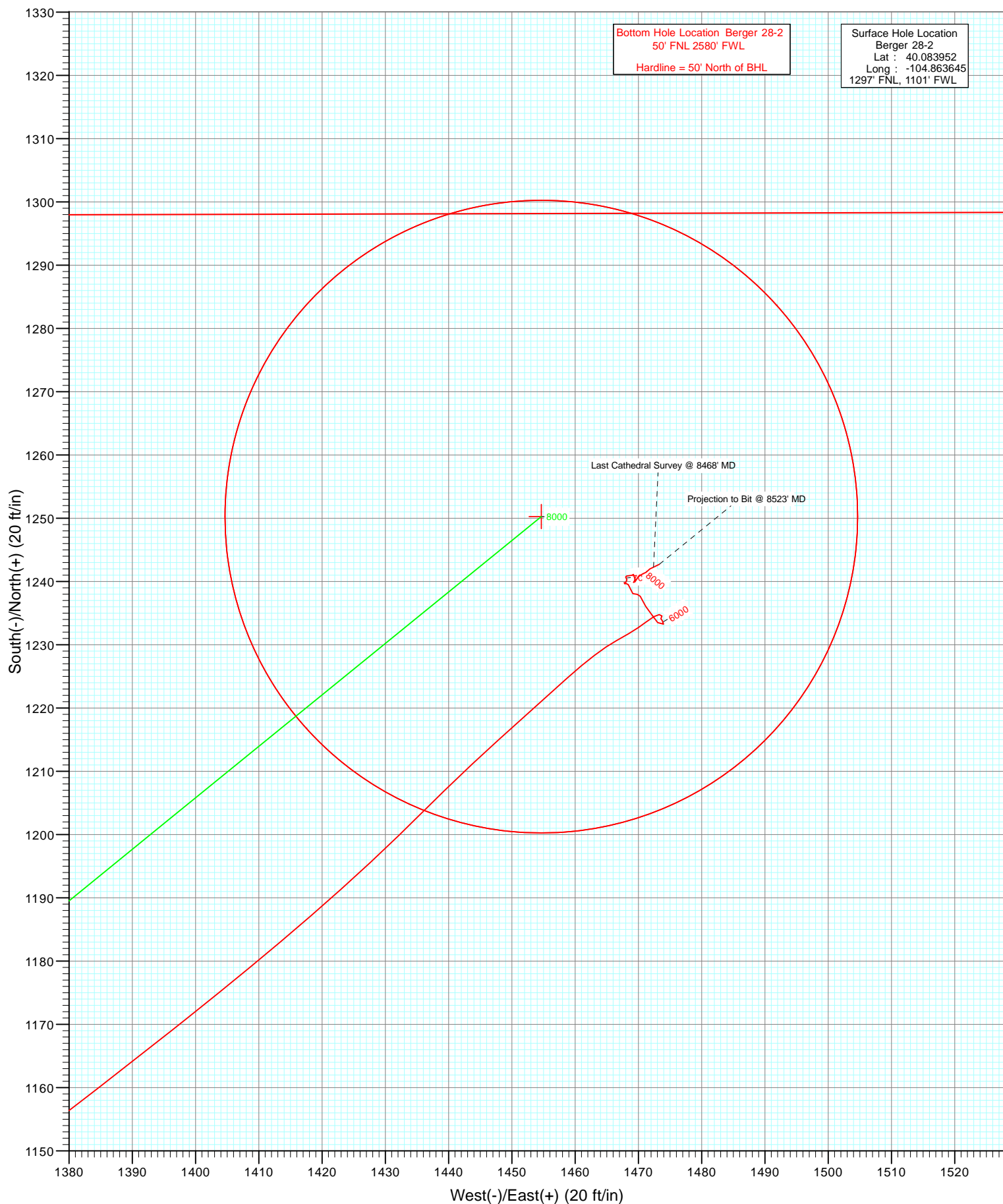


FINAL Berger 28-2 125381: 173155: DN 15' KB @ 4974.0ft (Xtreme 11) North American Datum 1983 Well Berger 28-2, True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
User	No Target (Freehand)	30.45	Slot		0.0	0.0	0.0
Name		+N/-S	+E/-W		Latitude		Longitude
Berger 28-2 BHL		8144.0	1250.3	1454.7	40.087384		-104.858446



Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Berger 28-2
Project:	DJ Wattenberg	TVD Reference:	15' KB @ 4974.0ft (Xtreme 11)
Site:	S2-T1N R67W (Berger 8 Pad)	MD Reference:	15' KB @ 4974.0ft (Xtreme 11)
Well:	Berger 28-2	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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		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 28-2					
Well Position	+N/-S	0.0 ft	Northing:	1,274,069.91 ft	Latitude:	40.083952
	+E/-W	0.0 ft	Easting:	3,178,062.50 ft	Longitude:	-104.863645
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,959.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/22/2012	8.75	66.74	52,846

Design	FINAL				
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	30.45	

Survey Program	Date	6/26/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
76.0	8,523.0	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		
76.0	0.90	212.10	76.0	-0.5	-0.3	-0.6	1.18	1.18		
163.0	0.50	81.30	163.0	-1.0	-0.3	-1.0	1.48	-0.46		
252.0	1.80	74.80	252.0	-0.6	1.4	0.2	1.47	1.46		
339.0	3.10	43.20	338.9	1.5	4.4	3.5	2.10	1.49		
416.0	4.70	25.20	415.7	5.8	7.1	8.6	2.59	2.08		
506.0	6.90	30.00	505.3	13.9	11.4	17.7	2.50	2.44		
597.0	8.80	27.20	595.4	24.8	17.3	30.1	2.13	2.09		
688.0	12.20	29.80	684.9	39.3	25.3	46.7	3.77	3.74		
778.0	13.60	29.10	772.6	56.8	35.2	66.8	1.57	1.56		
869.0	14.60	27.20	860.8	76.4	45.6	89.0	1.21	1.10		
988.0	14.80	24.70	975.9	103.5	58.8	119.0	0.56	0.17		
1,079.0	14.70	34.30	1,064.0	123.6	70.2	142.1	2.69	-0.11		

