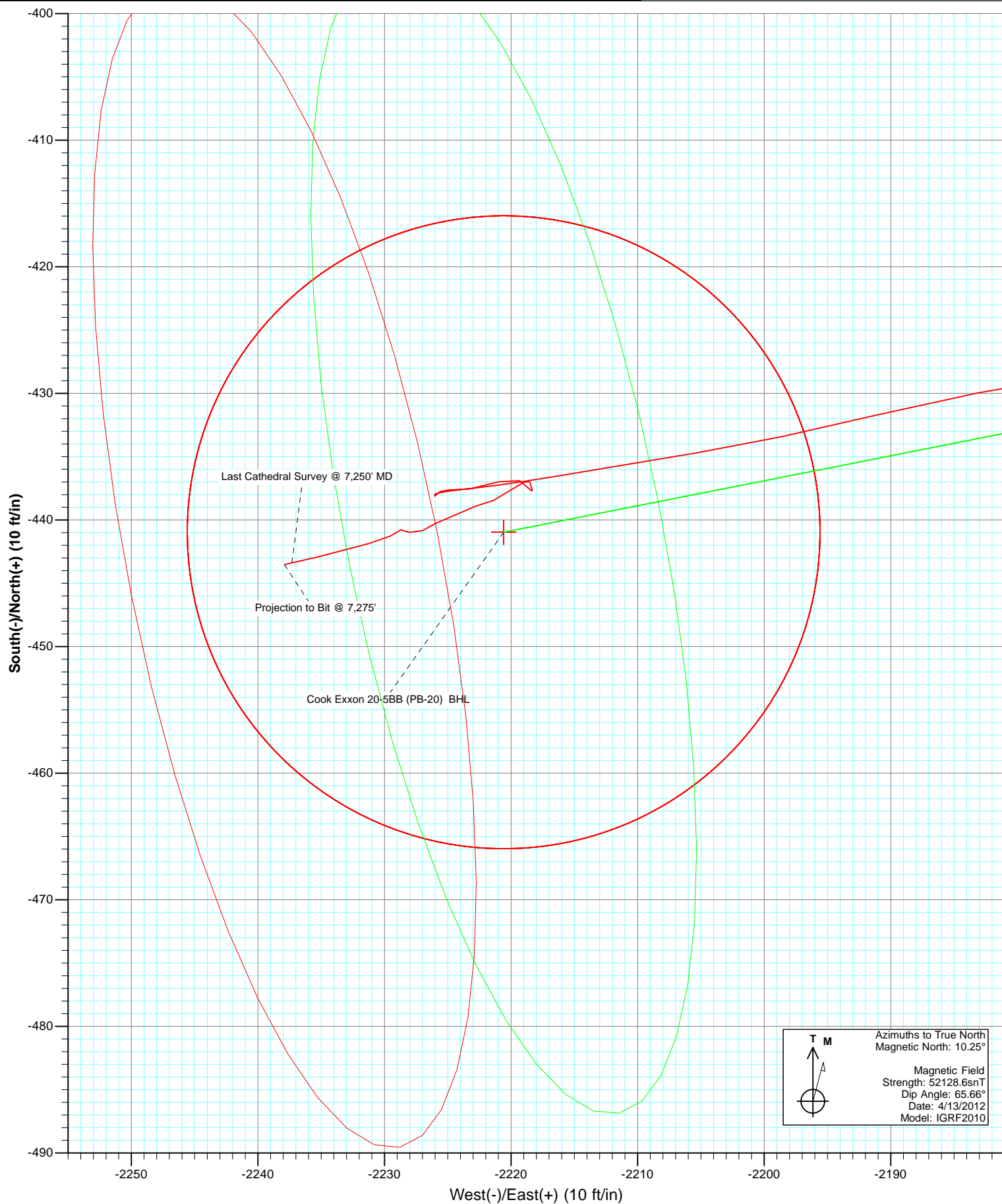
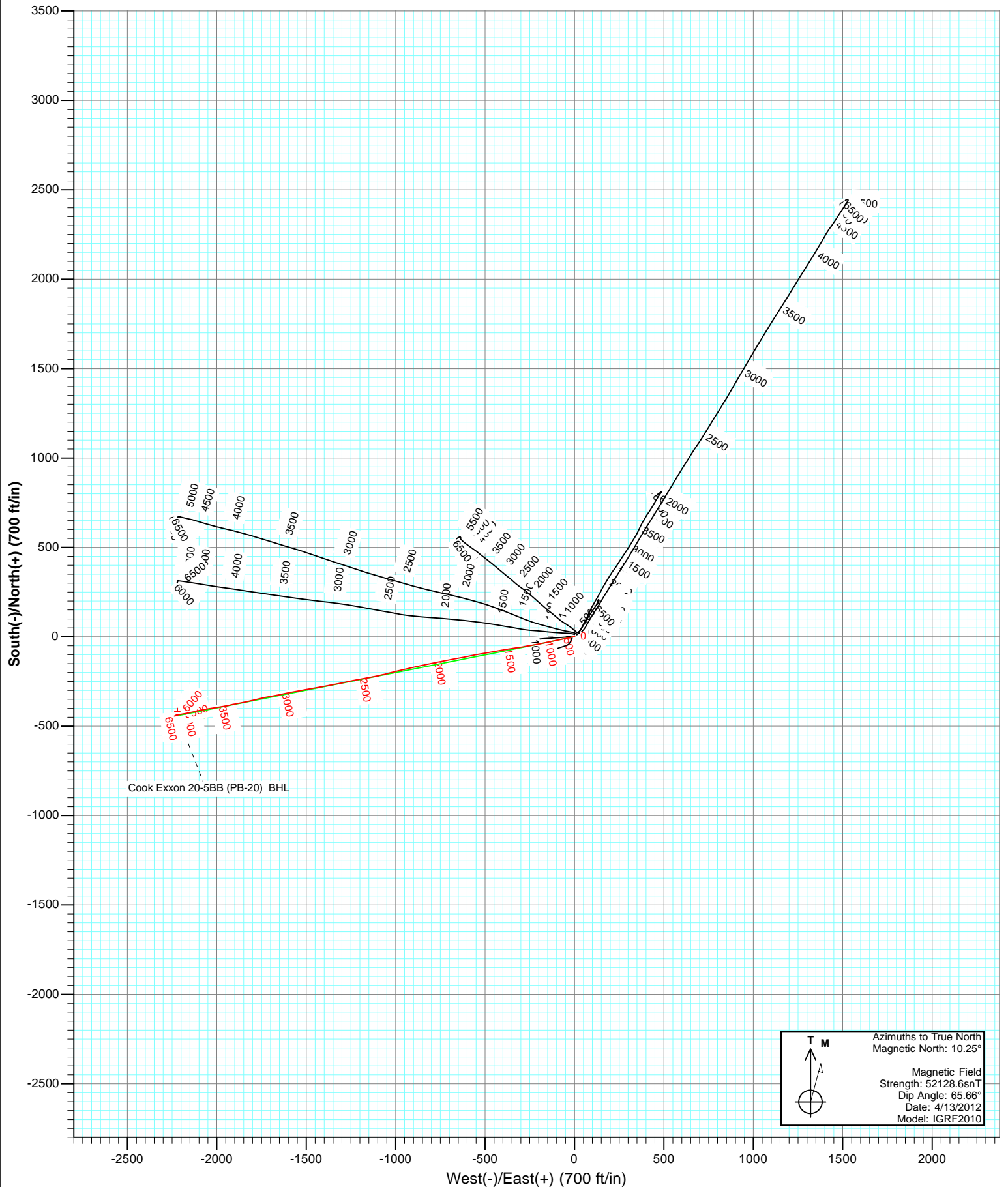


Azimuths to True North
 Magnetic North: 10.25°

Magnetic Field
 Strength: 52128.6snT
 Dip Angle: 65.66°
 Date: 4/13/2012
 Model: IGRF2010





Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Cook Exxon 20-5BB (PB-20)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 5665.0ft (Nabors #M13)
Site:	PB-20 Pad	MD Reference:	KBE @ 5665.0ft (Nabors #M13)
Well:	Cook Exxon 20-5BB (PB-20)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

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		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 Exxon 20-5BB (PB-20)					
Well Position	+N/-S	0.0 ft	Northing:	1,590,506.41 ft	Latitude:	39.427601
	+E/-W	0.0 ft	Easting:	2,288,347.41 ft	Longitude:	-108.019689
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,643.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/13/2012	10.25	65.66	52,129

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	258.77	

Survey Program	Date	4/19/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
82.0	1,068.0	Survey #1 (DD)	MWD	Geolink MWD	
1,168.0	7,275.0	Survey #2 (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		
82.0	0.50	57.20	82.0	0.2	0.3	-0.3	0.61	0.61		
111.0	0.40	69.80	111.0	0.3	0.5	-0.6	0.48	-0.34		
143.0	0.80	16.80	143.0	0.5	0.7	-0.8	2.01	1.25		
173.0	0.50	41.80	173.0	0.8	0.8	-1.0	1.35	-1.00		
204.0	0.50	27.20	204.0	1.1	1.0	-1.2	0.41	0.00		
235.0	0.40	4.10	235.0	1.3	1.0	-1.3	0.66	-0.32		
266.0	0.60	285.40	266.0	1.4	0.9	-1.2	2.11	0.65		
297.0	1.10	272.90	297.0	1.5	0.4	-0.7	1.71	1.61		
328.0	0.80	263.60	328.0	1.5	-0.1	-0.2	1.09	-0.97		
359.0	1.20	253.40	359.0	1.4	-0.6	0.3	1.41	1.29		
