

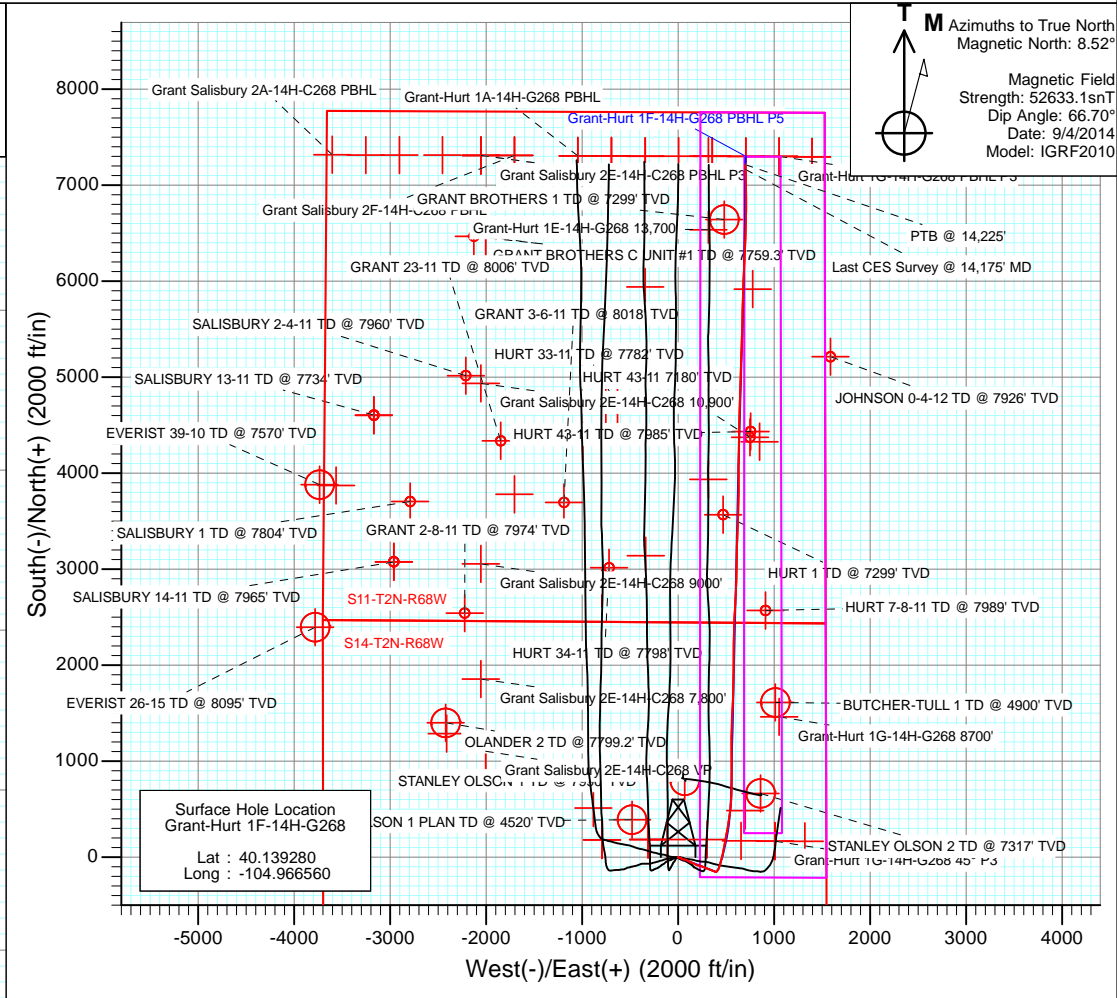
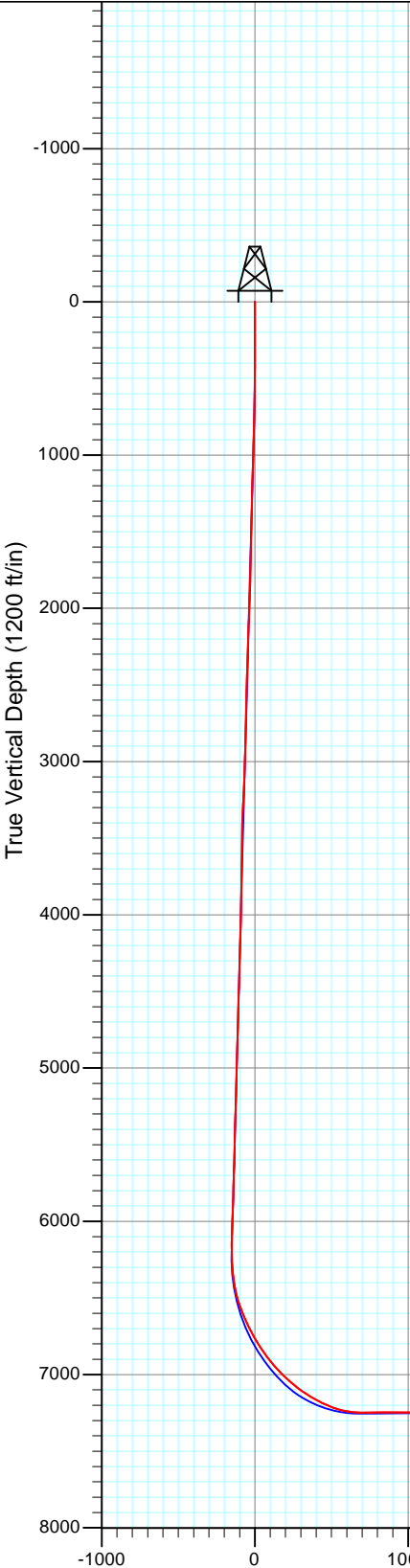


