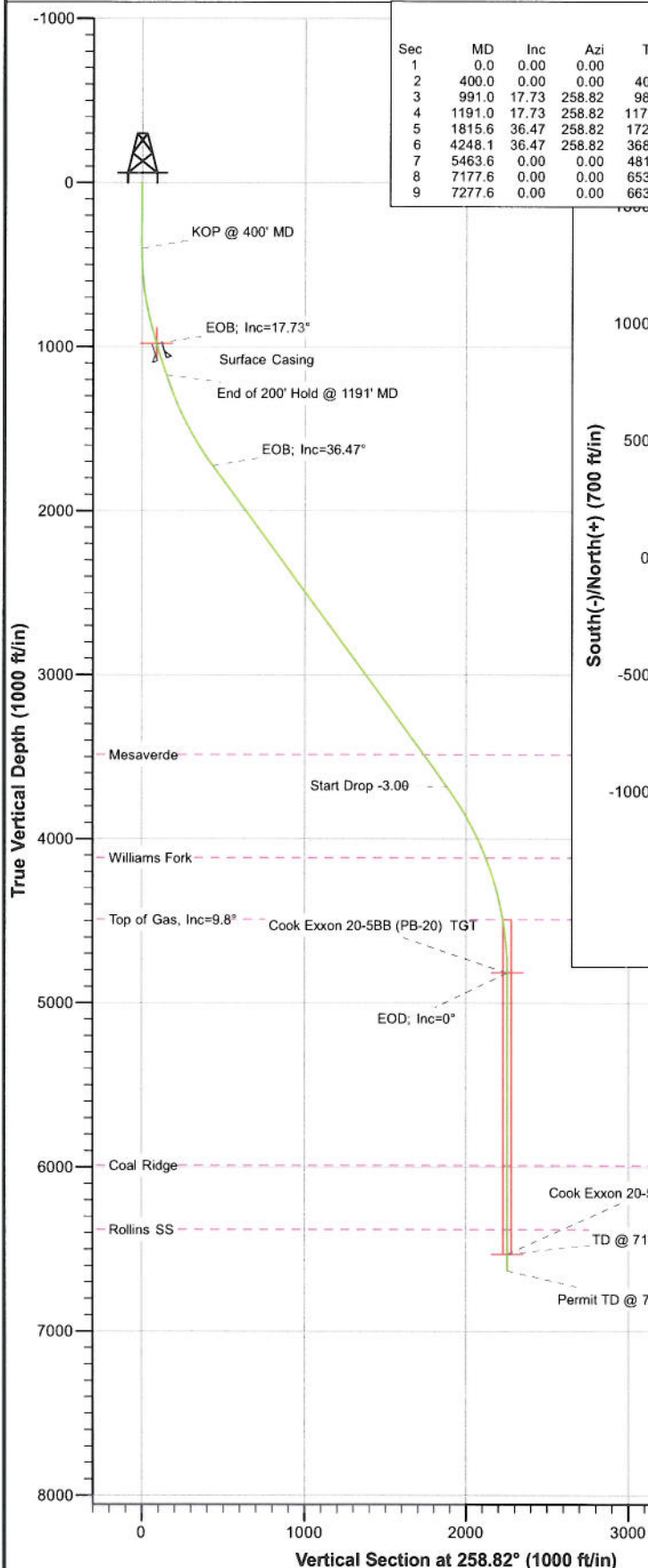
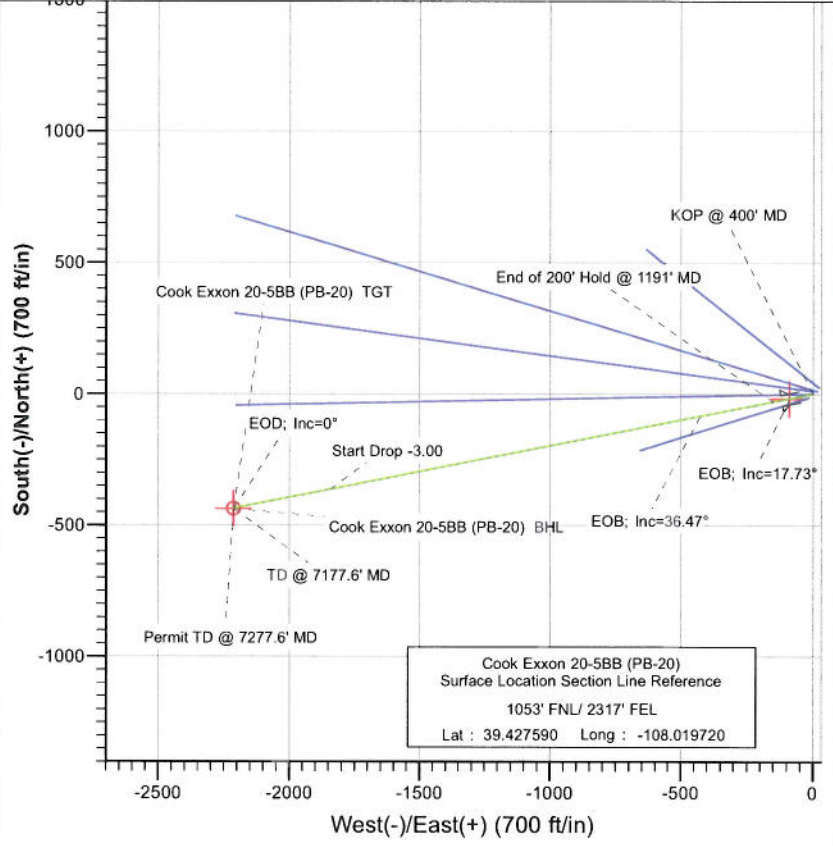