389.0	2.20	258.70	389.0	1.2	-1.5	1.2	3.37	3.33		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Cook Exxon 20-5BB (PB-20)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 5665.0ft (Nabors #M13)
Site:	PB-20 Pad	MD Reference:	KBE @ 5665.0ft (Nabors #M13)
Well:	Cook Exxon 20-5BB (PB-20)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
420.0	2.90	259.70	419.9	0.9	-2.8	2.6	2.26	2.26	
451.0	2.90	257.00	450.9	0.6	-4.4	4.2	0.44	0.00	
482.0	3.70	259.20	481.8	0.2	-6.1	5.9	2.61	2.58	
513.0	5.00	256.50	512.8	-0.3	-8.4	8.3	4.24	4.19	
542.0	5.50	259.70	541.6	-0.8	-11.0	10.9	2.00	1.72	
635.0	8.10	255.10	634.0	-3.3	-21.7	21.9	2.85	2.80	
727.0	11.10	257.20	724.7	-6.9	-36.6	37.3	3.28	3.26	
820.0	13.80	258.60	815.5	-11.1	-56.2	57.3	2.92	2.90	
911.0	16.40	259.50	903.3	-15.6	-79.5	81.0	2.87	2.86	
1,004.0	19.00	258.70	991.9	-20.9	-107.3	109.3	2.81	2.80	
1,068.0	19.50	257.90	1,052.3	-25.2	-127.9	130.4	0.88	0.78	
1,168.0	20.40	256.80	1,146.3	-32.7	-161.2	164.5	0.98	0.90	
1,263.0	23.00	260.80	1,234.6	-39.4	-195.7	199.6	3.15	2.74	
1,358.0	25.60	258.90	1,321.2	-46.4	-234.1	238.7	2.86	2.74	
1,454.0	29.00	260.40	1,406.5	-54.2	-277.4	282.7	3.61	3.54	
1,550.0	31.90	261.90	1,489.2	-61.7	-325.5	331.3	3.12	3.02	
1,645.0	34.60	259.90	1,568.7	-70.0	-376.9	383.3	3.07	2.84	
1,740.0	38.10	260.00	1,645.2	-79.8	-432.4	439.6	3.68	3.68	
1,836.0	39.60	261.10	1,719.9	-89.7	-491.8	499.8	1.72	1.56	
1,931.0	41.70	259.10	1,792.0	-100.3	-552.7	561.7	2.60	2.21	
2,027.0	40.30	258.00	1,864.5	-112.8	-614.4	624.6	1.64	-1.46	
2,123.0	41.00	259.70	1,937.3	-124.9	-675.8	687.2	1.36	0.73	
2,218.0	39.60	259.00	2,009.8	-136.3	-736.2	748.6	1.55	-1.47	
2,313.0	40.90	258.90	2,082.3	-148.0	-796.4	810.0	1.37	1.37	
2,408.0	39.60	258.00	2,154.8	-160.3	-856.5	871.4	1.50	-1.37	