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Berger 28-2
Project:	DJ Wattenberg	TVD Reference:	15' KB @ 4974.0ft (Xtreme 11)
Site:	S2-T1N R67W (Berger 8 Pad)	MD Reference:	15' KB @ 4974.0ft (Xtreme 11)
Well:	Berger 28-2	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
1,170.0	14.10	46.20	1,152.1	140.8	84.7	164.3	3.31	-0.66	
1,261.0	15.70	53.60	1,240.1	155.8	102.6	186.3	2.73	1.76	
1,351.0	16.70	55.70	1,326.5	170.3	123.1	209.2	1.29	1.11	
1,442.0	19.70	53.00	1,412.9	186.9	146.1	235.2	3.42	3.30	
1,533.0	22.50	48.80	1,497.8	207.6	171.5	265.9	3.50	3.08	
1,624.0	24.70	51.40	1,581.2	231.0	199.5	300.2	2.67	2.42	
1,715.0	24.30	50.50	1,664.0	254.7	228.8	335.5	0.60	-0.44	
1,805.0	25.60	48.50	1,745.6	279.4	257.6	371.4	1.72	1.44	
1,896.0	23.70	47.60	1,828.3	304.8	285.8	407.6	2.13	-2.09	
1,987.0	23.60	51.20	1,911.7	328.5	313.5	442.1	1.59	-0.11	
2,078.0	25.20	49.90	1,994.6	352.4	342.6	477.4	1.85	1.76	
2,168.0	23.40	49.60	2,076.6	376.3	370.8	512.4	2.00	-2.00	
2,259.0	25.00	50.80	2,159.6	400.2	399.5	547.5	1.84	1.76	
2,350.0	22.80	48.80	2,242.8	424.0	427.7	582.2	2.58	-2.42	
2,441.0	23.30	49.50	2,326.5	447.3	454.6	616.0	0.63	0.55	
2,531.0	24.50	53.50	2,408.8	469.9	483.2	650.0	2.24	1.33	
2,622.0	25.40	53.20	2,491.3	492.9	514.0	685.3	1.00	0.99	
2,713.0	21.50	50.80	2,574.8	515.1	542.5	719.0	4.41	-4.29	
2,804.0	23.10	50.40	2,659.0	537.0	569.2	751.4	1.77	1.76	
2,894.0	23.40	51.60	2,741.7	559.4	596.8	784.7	0.62	0.33	
2,985.0	22.90	50.60	2,825.3	581.8	624.7	818.1	0.70	-0.55	
3,076.0	24.40	53.70	2,908.7	604.2	653.5	852.0	2.14	1.65	
3,167.0	24.90	51.10	2,991.4	627.4	683.5	887.2	1.31	0.55	
3,257.0	25.80	47.90	3,072.7	652.4	712.8	923.6	1.82	1.00	
3,348.0	25.40	46.70	3,154.8	679.1	741.7	961.3	0.72	-0.44	
3,439.0	24.00	48.10	3,237.5	704.8	769.7	997.6	1.67	-1.54	
3,530.0	22.00	52.10	3,321.2	727.6	796.9	1,031.1	2.79	-2.20	
3,621.0	22.60	50.10	3,405.4	749.3	823.8	1,063.4	1.06	0.66	
3,711.0	22.50	50.30	3,488.6	771.4	850.3	1,095.9	0.14	-0.11	
3,802.0	23.30	52.30	3,572.4	793.5	877.9	1,129.0	1.23	0.88	
3,893.0	23.30	52.10	3,656.0	815.6	906.4	1,162.4	0.09	0.00	
3,983.0	25.50	51.30	3,737.9	838.7	935.6	1,197.1	2.47	2.44	
4,074.0	24.20	54.30	3,820.5	861.8	966.0	1,232.5	1.99	-1.43	
4,165.0	22.80	53.80	3,903.9	883.1	995.4	1,265.7	1.55	-1.54	
4,256.0	24.10	54.00	3,987.4	904.4	1,024.6	1,298.9	1.43	1.43	
4,346.0	24.00	54.00	4,069.6	926.0	1,054.3	1,332.5	0.11	-0.11	
4,437.0	25.00	56.40	4,152.4	947.5	1,085.3	1,366.8	1.55	1.10	
4,528.0	25.60	55.10	4,234.7	969.4	1,117.4	1,402.0	0.90	0.66	
4,619.0	25.60	50.40	4,316.8	993.2	1,148.7	1,438.3	2.23	0.00	
4,709.0	22.80	49.80	4,398.9	1,016.8	1,177.0	1,473.1	3.12	-3.11	
4,800.0	21.30	50.30	4,483.2	1,038.8	1,203.2	1,505.2	1.66	-1.65	
4,891.0	21.10	57.10	4,568.0	1,058.2	1,229.7	1,535.4	2.71	-0.22	
4,982.0	20.90	61.00	4,653.0	1,075.0	1,257.6	1,564.0	1.55	-0.22	
5,072.0	22.50	59.60	4,736.6	1,091.5	1,286.5	1,592.9	1.87	1.78	
5,163.0	24.00	57.40	4,820.2	1,110.3	1,317.1	1,624.6	1.90	1.65	
5,254.0	22.30	52.50	4,903.9	1,130.8	1,346.4	1,657.1	2.82	-1.87	
5,344.0	20.00	52.80	4,987.8	1,150.5	1,372.2	1,687.2	2.56	-2.56	
5,435.0	18.90	51.70	5,073.7	1,169.0	1,396.2	1,715.3	1.27	-1.21	
5,526.0	16.30	49.20	5,160.4	1,186.5	1,417.4	1,741.1	2.97	-2.86	
5,617.0	13.30	45.10	5,248.4	1,202.2	1,434.5	1,763.4	3.49	-3.30	
5,707.0	10.40	47.90	5,336.4	1,215.0	1,447.9	1,781.1	3.28	-3.22	
5,798.0	8.00	48.20	5,426.3	1,224.7	1,458.7	1,795.0	2.64	-2.64	
5,889.0	4.50	60.90	5,516.7	1,230.7	1,466.5	1,804.1	4.11	-3.85	

