381.4	1,017.8	161.3	1,030.4	1.87	-1.87	
4,604.0	11.50	6.20	4,469.2	1,037.3	163.7	1,050.0	2.48	-2.44	
4,695.0	12.40	18.50	4,558.2	1,055.6	167.8	1,068.7	2.96	0.99	
4,786.0	12.00	10.20	4,647.2	1,074.2	172.6	1,087.7	1.98	-0.44	
4,877.0	12.10	8.40	4,736.2	1,092.9	175.6	1,106.7	0.43	0.11	
4,967.0	13.90	9.10	4,823.9	1,112.9	178.7	1,127.0	2.01	2.00	
5,058.0	12.30	6.50	4,912.5	1,133.4	181.5	1,147.6	1.87	-1.76	
5,149.0	9.90	7.90	5,001.8	1,150.7	183.7	1,165.1	2.65	-2.64	
5,240.0	7.30	3.10	5,091.8	1,164.3	185.1	1,178.7	2.96	-2.86	
5,331.0	8.30	7.60	5,181.9	1,176.6	186.3	1,191.0	1.29	1.10	
5,421.0	8.10	9.90	5,271.0	1,189.2	188.2	1,203.8	0.43	-0.22	
5,512.0	7.60	10.30	5,361.2	1,201.5	190.4	1,216.3	0.55	-0.55	
5,603.0	4.30	1.50	5,451.7	1,210.8	191.6	1,225.7	3.75	-3.63	
5,694.0	4.00	7.70	5,542.4	1,217.4	192.1	1,232.2	0.59	-0.33	
5,785.0	3.60	353.50	5,633.2	1,223.3	192.2	1,238.2	1.12	-0.44	
5,875.0	1.40	340.90	5,723.1	1,227.2	191.5	1,241.9	2.50	-2.44	

## Survey Report

<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well Berger 29-2
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	15' KB @ 4975.0ft (Xtreme 11)
<b>Site:</b>	S2 T1N R67W (Berger 8 Pad)	<b>MD Reference:</b>	15' KB @ 4975.0ft (Xtreme 11)
<b>Well:</b>	Berger 29-2	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<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
5,966.0	0.10	71.40	5,814.1	1,228.3	191.2	1,242.9	1.54	-1.43	
6,057.0	0.60	341.90	5,905.1	1,228.7	191.1	1,243.4	0.67	0.55	
6,148.0	0.40	290.70	5,996.1	1,229.3	190.7	1,243.9	0.51	-0.22	
6,238.0	0.70	83.30	6,086.1	1,229.5	191.0	1,244.1	1.19	0.33	
6,329.0	0.80	81.90	6,177.1	1,229.6	192.1	1,244.4	0.11	0.11	
6,420.0	1.20	357.70	6,268.1	1,230.7	192.7	1,245.5	1.51	0.44	
6,511.0	0.60	342.60	6,359.1	1,232.1	192.5	1,246.9	0.70	-0.66	
6,601.0	0.50	350.80	6,449.1	1,232.9	192.3	1,247.7	0.14	-0.11	
6,692.0	1.30	2.30	6,540.1	1,234.4	192.3	1,249.1	0.90	0.88	
6,783.0	1.30	352.70	6,631.0	1,236.4	192.2	1,251.1	0.24	0.00	
6,873.0	0.90	23.00	6,721.0	1,238.1	192.4	1,252.8	0.77	-0.44	
6,964.0	1.20	334.20	6,812.0	1,239.6	192.2	1,254.3	1.00	0.33	
7,055.0	0.70	6.60	6,903.0	1,241.0	191.9	1,255.6	0.79	-0.55	
7,146.0	1.40	336.40	6,994.0	1,242.6	191.5	1,257.1	0.96	0.77	
7,236.0	1.60	324.80	7,084.0	1,244.6	190.3	1,259.0	0.40	0.22	
7,327.0	1.40	316.60	7,174.9	1,246.4	188.9	1,260.6	0.32	-0.22	
7,418.0	1.40	311.90	7,265.9	1,248.0	187.3	1,261.9	0.13	0.00	
7,509.0	0.80	291.90	7,356.9	1,249.0	185.8	1,262.7	0.77	-0.66	
7,599.0	1.10	298.90	7,446.9	1,249.6	184.5	1,263.1	0.36	0.33	
7,690.0	0.10	284.40	7,537.9	1,250.1	183.7	1,263.5	1.10	-1.10	
7,781.0	0.30	5.90	7,628.9	1,250.3	183.6	1,263.7	0.33	0.22	
7,872.0	0.50	259.60	7,719.9	1,250.5	183.2	1,263.8	0.72	0.22	
7,962.0	0.40	301.90	7,809.9	1,250.6	182.6	1,263.8	0.38	-0.11	
8,053.0	0.30	136.30	7,900.9	1,250.6	182.5	1,263.8	0.76	-0.11	
8,144.0	0.40	117.40	7,991.9	1,250.3	182.9	1,263.5	0.17	0.11	
8,235.0	0.40	150.10	8,082.9	1,249.8	183.4	1,263.2	0.25	0.00	
8,263.0	0.60	132.41	8,110.8	1,249.7	183.5	1,263.0	0.89	0.71	Last Cathedral Survey @ 8,263' MD
8,297.4	0.81	106.72	8,145.2	1,249.5	183.9	1,262.9	1.10	0.62	Berger 29-2 BHL
8,318.0	0.99	97.64	8,165.8	1,249.4	184.2	1,262.9	1.10	0.85	Projection to Bit @ 8,318' 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 29-2 BHL	0.00	0.41	8,145.0	1,260.4	202.3	1,275,318.58	3,178,248.29	40.087376	-104.862949
- survey misses target center by 21.4ft at 8297.3ft MD (8145.2 TVD, 1249.5 N, 183.9 E)									
- Circle (radius 50.0)									

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
8,263.0	8,110.8	1,249.7	183.5	Last Cathedral Survey @ 8,263' MD	
8,318.0	8,165.8	1,249.4	184.2	Projection to Bit @ 8,318' MD	

Checked By: _____	Approved By: _____	Date: _____
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