

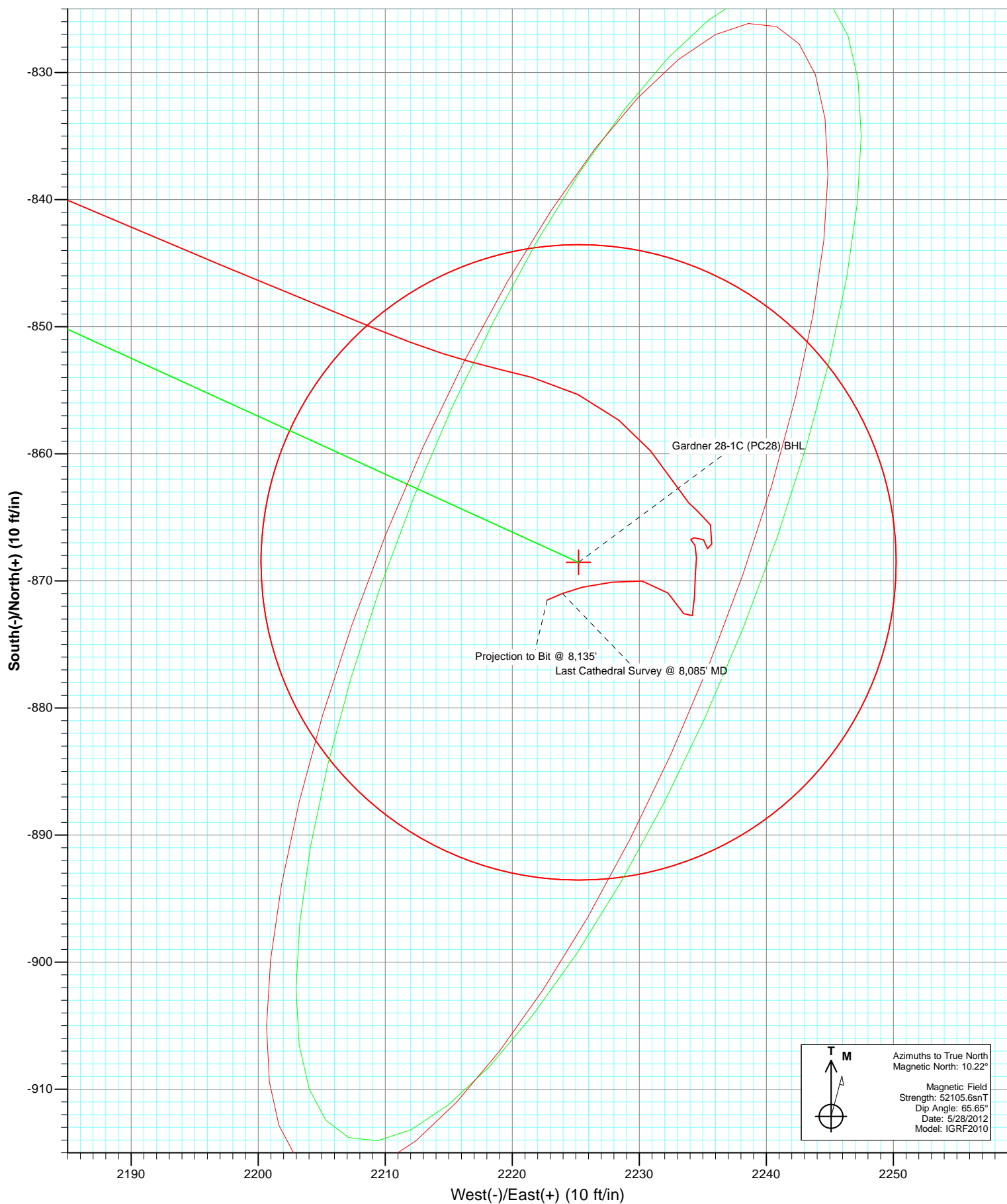
Azimuths to True North  
 Magnetic North: 10.22°

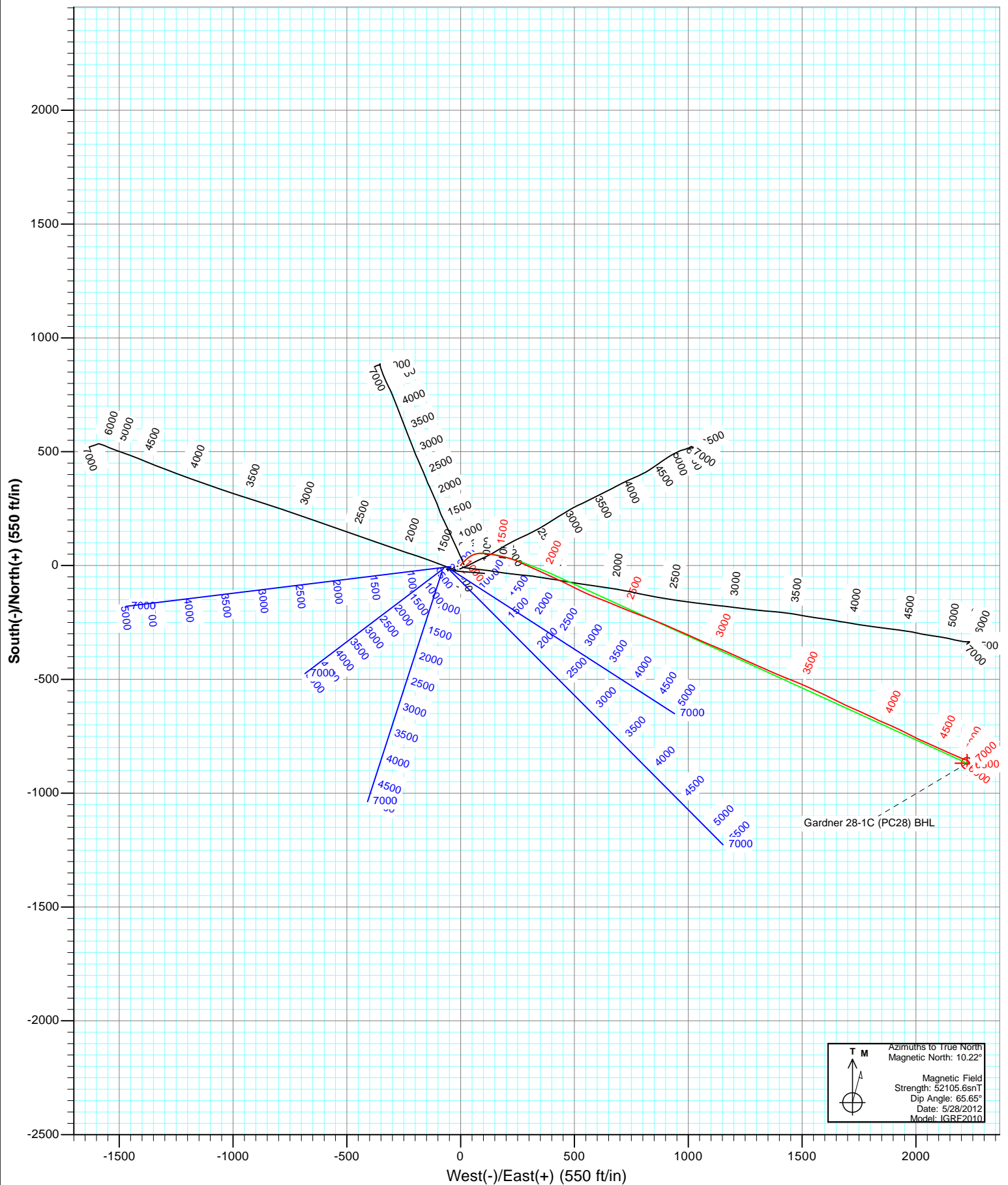
Magnetic Field  
 Strength: 52105.6snT  
 Dip Angle: 65.65°  
 Date: 5/28/2012  
 Model: IGRF2010

DD						
Gardner Federal 28-1C (was Gardner 21-14C PC28)						
125350: 170355: DN						
KBE @ 6442.0ft (Nabors M13)						
GL @ 6420.0						
North American Datum 1983						
Well Gardner Federal 28-1C (was Gardner 21-14C PC28), True North						
Type	Target	Target	Azimuth	Origin Type	N/S	E/W
Target	Gardner 28-1C (PC28) BHL	Slot	111.32	0.0	0.0	0.0
Gardner 28-1C (PC28) TGT	TVD	+N/S	+E/W	Latitude	Longitude	
Gardner 28-1C (PC28) BHL	5240.0	-868.5	2225.2	39.413220	-107.995383	
	7350.0	-868.5	2225.2	39.413220	-107.995383	



Project: S. Piceance (Parachute)  
Site: NENW Sec28-T7S-R95W (PC-28)  
Well: Gardner Federal 28-1C (was Gardner 21-14C PC28)  
Wellbore: DD  
Plan: FINAL





# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Gardner Federal 28-1C (was Gardner 21-14C
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Site:</b>	NENW Sec28-T7S-R95W (PC-28)	<b>MD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Well:</b>	Gardner Federal 28-1C (was Gardner 21-14C	<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		

<b>Site</b>	NENW Sec28-T7S-R95W (PC-28)			
<b>Site Position:</b>		<b>Northing:</b>	1,585,994.78 ft	<b>Latitude:</b> 39.415560
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,292,840.18 ft	<b>Longitude:</b> -108.003350
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.58 °

<b>Well</b>	Gardner Federal 28-1C (was Gardner 21-14C PC28)			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,586,010.41 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,292,866.33 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 6,420.0 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	5/28/2012	10.22	65.65	52,106