Cathedral Energy Services

Survey Report

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Berger 28-2
Project:	DJ Wattenberg	TVD Reference:	15' KB @ 4974.0ft (Xtreme 11)
Site:	S2-T1N R67W (Berger 8 Pad)	MD Reference:	15' KB @ 4974.0ft (Xtreme 11)
Well:	Berger 28-2	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	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
5,980.0	2.40	52.30	5,607.5	1,233.6	1,471.2	1,809.0	2.37	-2.31	
6,070.0	0.80	85.50	5,697.5	1,234.8	1,473.3	1,811.1	1.98	-1.78	
6,161.0	0.40	215.00	5,788.5	1,234.6	1,473.7	1,811.1	1.21	-0.44	
6,252.0	0.20	182.20	5,879.5	1,234.1	1,473.6	1,810.7	0.28	-0.22	
6,343.0	0.40	129.20	5,970.5	1,233.8	1,473.8	1,810.5	0.35	0.22	
6,433.0	0.40	190.20	6,060.5	1,233.3	1,474.0	1,810.1	0.45	0.00	
6,524.0	1.30	302.70	6,151.5	1,233.5	1,473.1	1,809.9	1.65	0.99	
6,615.0	0.90	351.90	6,242.5	1,234.8	1,472.1	1,810.5	1.08	-0.44	
6,705.0	1.30	304.50	6,332.5	1,236.1	1,471.1	1,811.1	1.06	0.44	
6,796.0	1.30	0.00	6,423.4	1,237.7	1,470.3	1,812.1	1.33	0.00	
6,887.0	1.10	212.60	6,514.4	1,238.0	1,469.8	1,812.1	2.53	-0.22	
6,978.0	1.10	345.10	6,605.4	1,238.1	1,469.1	1,811.8	2.21	0.00	
7,069.0	1.00	319.20	6,696.4	1,239.5	1,468.4	1,812.7	0.53	-0.11	
7,159.0	0.40	200.60	6,786.4	1,239.8	1,467.8	1,812.6	1.38	-0.67	
7,250.0	0.30	66.50	6,877.4	1,239.6	1,467.9	1,812.5	0.71	-0.11	
7,341.0	0.70	10.20	6,968.4	1,240.3	1,468.2	1,813.2	0.65	0.44	
7,432.0	0.40	249.80	7,059.4	1,240.7	1,468.0	1,813.5	1.06	-0.33	
7,522.0	0.60	58.80	7,149.4	1,240.8	1,468.1	1,813.7	1.11	0.22	
7,613.0	0.60	101.60	7,240.4	1,241.0	1,469.0	1,814.2	0.48	0.00	
7,704.0	0.40	316.50	7,331.4	1,241.1	1,469.2	1,814.5	1.05	-0.22	
7,795.0	0.70	144.70	7,422.4	1,240.9	1,469.3	1,814.3	1.21	0.33	
7,885.0	0.30	218.50	7,512.4	1,240.3	1,469.5	1,813.9	0.76	-0.44	
7,976.0	0.30	206.20	7,603.4	1,239.9	1,469.2	1,813.4	0.07	0.00	
8,067.0	0.60	47.40	7,694.4	1,240.0	1,469.5	1,813.6	0.97	0.33	
8,157.0	0.60	18.30	7,784.4	1,240.7	1,470.0	1,814.5	0.33	0.00	
8,248.0	0.70	89.10	7,875.4	1,241.2	1,470.7	1,815.3	0.83	0.11	
8,339.0	0.30	352.40	7,966.4	1,241.5	1,471.2	1,815.8	0.87	-0.44	
8,430.0	0.90	64.50	8,057.4	1,242.0	1,471.8	1,816.6	0.94	0.66	
8,468.0	1.00	64.00	8,095.4	1,242.3	1,472.4	1,817.1	0.26	0.26	Last Cathedral Survey @ 8468' MD
8,516.4	1.12	63.36	8,143.8	1,242.7	1,473.2	1,817.8	0.26	0.25	Berger 28-2 BHL
8,523.0	1.14	63.28	8,150.3	1,242.7	1,473.3	1,817.9	0.26	0.25	Projection to Bit @ 8523' 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 28-2 BHL	0.00	0.41	8,144.0	1,250.3	1,454.7	1,275,330.58	3,179,508.15	40.087384	-104.858446
- actual wellpath misses target center by 20.0ft at 8516.4ft MD (8143.8 TVD, 1242.7 N, 1473.2 E)									
- Circle (radius 50.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
8,468.0	8,095.4	1,242.3	1,472.4	Last Cathedral Survey @ 8468' MD	
8,523.0	8,150.3	1,242.7	1,473.3	Projection to Bit @ 8523' MD	

Checked By: _____ Approved By: _____ Date: _____