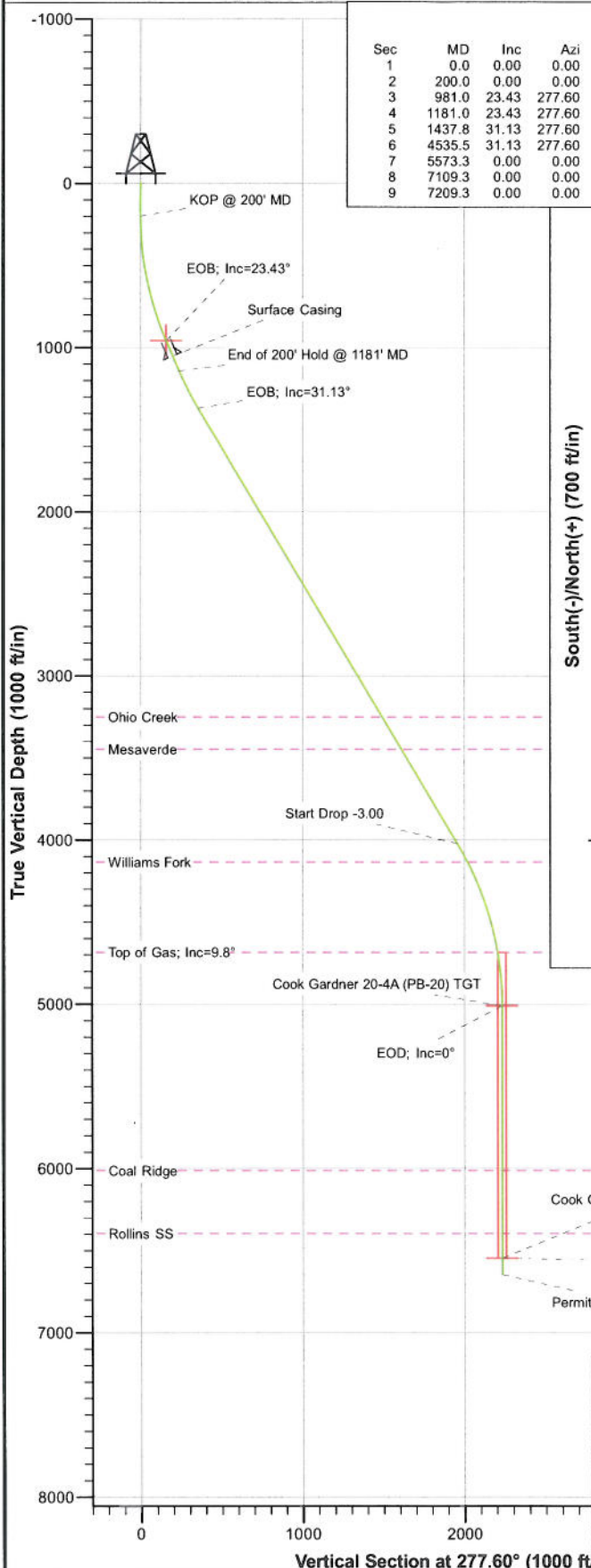
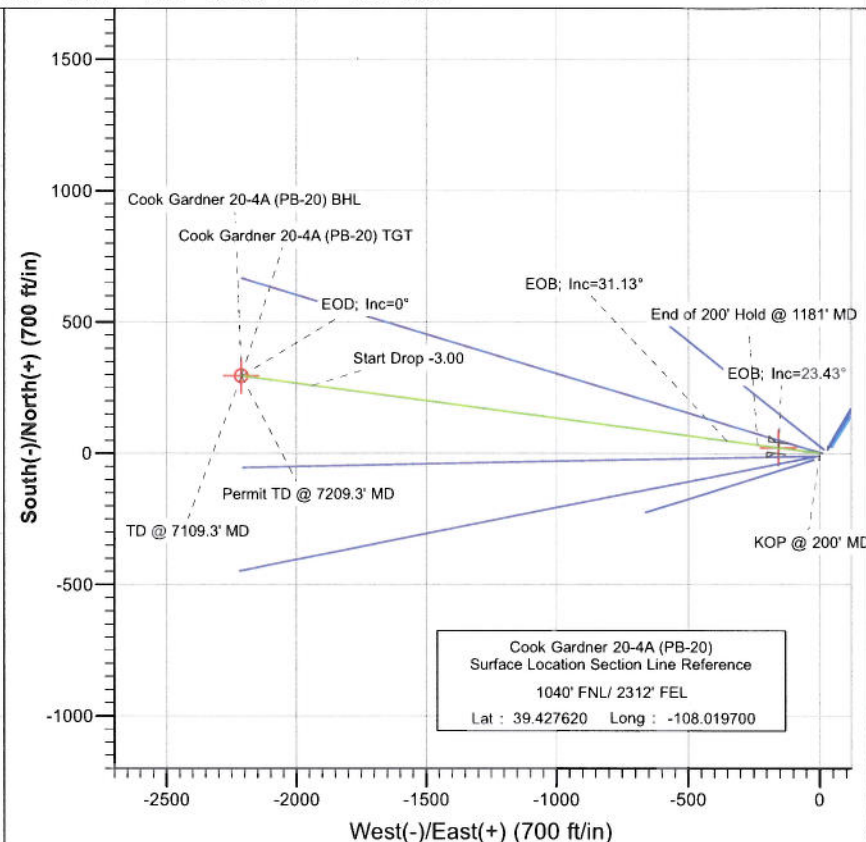