<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	111.32	

<b>Survey Program</b>	<b>Date</b>	6/5/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
51.0	173.0	Survey #2 (DD)	Gyro	Gyro	
204.0	8,135.0	Survey #3 (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		
51.0	0.24	41.75	51.0	0.1	0.1	0.0	0.47	0.47		
81.0	0.51	44.59	81.0	0.2	0.2	0.1	0.90	0.90		
111.0	0.88	46.68	111.0	0.5	0.5	0.3	1.24	1.23		
142.0	0.89	48.96	142.0	0.8	0.8	0.5	0.12	0.03		
173.0	0.66	51.80	173.0	1.1	1.1	0.7	0.75	-0.74		
204.0	0.40	28.10	204.0	1.3	1.3	0.8	1.08	-0.84		
235.0	0.20	325.30	235.0	1.4	1.4	0.8	1.15	-0.65		
265.0	0.10	260.60	265.0	1.4	1.3	0.7	0.60	-0.33		
296.0	0.30	214.20	296.0	1.4	1.2	0.6	0.78	0.65		
327.0	0.10	243.80	327.0	1.3	1.2	0.6	0.71	-0.65		
358.0	0.20	268.60	358.0	1.3	1.1	0.5	0.38	0.32		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Gardner Federal 28-1C (was Gardner 21-14C
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Site:</b>	NENW Sec28-T7S-R95W (PC-28)	<b>MD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Well:</b>	Gardner Federal 28-1C (was Gardner 21-14C	<b>North Reference:</b>	True
<b>Wellbore:</b>	B628)	<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
389.0	0.40	259.70	389.0	1.3	0.9	0.4	0.66	0.65	
419.0	0.40	275.50	419.0	1.3	0.7	0.2	0.37	0.00	
450.0	0.10	311.90	450.0	1.3	0.6	0.1	1.05	-0.97	
481.0	0.50	17.30	481.0	1.4	0.6	0.0	1.51	1.29	
512.0	1.10	30.60	512.0	1.8	0.8	0.1	2.01	1.94	
543.0	1.80	27.40	543.0	2.5	1.2	0.2	2.27	2.26	
573.0	2.30	33.70	573.0	3.4	1.7	0.4	1.83	1.67	
604.0	2.70	36.10	603.9	4.5	2.5	0.7	1.33	1.29	
635.0	3.60	36.90	634.9	5.9	3.5	1.1	2.91	2.90	
