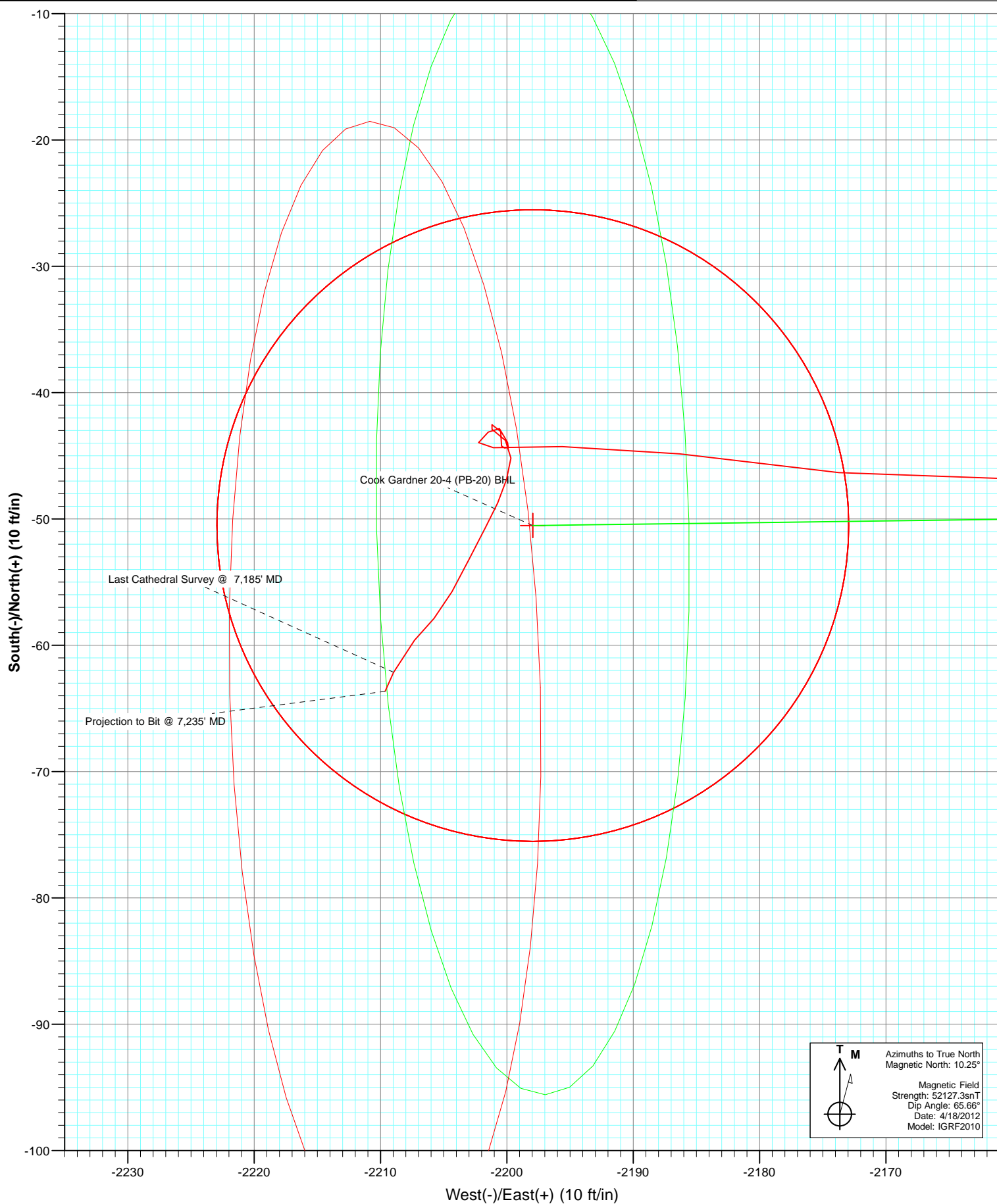


Azimuths to True North  
 Magnetic North: 10.25°

Magnetic Field  
 Strength: 52127.3snT  
 Dip Angle: 65.66°  
 Date: 4/18/2012  
 Model: IGRF2010



## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Cook Gardner 20-4 (PB-20)
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	KBE @ 5665.0ft (Original Well Elev)
<b>Site:</b>	PB-20 Pad	<b>MD Reference:</b>	KBE @ 5665.0ft (Original Well Elev)
<b>Well:</b>	Cook Gardner 20-4 (PB-20)	<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>	S. Piceance (Parachute), Garfield County, CO		
<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 Central Zone		