Project: DJ Wattenberg
 Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)
 Well: Grant-Hurt 1F-14H-G268
 Wellbore: Hz
 Design: FINAL



FINAL
 Grant-Hurt 1F-14H-G268
 320255 145235; 322055 145295LR
 32' KB @ 4920.0ft (Patt 326)
 Ground Elevation @ 4888.0
 North American Datum 1983
 Well Grant-Hurt 1F-14H-G268, True North

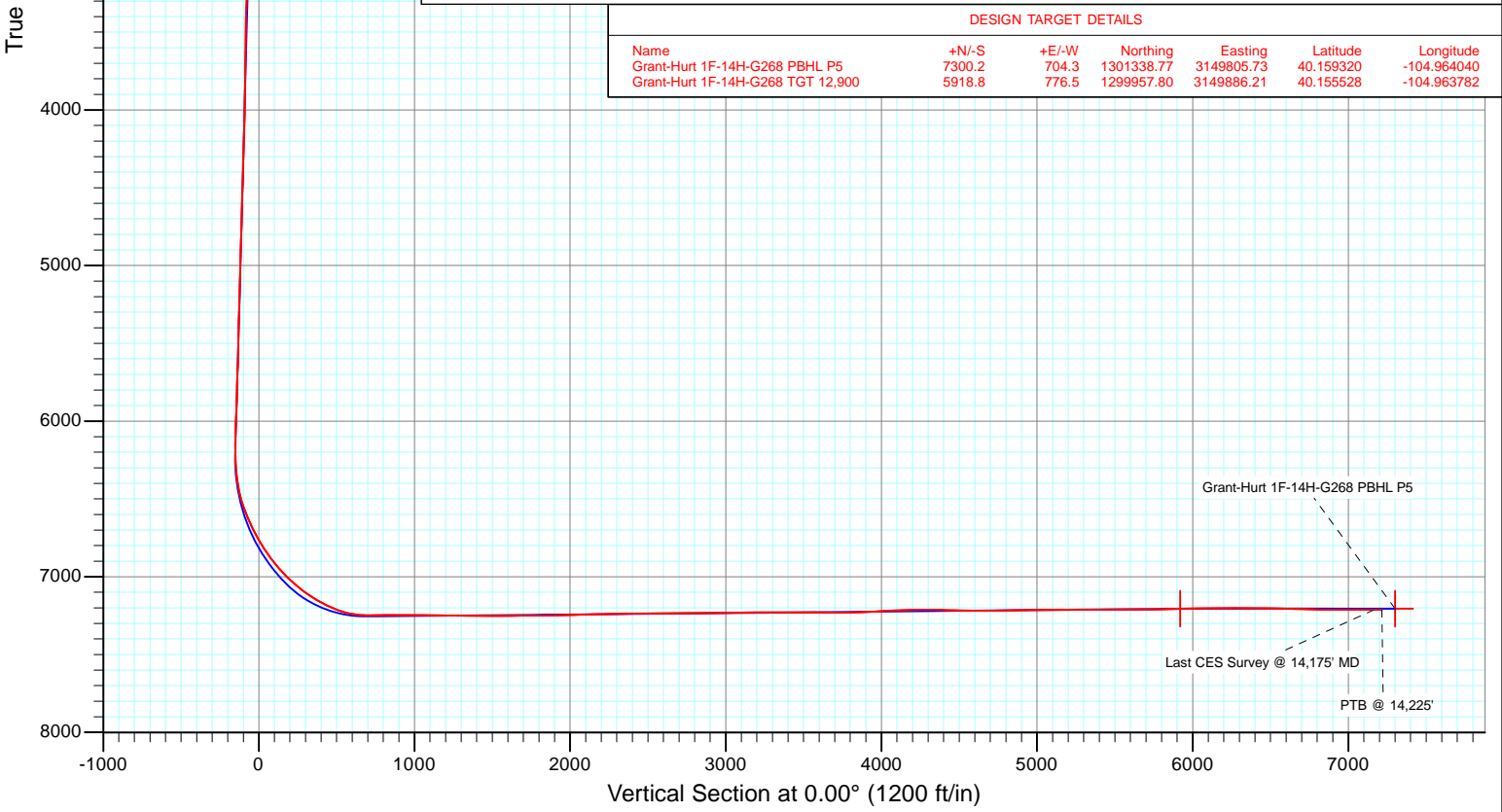
M Azimuths to True North
 Magnetic North: 8.52°
 Magnetic Field
 Strength: 52633.1snT
 Dip Angle: 66.70°
 Date: 9/4/2014
 Model: IGRF2010



Surface Hole Location
 Grant-Hurt 1F-14H-G268
 Lat : 40.139280
 Long : -104.966560