Project: S. Piceance (Parachute)
 Site: NWN S20-T7S-R95W (PB-20)
 Well: Cook Exxon 20-5BB (PB-20)
 Wellbore: DD
 Plan: Plan #2



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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0		
3	991.0	17.73	258.82	981.6	-17.6	-89.0	3.00	258.82	90.7	Interp @ 981.6 (Cook Exxon 20-5BB (PB-20) DD Plan	
4	1191.0	17.73	258.82	1172.1	-29.4	-148.7	0.00	0.00	151.6		
5	1815.6	36.47	258.82	1725.6	-84.3	-426.6	3.00	0.00	434.9		
6	4248.1	36.47	258.82	3681.9	-364.5	-1845.0	0.00	0.00	1880.6		
7	5463.6	0.00	0.00	4817.0	-437.0	-2211.8	3.00	180.00	2254.6	Cook Exxon 20-5BB (PB-20) TGT	
8	7177.6	0.00	0.00	6531.0	-437.0	-2211.8	0.00	0.00	2254.6	Cook Exxon 20-5BB (PB-20) BHL	
9	7277.6	0.00	0.00	6631.0	-437.0	-2211.8	0.00	0.00	2254.6		



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3487.0	4005.8	Mesaverde
4116.0	4745.8	Williams Fork
4492.0	5137.6	Top of Gas, Inc=9.8°
5990.0	6636.6	Coal Ridge
6381.0	7027.6	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 Exxon 20-5BB (PB-20) 105XXX, BH					
KBE @ 5665.0ft (Original Well Elev) North American Datum 1983 Well Cook Exxon 20-5BB (PB-20), True North					
Target	Azimuth	Origin	Type	N/S	
Cook Exxon 20-5BB (PB-20) BHL	258.82	Slot		0.0	
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Cook Exxon 20-5BB (PB-20) TGT	4817.0	-437.0	-2211.8	39.426390	-108.027550
Cook Exxon 20-5BB (PB-20) BHL	6531.0	-437.0	-2211.8	39.426390	-108.027550

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 Exxon 20-5BB (PB-20)
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Cook Exxon 20-5BB (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	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 Exxon 20-5BB (PB-20)			
Well Position	+N/-S	0.0 ft	Northing: 1,590,502.67 ft	Latitude: 39.427590
	+E/-W	0.0 ft	Easting: 2,288,338.55 ft	Longitude: -108.019720
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level: 5,643.0 ft