Site		PB-20 Pad			
Site Position:		Northing:	1,590,537.58 ft	Latitude:	39.427690
From:	Lat/Long	Easting:	2,288,393.21 ft	Longitude:	-108.019530
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.59 °

Well	Cook Gardner 20-4 (PB-20)					
Well Position	+N/-S	0.0 ft	Northing:	1,590,509.65 ft	Latitude:	39.427609
	+E/-W	0.0 ft	Easting:	2,288,336.20 ft	Longitude:	-108.019729
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,643.0 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	4/18/2012	10.25	65.66	52,127

<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	268.68	

<b>Survey Program</b>	<b>Date</b>	4/24/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
82.0	7,235.0	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		
82.0	0.20	76.10	82.0	0.0	0.1	-0.1	0.24	0.24		
113.0	0.20	65.90	113.0	0.1	0.2	-0.2	0.11	0.00		
143.0	0.20	15.80	143.0	0.1	0.3	-0.3	0.56	0.00		
173.0	0.30	246.90	173.0	0.2	0.2	-0.2	1.51	0.33		
204.0	0.20	318.90	204.0	0.2	0.1	-0.1	0.98	-0.32		
235.0	0.70	285.80	235.0	0.3	-0.1	0.1	1.75	1.61		
266.0	1.00	267.30	266.0	0.3	-0.5	0.5	1.30	0.97		
297.0	2.10	276.60	297.0	0.4	-1.4	1.4	3.63	3.55		
328.0	3.00	268.40	328.0	0.4	-2.7	2.7	3.13	2.90		
359.0	4.00	271.40	358.9	0.4	-4.6	4.6	3.28	3.23		
389.0	5.00	268.20	388.8	0.4	-7.0	7.0	3.44	3.33		
420.0	5.90	260.50	419.7	0.1	-9.9	9.9	3.73	2.90		