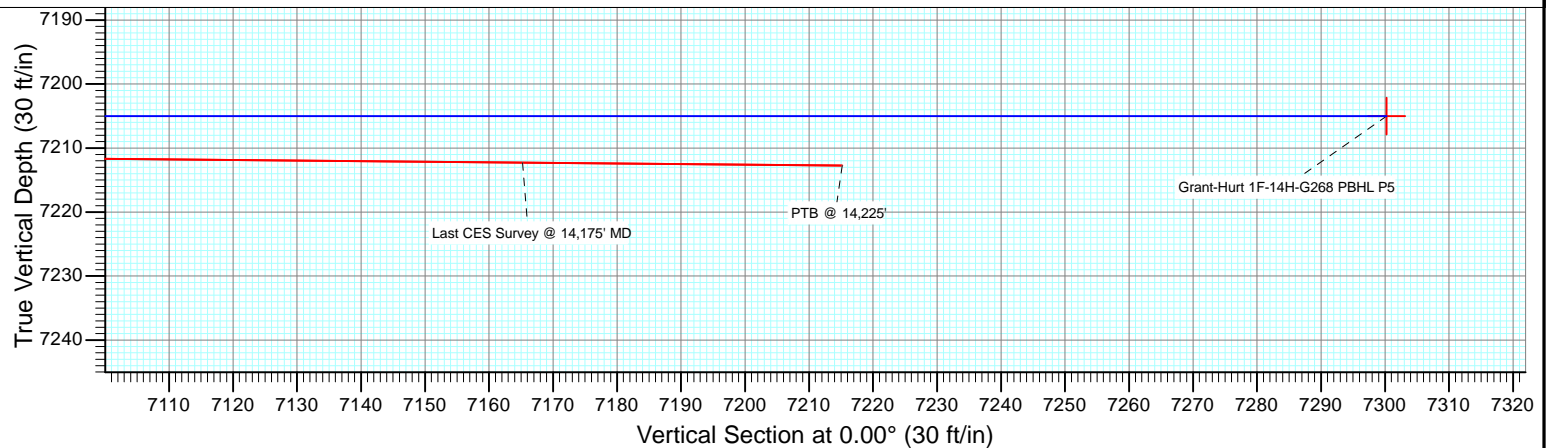
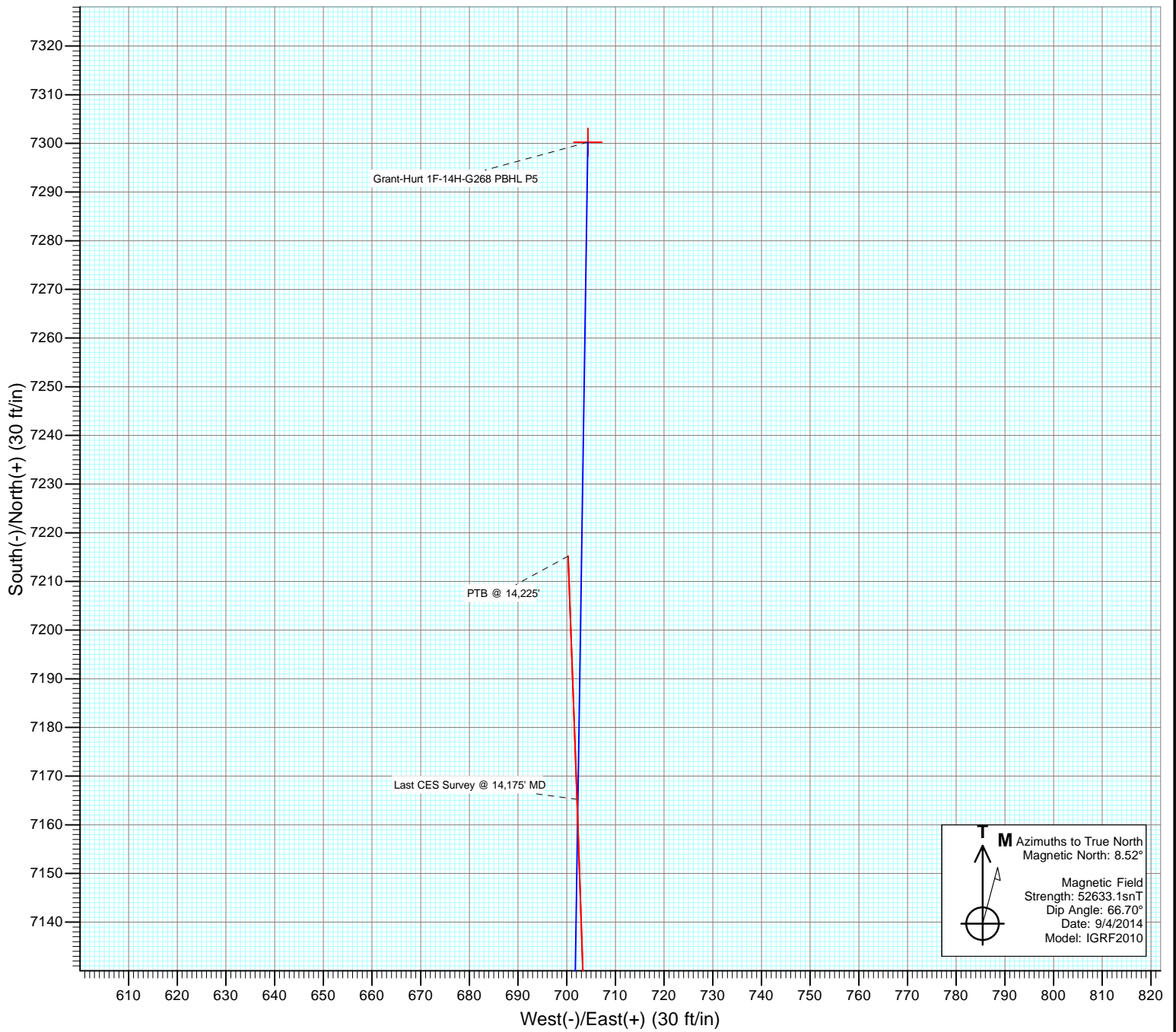
DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Grant-Hurt 1F-14H-G268 PBHL P5	7300.2	704.3	1301338.77	3149805.73	40.159320	-104.964040
Grant-Hurt 1F-14H-G268 TGT 12,900	5918.8	776.5	1299957.80	3149886.21	40.155528	-104.963782