Project: S. Piceance (Parachute)
Site: NWN S20-T7S-R95W (PB-20)
Well: Cook Gardner 20-4A (PB-20)
Wellbore: DD
Plan: Plan #2



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	981.0	23.43	277.60	959.4	20.8	-156.1	3.00	277.60	157.5	Interp @ 959.4 (Cook Gardner 20-4A (PB-20) DD Plan
4	1181.0	23.43	277.60	1142.9	31.3	-234.9	0.00	0.00	237.0	
5	1437.8	31.13	277.60	1371.0	46.9	-351.5	3.00	0.00	354.6	
6	4535.5	31.13	277.60	4022.5	258.8	-1939.1	0.00	0.00	1956.3	
7	5573.3	0.00	0.00	5010.0	295.1	-2211.8	3.00	180.00	2231.4	Cook Gardner 20-4A (PB-20) TGT
8	7109.3	0.00	0.00	6546.0	295.1	-2211.8	0.00	0.00	2231.4	Cook Gardner 20-4A (PB-20) BHL
9	7209.3	0.00	0.00	6646.0	295.1	-2211.8	0.00	0.00	2231.4	



FORMATION TOP DETAILS		
TVDP	MDP	Formation
3251.0	3634.2	Ohio Creek
3448.0	3864.3	Mesaverde
4135.0	4664.4	Williams Fork
4685.0	5246.0	Top of Gas; Inc=9.8°
6013.0	6576.3	Coal Ridge
6396.0	6959.3	Rollins SS



Azimuths to True North
Magnetic North: 10.39°
Magnetic Field
Strength: 52292.6snT
Dip Angle: 65.70°
Date: 12/21/2010
Model: IGRF200510

Plan #2 Cook Gardner 20-4A (PB-20) 105XXX, BH					
KBE @ 5665.0ft (Original Well Elev) North American Datum 1983 Well Cook Gardner 20-4A (PB-20), True North					
Target	Azimuth	Origin Type	N/S	Latitude	Longitude
Cook Gardner 20-4A (PB-20) BHL	277.60	Slot	0.0		
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Cook Gardner 20-4A (PB-20) TGT	5010.0	295.1	-2211.8	39.426430	-108.027530
Cook Gardner 20-4A (PB-20) BHL	6546.0	295.1	-2211.8	39.426430	-108.027530

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: NWNE S20-T7S-R95W (PB-20)
Well: Cook Gardner 20-4A (PB-20)
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Cook Gardner 20-4A (PB-20)
TVD Reference: KBE @ 5665.0ft (Original Well Elev)
MD Reference: KBE @ 5665.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	S. Piceance (Parachute), Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	NWNE S20-T7S-R95W (PB-20)		
Site Position:		Northing:	1,590,537.60 ft
From:	Lat/Long	Easting:	2,288,393.21 ft
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in
		Latitude:	39.427690
		Longitude:	-108.019530
		Grid Convergence:	-1.59 °