666.0	4.00	38.20	665.8	7.5	4.8	1.7	1.32	1.29	
697.0	4.50	43.30	696.7	9.3	6.3	2.5	2.02	1.61	
728.0	4.90	48.40	727.6	11.0	8.1	3.5	1.86	1.29	
759.0	5.30	47.10	758.5	12.9	10.1	4.8	1.34	1.29	
789.0	5.80	45.80	788.4	14.9	12.2	6.0	1.72	1.67	
819.0	6.40	45.60	818.2	17.1	14.5	7.3	2.00	2.00	
850.0	7.20	46.00	849.0	19.7	17.1	8.8	2.59	2.58	
881.0	7.80	45.60	879.7	22.5	20.0	10.5	1.94	1.94	
912.0	7.90	46.40	910.4	25.4	23.1	12.3	0.48	0.32	
941.0	8.20	48.30	939.1	28.2	26.1	14.0	1.38	1.03	
971.0	8.40	50.00	968.8	31.0	29.4	16.1	1.06	0.67	
1,003.0	8.70	51.90	1,000.5	34.0	33.1	18.4	1.29	0.94	
1,035.0	8.90	53.60	1,032.1	37.0	36.9	21.0	1.03	0.62	
1,067.0	9.10	57.40	1,063.7	39.8	41.1	23.8	1.96	0.62	
1,098.0	9.30	60.90	1,094.3	42.3	45.3	26.8	1.92	0.65	
1,130.0	9.50	62.90	1,125.9	44.8	49.9	30.2	1.20	0.62	
1,162.0	9.80	68.30	1,157.4	47.0	54.8	34.0	2.98	0.94	
1,170.0	9.70	69.70	1,165.3	47.5	56.1	35.0	3.22	-1.25	
1,264.0	11.30	78.30	1,257.7	52.1	72.5	48.6	2.38	1.70	
1,360.0	14.50	93.20	1,351.3	53.3	93.8	67.9	4.78	3.33	
1,455.0	17.80	97.00	1,442.6	50.9	120.0	93.3	3.65	3.47	
1,550.0	19.50	100.80	1,532.6	46.2	150.0	123.0	2.20	1.79	
1,645.0	21.00	102.10	1,621.7	39.6	182.3	155.4	1.65	1.58	
1,741.0	23.40	105.20	1,710.6	31.0	217.5	191.3	2.78	2.50	
1,836.0	23.80	115.40	1,797.7	17.9	253.0	229.2	4.31	0.42	
1,931.0	27.00	115.20	1,883.5	0.4	289.9	269.9	3.37	3.37	
2,027.0	29.60	112.70	1,968.0	-18.0	331.5	315.3	2.98	2.71	
2,122.0	32.50	116.00	2,049.4	-38.2	376.0	364.2	3.54	3.05	
2,217.0	36.30	113.80	2,127.7	-60.8	424.7	417.8	4.21	4.00	
2,311.0	39.20	117.50	2,202.1	-85.7	476.6	475.1	3.91	3.09	
2,406.0	40.50	115.40	2,275.0	-112.8	531.1	535.7	1.97	1.37	
2,501.0	40.30	111.50	2,347.4	-137.3	587.5	597.2	2.67	-0.21	
2,596.0	39.00	111.80	2,420.5	-159.7	643.9	657.9	1.38	-1.37	