Project: DJ Wattenberg
Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)
Well: Grant-Hurt 1F-14H-G268
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Grant-Hurt 1F-14H-G268
Project: DJ Wattenberg	TVD Reference: 32' KB @ 4920.0ft (Patt 326)
Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference: 32' KB @ 4920.0ft (Patt 326)
Well: Grant-Hurt 1F-14H-G268	North Reference: True
Wellbore: Hz	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 S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)				
Site Position:	Northing:	1,295,686.81 ft	Latitude:	40.143850
From: Lat/Long	Easting:	3,147,060.98 ft	Longitude:	-104.973980
Position Uncertainty: 0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.34 °

Well Grant-Hurt 1F-14H-G268				
Well Position	+N/-S	0.0 ft	Northing:	1,294,034.44 ft
	+E/-W	0.0 ft	Easting:	3,149,145.32 ft
			Longitude:	-104.966560
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	4,888.0 ft

Wellbore Hz					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/4/2014	8.52	66.70	52,633

Design FINAL				
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	0.00

Survey Program		Date 9/19/2014
From (ft)	To (ft)	Survey (Wellbore)
146.0	14,225.0	Survey #1 (Hz)
		Tool Name Geolink MWD
		Description 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	
146.0	0.10	355.70	146.0	0.1	0.0	0.1	0.07	0.07	
241.0	0.40	344.00	241.0	0.5	-0.1	0.5	0.32	0.32	
335.0	0.40	203.60	335.0	0.5	-0.3	0.5	0.80	0.00	
430.0	0.80	153.80	430.0	-0.4	-0.2	-0.4	0.65	0.42	
525.0	1.80	102.80	525.0	-1.3	1.6	-1.3	1.51	1.05	
620.0	3.70	101.30	619.9	-2.2	6.0	-2.2	2.00	2.00	
714.0	4.70	95.80	713.6	-3.2	12.8	-3.2	1.15	1.06	
809.0	3.90	115.10	808.3	-5.0	19.6	-5.0	1.73	-0.84	
840.0	3.90	117.50	839.3	-5.9	21.5	-5.9	0.53	0.00	
895.0	4.20	117.40	894.1	-7.7	25.0	-7.7	0.55	0.55	
990.0	4.70	116.90	988.8	-11.0	31.5	-11.0	0.53	0.53	
1,085.0	3.90	114.30	1,083.6	-14.1	38.0	-14.1	0.87	-0.84	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant-Hurt 1F-14H-G268
Project:	DJ Wattenberg	TD Reference:	32' KB @ 4920.0ft (Patt 326)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MVD Reference:	32' KB @ 4920.0ft (Patt 326)
Well:	Grant-Hurt 1F-14H-G268	North Reference:	True
Wellbore:	Hz	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
1,180.0	3.80	114.40	1,178.4	-16.8	43.8	-16.8	0.11	-0.11	
1,275.0	3.80	115.40	1,273.2	-19.4	49.5	-19.4	0.07	0.00	
1,370.0	3.60	114.30	1,368.0	-22.0	55.0	-22.0	0.22	-0.21	
1,465.0	5.50	97.10	1,462.7	-23.8	62.3	-23.8	2.44	2.00	
1,557.0	4.70	89.50	1,554.3	-24.3	70.4	-24.3	1.14	-0.87	
1,649.0	5.20	109.50	1,646.0	-25.7	78.1	-25.7	1.94	0.54	
1,741.0	5.00	107.50	1,737.6	-28.3	85.9	-28.3	0.29	-0.22	
1,833.0	3.60	128.90	1,829.3	-31.3	91.9	-31.3	2.29	-1.52	
1,925.0	3.30	122.50	1,921.2	-34.5	96.4	-34.5	0.53	-0.33	
2,017.0	3.20	121.50	2,013.0	-37.3	100.9	-37.3	0.12	-0.11	
2,109.0	4.90	117.20	2,104.8	-40.4	106.5	-40.4	1.88	1.85	
2,200.0	4.90	114.30	2,195.5	-43.8	113.5	-43.8	0.27	0.00	
2,293.0	4.50	115.70	2,288.1	-47.0	120.4	-47.0	0.45	-0.43	
2,385.0	4.50	113.70	2,379.9	-50.0	127.0	-50.0	0.17	0.00	
2,478.0	4.20	111.40	2,472.6	-52.7	133.5	-52.7	0.37	-0.32	
2,570.0	4.00	110.50	2,564.4	-55.1	139.7	-55.1	0.23	-0.22	
2,662.0	3.80	110.30	2,656.1	-57.3	145.5	-57.3	0.22	-0.22	
2,753.0	3.40	112.80	2,747.0	-59.4	150.8	-59.4	0.47	-0.44	
2,845.0	3.10	113.90	2,838.8	-61.4	155.6	-61.4	0.33	-0.33	
2,940.0	4.70	103.00	2,933.6	-63.3	161.8	-63.3	1.85	1.68	
3,035.0	4.70	122.60	3,028.3	-66.3	168.8	-66.3	1.68	0.00	
3,130.0	4.40	123.00	3,123.0	-70.4	175.2	-70.4	0.32	-0.32	
3,225.0	5.10	120.40	3,217.7	-74.5	181.9	-74.5	0.77	0.74	
3,320.0	5.00	121.80	3,312.3	-78.8	189.0	-78.8	0.17	-0.11	
3,414.0	5.30	104.80	3,405.9	-82.1	196.7	-82.1	1.65	0.32	
3,509.0	4.70	103.10	3,500.5	-84.1	204.7	-84.1	0.65	-0.63	
3,604.0	3.90	101.80	3,595.3	-85.6	211.7	-85.6	0.85	-0.84	
3,698.0	2.90	102.80	3,689.1	-86.8	217.1	-86.8	1.07	-1.06	
3,792.0	3.70	91.90	3,783.0	-87.5	222.5	-87.5	1.08	0.85	
3,887.0	4.70	106.80	3,877.7	-88.7	229.3	-88.7	1.55	1.05	
3,982.0	4.40	109.20	3,972.4	-91.0	236.5	-91.0	0.37	-0.32	
4,076.0	4.10	116.30	4,066.1	-93.7	242.9	-93.7	0.64	-0.32	