Well	Cook Gardner 20-4A (PB-20)		
Well Position	+N/-S	0.0 ft	Northing: 1,590,513.43 ft
	+E/-W	0.0 ft	Easting: 2,288,344.50 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	39.427620
		Longitude:	-108.019700
		Ground Level:	5,643.0 ft

Wellbore	DD		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF200510	12/21/2010	10.39
		Dip Angle (°)	65.70
		Field Strength (nT)	52,293

Design	Plan #2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	0.0	0.0	0.0
		Direction (°)	277.60

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
981.0	23.43	277.60	959.4	20.8	-156.1	3.00	3.00	-10.55	277.60	Interp @ 959.4 (Cook
1,181.0	23.43	277.60	1,142.9	31.3	-234.9	0.00	0.00	0.00	0.00	
1,437.8	31.13	277.60	1,371.0	46.9	-351.5	3.00	3.00	0.00	0.00	
4,535.5	31.13	277.60	4,022.5	258.8	-1,939.1	0.00	0.00	0.00	0.00	
5,573.3	0.00	0.00	5,010.0	295.1	-2,211.8	3.00	-3.00	0.00	180.00	Cook Gardner 20-4A
7,109.3	0.00	0.00	6,546.0	295.1	-2,211.8	0.00	0.00	0.00	0.00	Cook Gardner 20-4A
7,209.3	0.00	0.00	6,646.0	295.1	-2,211.8	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: NWN S20-T7S-R95W (PB-20)
Well: Cook Gardner 20-4A (PB-20)
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Cook Gardner 20-4A (PB-20)
TVD Reference: KBE @ 5665.0ft (Original Well Elev)
MD Reference: KBE @ 5665.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200' MD
300.0	3.00	277.60	300.0	0.3	-2.6	2.6	3.00	3.00	
400.0	6.00	277.60	399.6	1.4	-10.4	10.5	3.00	3.00	
500.0	9.00	277.60	498.8	3.1	-23.3	23.5	3.00	3.00	
600.0	12.00	277.60	597.1	5.5	-41.4	41.7	3.00	3.00	
700.0	15.00	277.60	694.3	8.6	-64.5	65.1	3.00	3.00	
800.0	18.00	277.60	790.2	12.4	-92.7	93.5	3.00	3.00	
900.0	21.00	277.60	884.4	16.8	-125.7	126.9	3.00	3.00	
981.0	23.43	277.60	959.4	20.8	-156.1	157.5	3.00	3.00	EOB; Inc=23.43° - Interp @ 959.4 (Cook Gardn
1,000.0	23.43	277.60	976.8	21.8	-163.6	165.0	0.00	0.00	
1,082.0	23.43	277.60	1,052.1	26.1	-195.9	197.6	0.00	0.00	Surface Casing
1,100.0	23.43	277.60	1,068.6	27.1	-203.0	204.8	0.00	0.00	
1,181.0	23.43	277.60	1,142.9	31.3	-234.9	237.0	0.00	0.00	End of 200' Hold @ 1181' MD
1,200.0	24.00	277.60	1,160.3	32.4	-242.5	244.6	3.00	3.00	
1,300.0	27.00	277.60	1,250.6	38.1	-285.2	287.7	3.00	3.00	
1,400.0	30.00	277.60	1,338.4	44.4	-332.5	335.4	3.00	3.00	
1,437.8	31.13	277.60	1,371.0	46.9	-351.5	354.6	3.00	3.00	EOB; Inc=31.13°
1,500.0	31.13	277.60	1,424.2	51.2	-383.4	386.8	0.00	0.00	
1,600.0	31.13	277.60	1,509.8	58.0	-434.6	438.5	0.00	0.00	
1,700.0	31.13	277.60	1,595.4	64.8	-485.9	490.2	0.00	0.00	
1,800.0	31.13	277.60	1,681.0	71.7	-537.1	541.9	0.00	0.00	
1,900.0	31.13	277.60	1,766.6	78.5	-588.4	593.6	0.00	0.00	
2,000.0	31.13	277.60	1,852.2	85.4	-639.6	645.3	0.00	0.00	
2,100.0	31.13	277.60	1,937.8	92.2	-690.9	697.0	0.00	0.00	
2,200.0	31.13	277.60	2,023.4	99.0	-742.1	748.7	0.00	0.00	
2,300.0	31.13	277.60	2,109.0	105.9	-793.4	800.4	0.00	0.00	
2,400.0	31.13	277.60	2,194.6	112.7	-844.6	852.1	0.00	0.00	
2,500.0	31.13	277.60	2,280.2	119.5	-895.9	903.8	0.00	0.00	
2,600.0	31.13	277.60	2,365.8	126.4	-947.1	955.5	0.00	0.00	
2,700.0	31.13	277.60	2,451.4	133.2	-998.4	1,007.2	0.00	0.00	
2,800.0	31.13	277.60	2,537.0	140.1	-1,049.6	1,058.9	0.00	0.00	
2,900.0	31.13	277.60	2,622.6	146.9	-1,100.9	1,110.6	0.00	0.00	
3,000.0	31.13	277.60	2,708.2	153.7	-1,152.1	1,162.3	0.00	0.00	
3,100.0	31.13	277.60	2,793.8	160.6	-1,203.4	1,214.0	0.00	0.00	
3,200.0	31.13	277.60	2,879.4	167.4	-1,254.6	1,265.7	0.00	0.00	
3,300.0	31.13	277.60	2,965.0	174.3	-1,305.9	1,317.4	0.00	0.00	
3,400.0	31.13	277.60	3,050.6	181.1	-1,357.1	1,369.2	0.00	0.00	
3,500.0	31.13	277.60	3,136.2	187.9	-1,408.4	1,420.9	0.00	0.00	
3,600.0	31.13	277.60	3,221.7	194.8	-1,459.6	1,472.6	0.00	0.00	
3,634.2	31.13	277.60	3,251.0	197.1	-1,477.1	1,490.2	0.00	0.00	Ohio Creek
3,700.0	31.13	277.60	3,307.3	201.6	-1,510.9	1,524.3	0.00	0.00	
3,800.0	31.13	277.60	3,392.9	208.5	-1,562.1	1,576.0	0.00	0.00	