2,692.0	39.50	112.20	2,494.9	-182.4	700.2	718.6	0.58	0.52	
2,787.0	41.00	112.10	2,567.4	-205.6	757.0	780.0	1.58	1.58	
2,882.0	39.50	109.90	2,639.9	-227.6	814.3	841.3	2.18	-1.58	
2,977.0	40.10	112.30	2,712.9	-249.5	871.0	902.1	1.74	0.63	
3,072.0	40.80	113.90	2,785.2	-273.7	927.7	963.7	1.32	0.74	
3,168.0	40.30	113.50	2,858.1	-298.8	984.9	1,026.1	0.59	-0.52	
3,263.0	40.60	114.90	2,930.4	-324.0	1,041.1	1,087.6	1.01	0.32	
3,358.0	40.60	112.40	3,002.5	-348.8	1,097.7	1,149.4	1.71	0.00	
3,454.0	40.80	113.10	3,075.3	-373.0	1,155.4	1,212.0	0.52	0.21	
3,547.0	38.70	115.20	3,146.8	-397.3	1,209.7	1,271.4	2.68	-2.26	
3,642.0	39.00	113.80	3,220.8	-422.0	1,263.9	1,330.9	0.98	0.32	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Gardner Federal 28-1C (was Gardner 21-14C)
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Site:</b>	NENW Sec28-T7S-R95W (PC-28)	<b>MD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Well:</b>	Gardner Federal 28-1C (was Gardner 21-14C	<b>North Reference:</b>	True
<b>Wellbore:</b>	B628)	<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
3,738.0	39.90	114.10	3,294.9	-446.8	1,319.7	1,391.8	0.96	0.94	
3,833.0	40.20	113.40	3,367.6	-471.4	1,375.6	1,452.9	0.57	0.32	
3,929.0	39.60	111.90	3,441.3	-495.1	1,432.4	1,514.4	1.18	-0.62	
4,024.0	40.70	112.50	3,513.9	-518.3	1,489.2	1,575.7	1.23	1.16	
4,119.0	40.60	114.80	3,586.0	-543.1	1,545.8	1,637.5	1.58	-0.11	
4,214.0	39.90	115.80	3,658.5	-569.3	1,601.3	1,698.7	1.00	-0.74	
4,309.0	39.60	116.70	3,731.5	-596.2	1,655.8	1,759.3	0.68	-0.32	
4,404.0	37.70	114.00	3,805.7	-621.6	1,709.4	1,818.4	2.67	-2.00	
4,500.0	36.60	114.40	3,882.2	-645.4	1,762.3	1,876.3	1.17	-1.15	
4,595.0	35.70	115.50	3,959.0	-669.0	1,813.1	1,932.3	1.17	-0.95	
4,690.0	34.50	113.10	4,036.7	-691.5	1,862.9	1,986.8	1.92	-1.26	