4,171.0	4.80	104.40	4,160.9	-96.2	249.8	-96.2	1.22	0.74	
4,266.0	4.60	108.20	4,255.5	-98.3	257.2	-98.3	0.39	-0.21	
4,361.0	4.20	104.20	4,350.3	-100.4	264.2	-100.4	0.53	-0.42	
4,456.0	4.70	115.70	4,445.0	-102.9	271.1	-102.9	1.07	0.53	
4,550.0	4.70	113.60	4,538.7	-106.1	278.1	-106.1	0.18	0.00	
4,645.0	4.20	113.10	4,633.4	-109.1	284.9	-109.1	0.53	-0.53	
4,740.0	3.30	114.60	4,728.2	-111.6	290.6	-111.6	0.95	-0.95	
4,835.0	3.70	116.00	4,823.0	-114.1	295.8	-114.1	0.43	0.42	
4,929.0	3.40	113.90	4,916.8	-116.5	301.1	-116.5	0.35	-0.32	
5,024.0	4.90	111.50	5,011.6	-119.1	307.4	-119.1	1.59	1.58	
5,118.0	4.40	109.50	5,105.3	-121.8	314.6	-121.8	0.56	-0.53	
5,213.0	4.60	113.90	5,200.0	-124.6	321.5	-124.6	0.42	0.21	
5,308.0	4.10	109.40	5,294.7	-127.2	328.2	-127.2	0.64	-0.53	
5,402.0	4.30	106.40	5,388.4	-129.4	334.7	-129.4	0.32	0.21	
5,497.0	3.30	103.20	5,483.2	-131.0	340.8	-131.0	1.08	-1.05	
5,591.0	3.50	119.70	5,577.1	-133.0	345.9	-133.0	1.06	0.21	
5,686.0	4.60	118.00	5,671.8	-136.3	351.8	-136.3	1.16	1.16	
5,780.0	5.40	111.20	5,765.5	-139.6	359.2	-139.6	1.06	0.85	
5,875.0	4.30	106.60	5,860.1	-142.3	366.8	-142.3	1.23	-1.16	
5,970.0	5.20	118.00	5,954.8	-145.3	374.0	-145.3	1.37	0.95	
6,064.0	3.90	112.90	6,048.5	-148.5	380.8	-148.5	1.45	-1.38	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant-Hurt 1F-14H-G268
Project:	DJ Wattenberg	TD Reference:	32' KB @ 4920.0ft (Patt 326)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MVD Reference:	32' KB @ 4920.0ft (Patt 326)
Well:	Grant-Hurt 1F-14H-G268	North Reference:	True
Wellbore:	Hz	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
6,158.0	4.60	101.10	6,142.2	-150.5	387.4	-150.5	1.19	0.74	
6,205.0	4.80	91.40	6,189.1	-150.9	391.2	-150.9	1.74	0.43	
6,253.0	5.80	79.00	6,236.9	-150.5	395.6	-150.5	3.16	2.08	
6,300.0	6.50	60.70	6,283.6	-148.8	400.3	-148.8	4.41	1.49	
6,347.0	7.80	43.70	6,330.3	-145.1	404.8	-145.1	5.25	2.77	
6,394.0	9.80	32.80	6,376.7	-139.5	409.1	-139.5	5.52	4.26	
6,441.0	11.50	29.30	6,422.9	-132.0	413.6	-132.0	3.87	3.62	
6,488.0	14.20	27.80	6,468.7	-122.8	418.6	-122.8	5.79	5.74	
6,535.0	17.00	23.80	6,514.0	-111.4	424.1	-111.4	6.38	5.96	
6,582.0	21.40	18.40	6,558.4	-97.0	429.5	-97.0	10.09	9.36	
6,629.0	24.40	16.90	6,601.6	-79.6	435.1	-79.6	6.50	6.38	
6,676.0	25.50	15.20	6,644.3	-60.5	440.5	-60.5	2.79	2.34	
6,722.0	26.10	14.50	6,685.7	-41.2	445.7	-41.2	1.46	1.30	
6,769.0	28.00	14.30	6,727.5	-20.5	451.0	-20.5	4.05	4.04	
6,816.0	30.90	14.60	6,768.5	1.9	456.7	1.9	6.18	6.17	
6,863.0	33.30	13.10	6,808.3	26.1	462.7	26.1	5.38	5.11	
6,911.0	35.60	11.30	6,847.8	52.7	468.4	52.7	5.24	4.79	
6,958.0	37.30	10.80	6,885.6	80.1	473.8	80.1	3.67	3.62	
7,004.0	39.80	10.60	6,921.6	108.2	479.1	108.2	5.44	5.43	
7,051.0	43.10	10.50	6,956.8	138.8	484.8	138.8	7.02	7.02	
7,099.0	45.50	10.80	6,991.2	171.8	491.0	171.8	5.02	5.00	
7,146.0	47.60	10.60	7,023.5	205.3	497.3	205.3	4.48	4.47	
7,192.0	50.20	10.30	7,053.8	239.4	503.6	239.4	5.67	5.65	
7,239.0	52.20	10.30	7,083.2	275.4	510.2	275.4	4.26	4.26	
7,286.0	54.70	10.10	7,111.2	312.6	516.9	312.6	5.33	5.32	
7,333.0	58.90	8.50	7,136.9	351.4	523.2	351.4	9.38	8.94	
7,380.0	61.80	8.80	7,160.2	391.8	529.3	391.8	6.20	6.17	
7,427.0	63.40	8.00	7,181.8	433.0	535.4	433.0	3.72	3.40	
7,474.0	66.80	6.90	7,201.6	475.3	541.0	475.3	7.54	7.23	
7,521.0	71.10	6.50	7,218.5	518.9	546.1	518.9	9.18	9.15	
7,568.0	76.50	5.00	7,231.6	563.7	550.6	563.7	11.89	11.49	
7,615.0	81.20	3.10	7,240.7	609.7	553.8	609.7	10.76	10.00	
7,662.0	85.80	1.50	7,246.0	656.4	555.7	656.4	10.35	9.79	
7,730.0	89.50	0.40	7,248.8	724.3	556.8	724.3	5.68	5.44	
7,802.0	91.00	0.30	7,248.4	796.3	557.3	796.3	2.09	2.08	
7,894.0	90.30	0.00	7,247.4	888.3	557.5	888.3	0.83	-0.76	
7,986.0	90.70	359.50	7,246.6	980.3	557.1	980.3	0.70	0.43	
8,078.0	89.70	359.50	7,246.3	1,072.3	556.3	1,072.3	1.09	-1.09	
8,170.0	88.60	359.70	7,247.6	1,164.3	555.7	1,164.3	1.22	-1.20	
8,262.0	88.80	0.70	7,249.7	1,256.2	556.0	1,256.2	1.11	0.22	
8,354.0	89.50	2.40	7,251.1	1,348.2	558.5	1,348.2	2.00	0.76	
8,446.0	89.40	1.90	7,252.0	1,440.1	561.9	1,440.1	0.55	-0.11	
8,538.0	90.60	2.70	7,252.0	1,532.0	565.6	1,532.0	1.57	1.30	
8,630.0	91.50	2.90	7,250.3	1,623.9	570.1	1,623.9	1.00	0.98	