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Cook Gardner 20-4 (PB-20)
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	KBE @ 5665.0ft (Original Well Elev)
<b>Site:</b>	PB-20 Pad	<b>MD Reference:</b>	KBE @ 5665.0ft (Original Well Elev)
<b>Well:</b>	Cook Gardner 20-4 (PB-20)	<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
451.0	7.20	259.40	450.5	-0.5	-13.4	13.4	4.21	4.19	
542.0	10.60	262.00	540.3	-2.8	-27.3	27.3	3.76	3.74	
635.0	13.40	263.60	631.3	-5.1	-46.5	46.6	3.03	3.01	
727.0	15.90	265.70	720.3	-7.3	-69.6	69.8	2.78	2.72	
820.0	18.70	266.80	809.1	-9.1	-97.2	97.4	3.03	3.01	
911.0	20.70	265.90	894.8	-11.0	-127.8	128.1	2.22	2.20	
1,004.0	21.50	265.10	981.5	-13.7	-161.2	161.5	0.91	0.86	
1,060.0	22.10	265.50	1,033.5	-15.4	-181.9	182.2	1.10	1.07	
1,168.0	21.50	263.30	1,133.8	-19.3	-221.9	222.2	0.94	-0.56	
1,263.0	22.40	266.20	1,221.9	-22.5	-257.2	257.7	1.48	0.95	
1,358.0	24.90	267.00	1,308.9	-24.7	-295.2	295.7	2.65	2.63	
1,454.0	26.90	268.40	1,395.3	-26.4	-337.1	337.7	2.18	2.08	
1,550.0	30.80	269.00	1,479.4	-27.4	-383.4	384.0	4.07	4.06	
1,645.0	32.70	269.60	1,560.1	-28.1	-433.4	434.0	2.03	2.00	
1,740.0	34.90	272.10	1,639.1	-27.2	-486.3	486.8	2.74	2.32	
1,836.0	37.50	271.50	1,716.5	-25.5	-542.9	543.4	2.73	2.71	
1,931.0	38.40	270.80	1,791.5	-24.3	-601.3	601.7	1.05	0.95	
2,027.0	38.80	270.70	1,866.5	-23.5	-661.2	661.6	0.42	0.42	
2,123.0	38.00	269.40	1,941.7	-23.5	-720.8	721.2	1.18	-0.83	
2,218.0	37.90	268.20	2,016.6	-24.7	-779.3	779.6	0.78	-0.11	
2,313.0	37.80	268.40	2,091.6	-26.4	-837.5	837.9	0.17	-0.11	
2,408.0	37.40	268.50	2,166.9	-28.0	-895.5	895.9	0.43	-0.42	
2,503.0	37.30	269.00	2,242.4	-29.2	-953.1	953.5	0.34	-0.11	
2,599.0	39.20	270.80	2,317.8	-29.3	-1,012.5	1,012.9	2.29	1.98	
2,694.0	38.50	270.50	2,391.8	-28.6	-1,072.1	1,072.5	0.76	-0.74	
2,790.0	38.50	269.40	2,466.9	-28.7	-1,131.9	1,132.2	0.71	0.00	
2,884.0	37.40	268.30	2,541.1	-29.8	-1,189.6	1,190.0	1.37	-1.17	
2,980.0	37.40	269.70	2,617.3	-30.9	-1,247.9	1,248.3	0.89	0.00	
3,076.0	38.30	269.40	2,693.1	-31.3	-1,306.8	1,307.2	0.96	0.94	
3,171.0	37.20	268.40	2,768.2	-32.4	-1,365.0	1,365.4	1.33	-1.16	
3,266.0	38.40	267.80	2,843.3	-34.4	-1,423.2	1,423.6	1.32	1.26	
3,362.0	38.10	267.90	2,918.7	-36.6	-1,482.6	1,483.0	0.32	-0.31	
3,457.0	36.50	266.70	2,994.3	-39.3	-1,540.1	1,540.6	1.85	-1.68	
3,552.0	37.40	267.10	3,070.2	-42.4	-1,597.1	1,597.6	0.98	0.95	
3,647.0	37.60	269.10	3,145.6	-44.3	-1,654.9	1,655.5	1.30	0.21	
3,742.0	37.40	268.60	3,220.9	-45.5	-1,712.7	1,713.3	0.38	-0.21	
3,838.0	35.60	269.40	3,298.1	-46.5	-1,769.8	1,770.4	1.94	-1.87	
3,933.0	32.30	269.60	3,376.9	-46.9	-1,822.8	1,823.4	3.48	-3.47	
4,029.0	29.20	268.80	3,459.4	-47.6	-1,871.9	1,872.5	3.26	-3.23	
4,124.0	27.80	269.70	3,542.9	-48.2	-1,917.2	1,917.8	1.54	-1.47	
4,220.0	25.90	271.60	3,628.5	-47.7	-1,960.6	1,961.2	2.17	-1.98	
4,315.0	24.40	270.60	3,714.5	-47.0	-2,001.0	2,001.5	1.64	-1.58	
4,410.0	20.00	270.30	3,802.4	-46.7	-2,036.8	2,037.4	4.63	-4.63	
4,506.0	17.60	271.10	3,893.3	-46.3	-2,067.8	2,068.3	2.51	-2.50	
4,601.0	15.80	268.10	3,984.3	-46.4	-2,095.1	2,095.6	2.10	-1.89	
4,696.0	13.90	270.60	4,076.1	-46.8	-2,119.4	2,119.9	2.11	-2.00	
4,792.0	11.80	269.80	4,169.7	-46.7	-2,140.7	2,141.3	2.20	-2.19	
4,887.0	9.80	268.90	4,263.0	-46.9	-2,158.5	2,159.1	2.11	-2.11	
4,982.0	8.60	275.60	4,356.8	-46.3	-2,173.7	2,174.2	1.69	-1.26	
5,078.0	6.60	278.10	4,452.0	-44.8	-2,186.3	2,186.8	2.11	-2.08	
5,123.9	5.66	273.74	4,497.6	-44.3	-2,191.2	2,191.6	2.29	-2.05	Cook Gardner 20-4 (PB-20) TGT (2)
5,173.0	4.70	267.20	4,546.5	-44.3	-2,195.6	2,196.0	2.29	-1.95	
5,268.0	1.90	273.60	4,641.3	-44.4	-2,201.1	2,201.5	2.97	-2.95	