4,785.0	32.00	114.90	4,116.1	-712.7	1,910.5	2,038.8	2.83	-2.63	
4,880.0	28.70	116.80	4,198.1	-733.6	1,953.7	2,086.7	3.62	-3.47	
4,974.0	25.40	117.60	4,281.8	-753.1	1,991.7	2,129.2	3.53	-3.51	
5,069.0	24.70	112.30	4,367.9	-770.1	2,028.1	2,169.3	2.47	-0.74	
5,165.0	22.30	115.50	4,455.9	-785.5	2,063.1	2,207.5	2.83	-2.50	
5,260.0	19.20	113.10	4,544.7	-799.4	2,093.8	2,241.1	3.38	-3.26	
5,355.0	16.60	115.70	4,635.1	-811.4	2,120.4	2,270.3	2.86	-2.74	
5,450.0	13.90	112.10	4,726.8	-821.6	2,143.2	2,295.2	3.01	-2.84	
5,545.0	12.60	115.30	4,819.3	-830.3	2,163.1	2,317.0	1.57	-1.37	
5,639.0	11.50	113.00	4,911.2	-838.4	2,181.0	2,336.6	1.28	-1.17	
5,734.0	9.50	112.70	5,004.6	-845.1	2,197.0	2,353.9	2.11	-2.11	
5,829.0	6.20	112.00	5,098.7	-850.0	2,208.9	2,366.8	3.48	-3.47	
5,925.0	3.70	104.70	5,194.3	-852.8	2,216.7	2,375.1	2.68	-2.60	
6,020.0	2.30	103.30	5,289.2	-854.0	2,221.6	2,380.0	1.48	-1.47	
6,115.0	2.40	117.40	5,384.1	-855.3	2,225.2	2,383.9	0.62	0.11	
6,210.0	2.20	127.40	5,479.0	-857.4	2,228.4	2,387.6	0.47	-0.21	
6,305.0	2.00	141.20	5,574.0	-859.8	2,230.9	2,390.8	0.57	-0.21	
6,401.0	2.20	146.00	5,669.9	-862.6	2,233.0	2,393.8	0.28	0.21	
6,496.0	0.90	124.40	5,764.9	-864.5	2,234.6	2,396.0	1.48	-1.37	
6,591.0	0.90	149.10	5,859.9	-865.6	2,235.6	2,397.3	0.41	0.00	
6,686.0	1.10	198.20	5,954.8	-867.1	2,235.7	2,398.0	0.90	0.21	
6,781.0	0.60	354.40	6,049.8	-867.5	2,235.4	2,397.8	1.75	-0.53	
6,876.0	0.40	309.00	6,144.8	-866.8	2,235.1	2,397.2	0.45	-0.21	
6,971.0	0.60	264.00	6,239.8	-866.6	2,234.3	2,396.5	0.45	0.21	
7,067.0	0.30	106.80	6,335.8	-866.7	2,234.1	2,396.3	0.92	-0.31	
7,162.0	0.50	165.30	6,430.8	-867.2	2,234.4	2,396.8	0.45	0.21	
7,257.0	0.70	179.10	6,525.8	-868.2	2,234.5	2,397.2	0.26	0.21	
7,353.0	0.90	187.90	6,621.8	-869.5	2,234.4	2,397.6	0.24	0.21	