3,864.3	31.13	277.60	3,448.0	212.8	-1,595.1	1,609.2	0.00	0.00	Mesaverde
3,900.0	31.13	277.60	3,478.5	215.3	-1,613.4	1,627.7	0.00	0.00	
4,000.0	31.13	277.60	3,564.1	222.1	-1,664.6	1,679.4	0.00	0.00	
4,100.0	31.13	277.60	3,649.7	229.0	-1,715.9	1,731.1	0.00	0.00	
4,200.0	31.13	277.60	3,735.3	235.8	-1,767.1	1,782.8	0.00	0.00	
4,300.0	31.13	277.60	3,820.9	242.6	-1,818.4	1,834.5	0.00	0.00	
4,400.0	31.13	277.60	3,906.5	249.5	-1,869.6	1,886.2	0.00	0.00	
4,500.0	31.13	277.60	3,992.1	256.3	-1,920.9	1,937.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: NWN S20-T7S-R95W (PB-20)
Well: Cook Gardner 20-4A (PB-20)
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Cook Gardner 20-4A (PB-20)
TVD Reference: KBE @ 5665.0ft (Original Well Elev)
MD Reference: KBE @ 5665.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,535.5	31.13	277.60	4,022.5	258.8	-1,939.1	1,956.3	0.00	0.00	Start Drop -3.00
4,600.0	29.20	277.60	4,078.3	263.0	-1,971.2	1,988.7	3.00	-3.00	
4,664.4	27.27	277.60	4,135.0	267.1	-2,001.4	2,019.1	3.00	-3.00	Williams Fork
4,700.0	26.20	277.60	4,166.8	269.2	-2,017.3	2,035.1	3.00	-3.00	
4,800.0	23.20	277.60	4,257.6	274.7	-2,058.7	2,076.9	3.00	-3.00	
4,900.0	20.20	277.60	4,350.5	279.6	-2,095.3	2,113.9	3.00	-3.00	
5,000.0	17.20	277.60	4,445.2	283.8	-2,127.1	2,145.9	3.00	-3.00	
5,100.0	14.20	277.60	4,541.5	287.4	-2,153.9	2,173.0	3.00	-3.00	
5,200.0	11.20	277.60	4,639.0	290.3	-2,175.7	2,195.0	3.00	-3.00	
5,246.7	9.80	277.60	4,685.0	291.5	-2,184.1	2,203.5	3.00	-3.00	Top of Gas; Inc=9.8°
5,300.0	8.20	277.60	4,737.6	292.6	-2,192.4	2,211.8	3.00	-3.00	
5,400.0	5.20	277.60	4,836.9	294.1	-2,204.0	2,223.5	3.00	-3.00	
5,500.0	2.20	277.60	4,936.7	295.0	-2,210.4	2,230.0	3.00	-3.00	
5,573.3	0.00	0.00	5,010.0	295.1	-2,211.8	2,231.4	3.00	-3.00	EOD; Inc=0° - Cook Gardner 20-4A (PB-20) TG
5,600.0	0.00	0.00	5,036.7	295.1	-2,211.8	2,231.4	0.00	0.00	
5,700.0	0.00	0.00	5,136.7	295.1	-2,211.8	2,231.4	0.00	0.00	
5,800.0	0.00	0.00	5,236.7	295.1	-2,211.8	2,231.4	0.00	0.00	
5,900.0	0.00	0.00	5,336.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,000.0	0.00	0.00	5,436.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,100.0	0.00	0.00	5,536.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,200.0	0.00	0.00	5,636.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,300.0	0.00	0.00	5,736.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,400.0	0.00	0.00	5,836.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,500.0	0.00	0.00	5,936.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,576.3	0.00	0.00	6,013.0	295.1	-2,211.8	2,231.4	0.00	0.00	Coal Ridge
6,600.0	0.00	0.00	6,036.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,700.0	0.00	0.00	6,136.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,800.0	0.00	0.00	6,236.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,900.0	0.00	0.00	6,336.7	295.1	-2,211.8	2,231.4	0.00	0.00	
6,959.3	0.00	0.00	6,396.0	295.1	-2,211.8	2,231.4	0.00	0.00	Rollins SS
7,000.0	0.00	0.00	6,436.7	295.1	-2,211.8	2,231.4	0.00	0.00	
7,100.0	0.00	0.00	6,536.7	295.1	-2,211.8	2,231.4	0.00	0.00	
7,109.3	0.00	0.00	6,546.0	295.1	-2,211.8	2,231.4	0.00	0.00	TD @ 7109.3' MD - Cook Gardner 20-4A (PB-2
7,200.0	0.00	0.00	6,636.7	295.1	-2,211.8	2,231.4	0.00	0.00	
7,209.3	0.00	0.00	6,646.0	295.1	-2,211.8	2,231.4	0.00	0.00	Permit TD @ 7209.3' 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									
Interp @ 959.4 (Cook G: - plan hits target center - Point	0.00	0.00	959.4	20.8	-156.1	1,590,538.58	2,288,189.05	39.427677	-108.020253
Cook Gardner 20-4A (P - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,010.0	295.1	-2,211.8	1,590,869.79	2,286,141.78	39.428430	-108.027530
Cook Gardner 20-4A (P - plan hits target center - Circle (radius 25.0)	0.00	0.00	6,546.0	295.1	-2,211.8	1,590,869.79	2,286,141.78	39.428430	-108.027530