Wellbore	DD			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)
	IGRF200510	12/21/2010	10.39	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)	Direction (°)
	0.0	0.0	0.0	258.82

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
991.0	17.73	258.82	981.6	-17.6	-89.0	3.00	3.00	-17.12	258.82	Interp @ 981.6 (Cook
1,191.0	17.73	258.82	1,172.1	-29.4	-148.7	0.00	0.00	0.00	0.00	
1,815.6	36.47	258.82	1,725.6	-84.3	-426.6	3.00	3.00	0.00	0.00	
4,248.1	36.47	258.82	3,681.9	-364.5	-1,845.0	0.00	0.00	0.00	0.00	
5,463.6	0.00	0.00	4,817.0	-437.0	-2,211.8	3.00	-3.00	0.00	180.00	Cook Exxon 20-5BB (
7,177.6	0.00	0.00	6,531.0	-437.0	-2,211.8	0.00	0.00	0.00	0.00	Cook Exxon 20-5BB (
7,277.6	0.00	0.00	6,631.0	-437.0	-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: NWNE S20-T7S-R95W (PB-20)
Well: Cook Exxon 20-5BB (PB-20)
Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Cook Exxon 20-5BB (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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400' MD
500.0	3.00	258.82	500.0	-0.5	-2.6	2.6	3.00	3.00	
600.0	6.00	258.82	599.6	-2.0	-10.3	10.5	3.00	3.00	
700.0	9.00	258.82	698.8	-4.6	-23.1	23.5	3.00	3.00	
800.0	12.00	258.82	797.1	-8.1	-40.9	41.7	3.00	3.00	
900.0	15.00	258.82	894.3	-12.6	-63.8	65.1	3.00	3.00	
991.0	17.73	258.82	981.6	-17.6	-89.0	90.7	3.00	3.00	EOB; Inc=17.73° - Interp @ 981.6 (Cook Exxon)
1,000.0	17.73	258.82	990.2	-18.1	-91.7	93.5	0.00	0.00	
1,091.0	17.73	258.82	1,076.9	-23.5	-118.9	121.2	0.00	0.00	Surface Casing
1,100.0	17.73	258.82	1,085.4	-24.0	-121.6	123.9	0.00	0.00	
1,191.0	17.73	258.82	1,172.1	-29.4	-148.7	151.6	0.00	0.00	End of 200' Hold @ 1191' MD
1,200.0	18.00	258.82	1,180.7	-29.9	-151.5	154.4	3.00	3.00	
1,300.0	21.00	258.82	1,274.9	-36.4	-184.2	187.8	3.00	3.00	
1,400.0	24.00	258.82	1,367.3	-43.8	-221.7	226.0	3.00	3.00	
1,500.0	27.00	258.82	1,457.6	-52.2	-264.0	269.1	3.00	3.00	
1,600.0	30.00	258.82	1,545.4	-61.4	-310.8	316.8	3.00	3.00	
1,700.0	33.00	258.82	1,630.7	-71.5	-362.0	369.0	3.00	3.00	
1,800.0	36.00	258.82	1,713.1	-82.5	-417.6	425.7	3.00	3.00	