7,448.0	1.10	177.50	6,716.8	-871.2	2,234.4	2,398.2	0.28	0.21	
7,544.0	0.80	198.40	6,812.8	-872.7	2,234.2	2,398.6	0.47	-0.31	
7,639.0	1.10	329.20	6,907.8	-872.6	2,233.5	2,397.9	1.82	0.32	
7,733.0	1.40	317.40	7,001.8	-871.0	2,232.3	2,396.2	0.42	0.32	
7,829.0	1.50	273.70	7,097.7	-870.0	2,230.2	2,393.9	1.13	0.10	
7,924.0	1.40	261.20	7,192.7	-870.1	2,227.8	2,391.7	0.35	-0.11	
8,020.0	1.40	259.40	7,288.7	-870.5	2,225.5	2,389.7	0.05	0.00	
8,085.0	1.50	246.50	7,353.7	-871.0	2,224.0	2,388.4	0.52	0.15	Last Cathedral Survey @ 8,085' MD Projection to Bit @ 8,135'
8,135.0	1.50	246.50	7,403.6	-871.5	2,222.8	2,387.5	0.00	0.00	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Gardner Federal 28-1C (was Gardner 21-14C
<b>Project:</b>	S. Piceance (Parachute)	<b>TVD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Site:</b>	NENW Sec28-T7S-R95W (PC-28)	<b>MD Reference:</b>	KBE @ 6442.0ft (Nabors M13)
<b>Well:</b>	Gardner Federal 28-1C (was Gardner 21-14C	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD28)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Gardner 28-1C (PC28) E	0.00	358.43	7,350.0	-868.5	2,225.2	1,585,080.90	2,295,066.78	39.413220	-107.995383
- actual wellpath misses target center by 2.7ft at 8081.3ft MD (7350.0 TVD, -870.9 N, 2224.0 E)									
- Circle (radius 25.0)									
Gardner 28-1C (PC28) 1	0.00	358.43	5,240.0	-868.5	2,225.2	1,585,080.90	2,295,066.78	39.413220	-107.995383
- actual wellpath misses target center by 16.2ft at 5971.3ft MD (5240.5 TVD, -853.4 N, 2219.4 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
8,085.0	7,353.7	-871.0	2,224.0	Last Cathedral Survey @ 8,085' MD	
8,135.0	7,403.6	-871.5	2,222.8	Projection to Bit @ 8,135'	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_