2,503.0	40.90	255.80	2,227.3	-174.2	-916.3	932.7	2.03	1.37	
2,599.0	41.50	257.10	2,299.5	-189.0	-977.8	995.9	1.09	0.62	
2,694.0	39.90	255.60	2,371.5	-203.7	-1,038.0	1,057.8	1.97	-1.68	
2,790.0	41.10	258.20	2,444.5	-217.8	-1,098.7	1,120.1	2.16	1.25	
2,884.0	40.90	259.60	2,515.5	-229.6	-1,159.2	1,181.7	1.00	-0.21	
2,980.0	41.60	259.20	2,587.6	-241.3	-1,221.4	1,245.0	0.78	0.73	
3,076.0	41.70	257.30	2,659.4	-254.3	-1,283.9	1,308.8	1.32	0.10	
3,171.0	42.10	259.50	2,730.1	-267.0	-1,346.0	1,372.3	1.60	0.42	
3,266.0	40.90	260.00	2,801.2	-278.2	-1,408.0	1,435.2	1.31	-1.26	
3,362.0	42.80	260.00	2,872.8	-289.3	-1,471.0	1,499.2	1.98	1.98	
3,457.0	41.20	259.50	2,943.4	-300.7	-1,533.6	1,562.8	1.72	-1.68	
3,552.0	39.80	257.80	3,015.6	-312.8	-1,594.1	1,624.5	1.88	-1.47	
3,647.0	40.50	259.30	3,088.2	-324.9	-1,654.1	1,685.7	1.26	0.74	
3,742.0	40.30	259.20	3,160.6	-336.4	-1,714.6	1,747.3	0.22	-0.21	
3,838.0	36.80	256.50	3,235.6	-349.0	-1,773.1	1,807.1	4.04	-3.65	
3,933.0	33.60	257.60	3,313.2	-361.2	-1,826.4	1,861.8	3.43	-3.37	
4,029.0	31.00	259.40	3,394.4	-371.5	-1,876.7	1,913.1	2.89	-2.71	
4,124.0	28.10	256.70	3,477.0	-381.2	-1,922.5	1,959.9	3.36	-3.05	
4,220.0	27.20	261.40	3,562.1	-389.6	-1,966.2	2,004.5	2.46	-0.94	
4,315.0	25.20	261.10	3,647.3	-396.0	-2,007.7	2,046.4	2.11	-2.11	
4,410.0	21.70	260.60	3,734.4	-402.0	-2,045.0	2,084.1	3.69	-3.68	
4,506.0	19.30	259.00	3,824.4	-407.9	-2,078.1	2,117.7	2.57	-2.50	
4,601.0	17.10	256.40	3,914.6	-414.2	-2,107.1	2,147.4	2.47	-2.32	
4,696.0	14.90	257.60	4,005.9	-420.1	-2,132.6	2,173.6	2.34	-2.32	
4,792.0	13.30	258.20	4,099.0	-425.0	-2,155.5	2,197.0	1.67	-1.67	
4,887.0	10.50	261.60	4,192.0	-428.5	-2,174.7	2,216.5	3.04	-2.95	
4,982.0	9.70	256.30	4,285.5	-431.7	-2,191.1	2,233.2	1.29	-0.84	