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Cook Gardner 20-4 (PB-20)
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	KBE @ 5665.0ft (Original Well Elev)
<b>Site:</b>	PB-20 Pad	<b>MD Reference:</b>	KBE @ 5665.0ft (Original Well Elev)
<b>Well:</b>	Cook Gardner 20-4 (PB-20)	<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
5,363.0	0.60	52.70	4,736.3	-44.0	-2,202.2	2,202.7	2.51	-1.37	
5,458.0	0.80	34.80	4,831.3	-43.1	-2,201.5	2,201.9	0.31	0.21	
5,552.0	0.70	118.10	4,925.3	-42.8	-2,200.6	2,201.0	1.06	-0.11	
5,647.0	1.00	171.40	5,020.3	-43.9	-2,199.9	2,200.4	0.85	0.32	
5,743.0	0.50	352.10	5,116.3	-44.3	-2,199.9	2,200.3	1.56	-0.52	
5,837.0	0.60	210.40	5,210.3	-44.4	-2,200.2	2,200.6	1.11	0.11	
5,933.0	0.70	2.50	5,306.3	-44.2	-2,200.4	2,200.8	1.31	0.10	
6,028.0	0.70	350.30	5,401.3	-43.1	-2,200.5	2,200.9	0.16	0.00	
6,124.0	0.70	265.30	5,497.3	-42.5	-2,201.2	2,201.6	0.99	0.00	
6,219.0	0.80	119.00	5,592.3	-42.9	-2,201.2	2,201.6	1.51	0.11	
6,313.0	0.90	138.90	5,686.3	-43.8	-2,200.1	2,200.5	0.33	0.11	
6,409.0	1.00	184.40	5,782.2	-45.2	-2,199.7	2,200.1	0.77	0.10	
6,504.0	1.10	197.90	5,877.2	-46.9	-2,200.0	2,200.5	0.28	0.11	
6,599.0	1.30	202.90	5,972.2	-48.7	-2,200.7	2,201.3	0.24	0.21	
6,695.0	1.30	210.10	6,068.2	-50.7	-2,201.7	2,202.3	0.17	0.00	
6,790.0	2.00	205.60	6,163.1	-53.1	-2,202.9	2,203.6	0.75	0.74	
6,885.0	1.60	210.50	6,258.1	-55.7	-2,204.3	2,205.0	0.45	-0.42	
6,980.0	1.50	217.40	6,353.1	-57.9	-2,205.8	2,206.5	0.22	-0.11	
7,075.0	1.30	226.40	6,448.0	-59.6	-2,207.3	2,208.1	0.31	-0.21	
7,162.6	1.76	207.46	6,535.6	-61.5	-2,208.6	2,209.5	0.77	0.53	Cook Gardner 20-4 (PB-20) BHL
7,185.0	1.90	204.20	6,558.0	-62.1	-2,209.0	2,209.8	0.77	0.62	Last Cathedral Survey @ 7,185' MD
7,235.0	1.90	204.20	6,608.0	-63.6	-2,209.6	2,210.5	0.00	0.00	Projection to Bit @ 7,235' 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									
Cook Gardner 20-4 (PB- - actual wellpath misses target center by 15.3ft at 7162.6ft MD (6535.6 TVD, -61.5 N, -2208.6 E) - Circle (radius 25.0)	0.00	0.00	6,536.0	-50.5	-2,197.9	1,590,520.10	2,286,137.70	39.427470	-108.027510
Cook Gardner 20-4 (PB- - actual wellpath misses target center by 8.1ft at 5449.7ft MD (4823.0 TVD, -43.2 N, -2201.5 E) - Circle (radius 25.0)	0.00	0.00	4,823.0	-50.5	-2,197.9	1,590,520.10	2,286,137.70	39.427470	-108.027510
Interp @ 968.5 (Cook G; - actual wellpath misses target center by 22.4ft at 981.4ft MD (960.5 TVD, -13.0 N, -153.0 E) - Point	0.00	0.00	968.5	-9.3	-132.4	1,590,504.00	2,288,203.60	39.427583	-108.020198
Cook Gardner 20-4 (PB- - actual wellpath misses target center by 9.2ft at 5123.9ft MD (4497.6 TVD, -44.3 N, -2191.2 E) - Circle (radius 25.0)	0.00	0.00	4,497.0	-50.5	-2,197.9	1,590,520.10	2,286,137.70	39.427470	-108.027510

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,185.0	6,558.0	-62.1	-2,209.0	Last Cathedral Survey @ 7,185' MD	
7,235.0	6,608.0	-63.6	-2,209.6	Projection to Bit @ 7,235' MD	

Checked By: _____	Approved By: _____	Date: _____
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