8,722.0	89.90	1.40	7,249.2	1,715.8	573.6	1,715.8	2.38	-1.74	
8,814.0	89.70	0.70	7,249.5	1,807.8	575.2	1,807.8	0.79	-0.22	
8,906.0	91.60	1.10	7,248.4	1,899.8	576.7	1,899.8	2.11	2.07	
8,998.0	91.50	0.80	7,246.0	1,991.8	578.2	1,991.8	0.34	-0.11	
9,090.0	91.30	359.70	7,243.7	2,083.7	578.6	2,083.7	1.21	-0.22	
9,182.0	91.90	0.30	7,241.1	2,175.7	578.6	2,175.7	0.92	0.65	
9,273.0	90.90	1.00	7,238.9	2,266.7	579.6	2,266.7	1.34	-1.10	
9,366.0	90.90	1.80	7,237.5	2,359.6	581.9	2,359.6	0.86	0.00	
9,458.0	90.30	1.90	7,236.5	2,451.6	584.9	2,451.6	0.66	-0.65	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant-Hurt 1F-14H-G268
Project:	DJ Wattenberg	TVD Reference:	32' KB @ 4920.0ft (Patt 326)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	32' KB @ 4920.0ft (Patt 326)
Well:	Grant-Hurt 1F-14H-G268	North Reference:	True
Wellbore:	Hz	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
9,551.0	90.00	2.90	7,236.3	2,544.5	588.8	2,544.5	1.12	-0.32	
9,643.0	90.60	4.20	7,235.8	2,636.3	594.5	2,636.3	1.56	0.65	
9,735.0	91.30	3.20	7,234.2	2,728.1	600.4	2,728.1	1.33	0.76	
9,826.0	90.40	2.00	7,232.9	2,819.0	604.5	2,819.0	1.65	-0.99	
9,918.0	90.70	1.60	7,232.0	2,911.0	607.4	2,911.0	0.54	0.33	
10,013.0	90.70	1.10	7,230.9	3,005.9	609.7	3,005.9	0.53	0.00	
10,108.0	90.30	0.50	7,230.0	3,100.9	611.0	3,100.9	0.76	-0.42	
10,203.0	90.30	1.40	7,229.5	3,195.9	612.6	3,195.9	0.95	0.00	
10,298.0	90.30	2.50	7,229.0	3,290.8	615.8	3,290.8	1.16	0.00	
10,393.0	90.00	1.70	7,228.8	3,385.8	619.3	3,385.8	0.90	-0.32	
10,488.0	89.90	2.10	7,228.9	3,480.7	622.4	3,480.7	0.43	-0.11	
10,583.0	89.80	2.00	7,229.1	3,575.7	625.8	3,575.7	0.15	-0.11	
10,677.0	89.50	1.50	7,229.7	3,669.6	628.7	3,669.6	0.62	-0.32	
10,772.0	90.50	0.50	7,229.7	3,764.6	630.4	3,764.6	1.49	1.05	
10,867.0	91.50	0.00	7,228.0	3,859.6	630.8	3,859.6	1.18	1.05	
10,962.0	93.20	359.40	7,224.1	3,954.5	630.3	3,954.5	1.90	1.79	
11,056.0	93.50	359.90	7,218.6	4,048.3	629.7	4,048.3	0.62	0.32	
11,151.0	91.80	1.00	7,214.2	4,143.2	630.5	4,143.2	2.13	-1.79	
11,246.0	90.50	1.40	7,212.3	4,238.2	632.4	4,238.2	1.43	-1.37	
11,341.0	89.50	0.30	7,212.3	4,333.1	633.9	4,333.1	1.56	-1.05	
11,436.0	88.20	0.10	7,214.2	4,428.1	634.2	4,428.1	1.38	-1.37	
11,531.0	88.70	1.30	7,216.8	4,523.1	635.3	4,523.1	1.37	0.53	
11,626.0	89.20	2.50	7,218.6	4,618.0	638.5	4,618.0	1.37	0.53	
11,720.0	90.90	2.50	7,218.5	4,711.9	642.6	4,711.9	1.81	1.81	
11,816.0	91.60	1.70	7,216.4	4,807.8	646.1	4,807.8	1.11	0.73	
11,911.0	90.20	1.70	7,214.9	4,902.8	648.9	4,902.8	1.47	-1.47	
12,006.0	90.40	0.90	7,214.4	4,997.7	651.1	4,997.7	0.87	0.21	
12,101.0	91.40	1.50	7,212.9	5,092.7	653.1	5,092.7	1.23	1.05	
12,195.0	91.00	2.30	7,210.9	5,186.6	656.2	5,186.6	0.95	-0.43	
12,289.0	89.30	2.30	7,210.7	5,280.6	660.0	5,280.6	1.81	-1.81	
12,385.0	89.40	1.80	7,211.8	5,376.5	663.4	5,376.5	0.53	0.10	
12,479.0	90.90	1.30	7,211.5	5,470.5	665.9	5,470.5	1.68	1.60	
12,574.0	89.80	1.80	7,210.9	5,565.4	668.5	5,565.4	1.27	-1.16	
12,668.0	89.80	1.00	7,211.3	5,659.4	670.8	5,659.4	0.85	0.00	
12,763.0	91.30	2.60	7,210.4	5,754.3	673.8	5,754.3	2.31	1.58	
12,858.0	92.20	2.10	7,207.5	5,849.2	677.7	5,849.2	1.08	0.95	
12,952.0	91.40	1.80	7,204.5	5,943.1	680.9	5,943.1	0.91	-0.85	
13,047.0	90.00	2.10	7,203.3	6,038.1	684.1	6,038.1	1.51	-1.47	
13,142.0	91.10	1.20	7,202.4	6,133.0	686.8	6,133.0	1.50	1.16	
13,236.0	90.20	2.30	7,201.4	6,227.0	689.7	6,227.0	1.51	-0.96	
13,331.0	89.60	3.20	7,201.5	6,321.9	694.3	6,321.9	1.14	-0.63	
13,426.0	88.70	3.00	7,202.9	6,416.7	699.4	6,416.7	0.97	-0.95	
13,521.0	89.40	2.10	7,204.5	6,511.6	703.6	6,511.6	1.20	0.74	
13,616.0	89.80	2.30	7,205.2	6,606.5	707.3	6,606.5	0.47	0.42	
13,710.0	87.90	0.90	7,207.1	6,700.5	709.9	6,700.5	2.51	-2.02	
13,805.0	88.00	359.60	7,210.5	6,795.4	710.3	6,795.4	1.37	0.11	
13,900.0	89.80	359.10	7,212.3	6,890.4	709.2	6,890.4	1.97	1.89	
13,995.0	90.80	358.70	7,211.8	6,985.3	707.4	6,985.3	1.13	1.05	
14,090.0	89.50	358.30	7,211.5	7,080.3	704.9	7,080.3	1.43	-1.37	
14,175.0	89.50	357.90	7,212.3	7,165.2	702.1	7,165.2	0.47	0.00	Last CES Survey @ 14,175' MD
14,225.0	89.50	357.90	7,212.7	7,215.2	700.3	7,215.2	0.00	0.00	PTB @ 14,225'