5,078.0	7.80	260.40	4,380.4	-434.7	-2,205.3	2,247.8	2.08	-1.98	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Cook Exxon 20-5BB (PB-20)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 5665.0ft (Nabors #M13)
Site:	PB-20 Pad	MD Reference:	KBE @ 5665.0ft (Nabors #M13)
Well:	Cook Exxon 20-5BB (PB-20)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
5,173.0	5.50	260.70	4,474.7	-436.5	-2,216.2	2,258.8	2.42	-2.42	
5,268.0	3.10	263.80	4,569.5	-437.5	-2,223.2	2,265.9	2.54	-2.53	
5,363.0	0.30	235.40	4,664.4	-437.9	-2,226.0	2,268.7	2.99	-2.95	
5,458.0	0.20	102.30	4,759.4	-438.1	-2,226.0	2,268.7	0.48	-0.11	
5,552.0	0.60	35.20	4,853.4	-437.7	-2,225.6	2,268.2	0.59	0.43	
5,647.0	0.60	124.90	4,948.4	-437.6	-2,224.9	2,267.5	0.89	0.00	
5,743.0	1.60	73.60	5,044.4	-437.5	-2,223.2	2,265.8	1.37	1.04	
5,837.0	1.20	79.00	5,138.4	-437.0	-2,221.0	2,263.6	0.45	-0.43	
5,933.0	0.80	99.20	5,234.3	-436.9	-2,219.3	2,261.9	0.55	-0.42	
6,028.0	0.90	156.90	5,329.3	-437.7	-2,218.4	2,261.1	0.87	0.11	
6,124.0	0.90	342.70	5,425.3	-437.7	-2,218.3	2,261.1	1.87	0.00	
6,219.0	0.00	37.20	5,520.3	-436.9	-2,218.5	2,261.1	0.95	-0.95	
6,313.0	0.60	259.30	5,614.3	-437.0	-2,219.0	2,261.6	0.64	0.64	
6,409.0	1.30	230.20	5,710.3	-437.8	-2,220.3	2,263.1	0.86	0.73	
6,504.0	2.00	256.60	5,805.3	-438.9	-2,222.8	2,265.7	1.07	0.74	
6,599.0	2.30	238.00	5,900.2	-440.3	-2,226.0	2,269.1	0.79	0.32	
6,695.0	0.60	312.10	5,996.2	-441.0	-2,228.0	2,271.2	2.30	-1.77	
6,790.0	0.40	246.30	6,091.2	-440.8	-2,228.7	2,271.9	0.60	-0.21	
6,885.0	0.80	236.70	6,186.2	-441.3	-2,229.6	2,272.8	0.43	0.42	
6,980.0	1.40	259.00	6,281.2	-441.9	-2,231.2	2,274.6	0.76	0.63	
7,075.0	1.10	250.50	6,376.1	-442.4	-2,233.2	2,276.6	0.37	-0.32	