1,815.6	36.47	258.82	1,725.6	-84.3	-426.6	434.9	3.00	3.00	EOB; Inc=36.47°
1,900.0	36.47	258.82	1,793.5	-94.0	-475.8	485.0	0.00	0.00	
2,000.0	36.47	258.82	1,874.0	-105.5	-534.2	544.5	0.00	0.00	
2,100.0	36.47	258.82	1,954.4	-117.0	-592.5	603.9	0.00	0.00	
2,200.0	36.47	258.82	2,034.8	-128.6	-650.8	663.3	0.00	0.00	
2,300.0	36.47	258.82	2,115.2	-140.1	-709.1	722.8	0.00	0.00	
2,400.0	36.47	258.82	2,195.6	-151.6	-767.4	782.2	0.00	0.00	
2,500.0	36.47	258.82	2,276.1	-163.1	-825.7	841.7	0.00	0.00	
2,600.0	36.47	258.82	2,356.5	-174.6	-884.0	901.1	0.00	0.00	
2,700.0	36.47	258.82	2,436.9	-186.2	-942.3	960.5	0.00	0.00	
2,800.0	36.47	258.82	2,517.3	-197.7	-1,000.6	1,020.0	0.00	0.00	
2,900.0	36.47	258.82	2,597.7	-209.2	-1,058.9	1,079.4	0.00	0.00	
3,000.0	36.47	258.82	2,678.2	-220.7	-1,117.2	1,138.8	0.00	0.00	
3,100.0	36.47	258.82	2,758.6	-232.2	-1,175.5	1,198.3	0.00	0.00	
3,200.0	36.47	258.82	2,839.0	-243.8	-1,233.9	1,257.7	0.00	0.00	
3,300.0	36.47	258.82	2,919.4	-255.3	-1,292.2	1,317.1	0.00	0.00	
3,400.0	36.47	258.82	2,999.8	-266.8	-1,350.5	1,376.6	0.00	0.00	
3,500.0	36.47	258.82	3,080.3	-278.3	-1,408.8	1,436.0	0.00	0.00	
3,600.0	36.47	258.82	3,160.7	-289.8	-1,467.1	1,495.4	0.00	0.00	
3,700.0	36.47	258.82	3,241.1	-301.4	-1,525.4	1,554.9	0.00	0.00	
3,800.0	36.47	258.82	3,321.5	-312.9	-1,583.7	1,614.3	0.00	0.00	
3,900.0	36.47	258.82	3,402.0	-324.4	-1,642.0	1,673.8	0.00	0.00	
4,000.0	36.47	258.82	3,482.4	-335.9	-1,700.3	1,733.2	0.00	0.00	
4,005.8	36.47	258.82	3,487.0	-336.6	-1,703.7	1,736.6	0.00	0.00	Mesaverde
4,100.0	36.47	258.82	3,562.8	-347.4	-1,758.6	1,792.6	0.00	0.00	
4,200.0	36.47	258.82	3,643.2	-359.0	-1,816.9	1,852.1	0.00	0.00	
4,248.1	36.47	258.82	3,681.9	-364.5	-1,845.0	1,880.6	0.00	0.00	Start Drop -3.00
4,300.0	34.91	258.82	3,724.0	-370.4	-1,874.7	1,910.9	3.00	-3.00	
4,400.0	31.91	258.82	3,807.5	-381.0	-1,928.7	1,966.0	3.00	-3.00	
4,500.0	28.91	258.82	3,893.7	-390.9	-1,978.3	2,016.6	3.00	-3.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: S. Piceance (Parachute)
 Site: NWNE S20-T7S-R95W (PB-20)
 Well: Cook Exxon 20-5BB (PB-20)
 Wellbore: DD
 Design: Plan #2