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Grant-Hurt 1F-14H-G268
Project: DJ Wattenberg	TVD Reference: 32' KB @ 4920.0ft (Patt 326)
Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference: 32' KB @ 4920.0ft (Patt 326)
Well: Grant-Hurt 1F-14H-G268	North Reference: True
Wellbore: Hz	Survey Calculation Method: Minimum Curvature
Design: FINAL	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									
Grant-Hurt 1F-14H-G268 - survey misses target center by 96.4ft at 12931.0ft MD (7205.1 TVD, 5922.1 N, 680.2 E) - Point	0.00	0.00	7,205.0	5,918.8	776.5	1,299,957.80	3,149,886.21	40.155528	-104.963782
Grant-Hurt 1F-14H-G268 - survey misses target center by 85.5ft at 14225.0ft MD (7212.7 TVD, 7215.2 N, 700.3 E) - Point	0.00	0.00	7,205.0	7,300.2	704.3	1,301,338.77	3,149,805.73	40.159320	-104.964040
Plan @ 7180.0 (Grant-H - survey misses target center by 214.4ft at 11339.0ft MD (7212.3 TVD, 4331.2 N, 633.8 E) - Point	0.00	0.00	7,220.0	4,328.0	848.0	1,298,367.47	3,149,967.31	40.151161	-104.963526
Grant-Hurt 1F-14H-G268 - survey misses target center by 161.9ft at 7152.8ft MD (7028.1 TVD, 210.3 N, 498.3 E) - Point	0.00	0.00	7,041.0	170.0	654.5	1,294,208.38	3,149,798.82	40.139747	-104.964219
Grant-Hurt 1F-14H-G268 - survey misses target center by 157.0ft at 7496.0ft MD (7209.9 TVD, 495.6 N, 543.4 E) - Point	0.00	0.00	7,187.0	486.2	698.4	1,294,524.86	3,149,840.77	40.140615	-104.964062
Grant-Hurt 1F-14H-G268 - survey misses target center by 91.2ft at 14225.0ft MD (7212.7 TVD, 7215.2 N, 700.3 E) - Point	0.00	0.00	7,180.0	7,300.2	704.3	1,301,338.77	3,149,805.73	40.159320	-104.964040