7,169.0	1.50	259.00	6,470.1	-442.9	-2,235.3	2,278.8	0.47	0.43	
7,250.0	1.40	255.60	6,551.1	-443.4	-2,237.3	2,280.8	0.16	-0.12	Last Cathedral Survey @ 7,250' MD Projection to Bit @ 7,275'
7,275.0	1.40	255.60	6,576.1	-443.5	-2,237.9	2,281.4	0.00	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Cook Exxon 20-5BB (PB-20)
Project:	S. Piceance (Parachute)	TVD Reference:	KBE @ 5665.0ft (Nabors #M13)
Site:	PB-20 Pad	MD Reference:	KBE @ 5665.0ft (Nabors #M13)
Well:	Cook Exxon 20-5BB (PB-20)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Cook Exxon 20-5BB (PE	0.00	0.00	6,531.0	-441.0	-2,220.6	1,590,127.20	2,286,115.46	39.426390	-108.027550
- actual wellpath misses target center by 16.4ft at 7229.5ft MD (6530.6 TVD, -443.3 N, -2236.8 E)									
- Circle (radius 25.0)									
Cook Exxon 20-5BB (PE	0.00	0.00	4,492.0	-441.0	-2,220.6	1,590,127.20	2,286,115.46	39.426390	-108.027550
- actual wellpath misses target center by 5.0ft at 5190.6ft MD (4492.3 TVD, -436.8 N, -2217.8 E)									
- Circle (radius 25.0)									
Interp @ 981.6 (Cook E)	0.00	0.00	981.6	-21.6	-97.8	1,590,487.56	2,288,249.10	39.427542	-108.020035
- actual wellpath misses target center by 5.9ft at 991.4ft MD (980.0 TVD, -20.1 N, -103.3 E)									
- Point									
Cook Exxon 20-5BB (PE	0.00	0.00	4,817.0	-441.0	-2,220.6	1,590,127.20	2,286,115.46	39.426390	-108.027550
- actual wellpath misses target center by 6.0ft at 5515.6ft MD (4817.0 TVD, -438.0 N, -2225.8 E)									
- Circle (radius 25.0)									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
7,250.0	6,551.1	-443.4	-2,237.3	Last Cathedral Survey @ 7,250' MD	
7,275.0	6,576.1	-443.5	-2,237.9	Projection to Bit @ 7,275'	

Checked By: _____ Approved By: _____ Date: _____