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: NWNW S20-T7S-R95W (PB-20)
Well: Cook Gardner 20-4A (PB-20)
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Cook Gardner 20-4A (PB-20)
TVD Reference: KBE @ 5665.0ft (Original Well Elev)
MD Reference: KBE @ 5665.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,082.0	1,052.1	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,634.2	3,251.0	Ohio Creek		0.00	
3,864.3	3,448.0	Mesaverde		0.00	
4,664.4	4,135.0	Williams Fork		0.00	
5,246.7	4,685.0	Top of Gas; Inc=9.8°		0.00	
6,576.3	6,013.0	Coal Ridge		0.00	
6,959.3	6,396.0	Rollins SS		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
981.0	959.4	20.8	-156.1	EOB; Inc=23.43°
1,181.0	1,142.9	31.3	-234.9	End of 200' Hold @ 1181' MD
1,437.8	1,371.0	46.9	-351.5	EOB; Inc=31.13°
4,535.5	4,022.5	258.8	-1,939.1	Start Drop -3.00
5,573.3	5,010.0	295.1	-2,211.8	EOD; Inc=0°
7,109.3	6,546.0	295.1	-2,211.8	TD @ 7109.3' MD
7,209.3	6,646.0	295.1	-2,211.8	Permit TD @ 7209.3' MD