Local Co-ordinate Reference: Well Cook Exxon 20-5BB (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
4,600.0	25.91	258.82	3,982.5	-399.8	-2,023.5	2,062.6	3.00	-3.00	
4,700.0	22.91	258.82	4,073.6	-407.8	-2,064.0	2,103.9	3.00	-3.00	
4,745.8	21.53	258.82	4,116.0	-411.1	-2,081.0	2,121.3	3.00	-3.00	Williams Fork
4,800.0	19.91	258.82	4,166.7	-414.9	-2,099.8	2,140.4	3.00	-3.00	
4,900.0	16.91	258.82	4,261.5	-421.0	-2,130.8	2,172.0	3.00	-3.00	
5,000.0	13.91	258.82	4,357.9	-426.1	-2,156.9	2,198.6	3.00	-3.00	
5,100.0	10.91	258.82	4,455.6	-430.3	-2,178.0	2,220.1	3.00	-3.00	
5,137.0	9.80	258.82	4,492.0	-431.6	-2,184.5	2,226.7	3.00	-3.00	Top of Gas, Inc=9.8°
5,200.0	7.91	258.82	4,554.2	-433.5	-2,194.0	2,236.4	3.00	-3.00	
5,300.0	4.91	258.82	4,653.6	-435.6	-2,204.9	2,247.6	3.00	-3.00	
5,400.0	1.91	258.82	4,753.4	-436.8	-2,210.8	2,253.5	3.00	-3.00	
5,463.6	0.00	0.00	4,817.0	-437.0	-2,211.8	2,254.6	3.00	-3.00	EOD; Inc=0° - Cook Exxon 20-5BB (PB-20) TG
5,500.0	0.00	0.00	4,853.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
5,600.0	0.00	0.00	4,953.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
5,700.0	0.00	0.00	5,053.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
5,800.0	0.00	0.00	5,153.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
5,900.0	0.00	0.00	5,253.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,000.0	0.00	0.00	5,353.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,100.0	0.00	0.00	5,453.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,200.0	0.00	0.00	5,553.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,300.0	0.00	0.00	5,653.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,400.0	0.00	0.00	5,753.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,500.0	0.00	0.00	5,853.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,600.0	0.00	0.00	5,953.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,636.6	0.00	0.00	5,990.0	-437.0	-2,211.8	2,254.6	0.00	0.00	Coal Ridge
6,700.0	0.00	0.00	6,053.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,800.0	0.00	0.00	6,153.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
6,900.0	0.00	0.00	6,253.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
7,000.0	0.00	0.00	6,353.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
7,027.6	0.00	0.00	6,381.0	-437.0	-2,211.8	2,254.6	0.00	0.00	Rollins SS
7,100.0	0.00	0.00	6,453.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
7,177.6	0.00	0.00	6,531.0	-437.0	-2,211.8	2,254.6	0.00	0.00	TD @ 7177.6' MD - Cook Exxon 20-5BB (PB-20)
7,200.0	0.00	0.00	6,553.4	-437.0	-2,211.8	2,254.6	0.00	0.00	
7,277.6	0.00	0.00	6,631.0	-437.0	-2,211.8	2,254.6	0.00	0.00	Permit TD @ 7277.6' 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 Exxon 20-5BB (PE - plan hits target center - Circle (radius 25.0)	0.00	0.00	6,531.0	-437.0	-2,211.8	1,590,127.20	2,286,115.46	39.426390	-108.027550
Interp @ 981.6 (Cook E) - plan hits target center - Point	0.00	0.00	981.6	-17.6	-89.0	1,590,487.56	2,288,249.10	39.427542	-108.020035
Cook Exxon 20-5BB (PE - plan hits target center - Circle (radius 25.0)	0.00	0.00	4,817.0	-437.0	-2,211.8	1,590,127.20	2,286,115.46	39.426390	-108.027550

Cathedral Energy Services

Planning Report

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Wellbore: DD
Design: Plan #2

Local Co-ordinate Reference: Well Cook Exxon 20-5BB (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)
1,091.0	1,076.9	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,005.8	3,487.0	Mesaverde		0.00	
4,745.8	4,116.0	Williams Fork		0.00	
5,137.0	4,492.0	Top of Gas, Inc=9.8°		0.00	
6,636.6	5,990.0	Coal Ridge		0.00	
7,027.6	6,381.0	Rollins SS		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
400.0	400.0	0.0	0.0	KOP @ 400' MD
991.0	981.6	-17.6	-89.0	EOB; Inc=17.73°
1,191.0	1,172.1	-29.4	-148.7	End of 200' Hold @ 1191' MD
1,815.6	1,725.6	-84.3	-426.6	EOB; Inc=36.47°
4,248.1	3,681.9	-364.5	-1,845.0	Start Drop -3.00
5,463.6	4,817.0	-437.0	-2,211.8	EOD; Inc=0°
7,177.6	6,531.0	-437.0	-2,211.8	TD @ 7177.6' MD
7,277.6	6,631.0	-437.0	-2,211.8	Permit TD @ 7277.6' MD