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
14,175.0	7,212.3	7,165.2	702.1	Last CES Survey @ 14,175' MD
14,225.0	7,212.7	7,215.2	700.3	PTB @ 14,225'

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)

Grant-Hurt 1F-14H-G268

Hz

Survey: Survey #1

Survey Report - Geographic

19 September, 2014

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Grant-Hurt 1F-14H-G268
Project: DJ Wattenberg	TVD Reference: 32' KB @ 4920.0ft (Patt 326)
Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference: 32' KB @ 4920.0ft (Patt 326)
Well: Grant-Hurt 1F-14H-G268	North Reference: True
Wellbore: Hz	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 S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)				
Site Position:	Northing:	1,295,686.81 ft	Latitude:	40.143850
From: Lat/Long	Easting:	3,147,060.98 ft	Longitude:	-104.973980
Position Uncertainty: 0.0 ft	Slot Radius: 13.200 in		Grid Convergence:	0.34 °

Well Grant-Hurt 1F-14H-G268				
Well Position	+N/-S	0.0 ft	Northing:	1,294,034.44 ft
	+E/-W	0.0 ft	Easting:	3,149,145.32 ft
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Latitude:	40.139280
			Longitude:	-104.966560
			Ground Level:	4,888.0 ft

Wellbore Hz					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/4/2014	8.52	66.70	52,633

Design FINAL					
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0		0.00

Survey Program		Date 9/19/2014
From (ft)	To (ft)	Survey (Wellbore)
146.0	14,225.0	Survey #1 (Hz)
		Tool Name
		Geolink MWD
		Description
		Geolink MWD

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,294,034.44	3,149,145.32	40.139280	-104.966560	
146.0	0.10	355.70	146.0	0.1	0.0	1,294,034.57	3,149,145.31	40.139280	-104.966560	
241.0	0.40	344.00	241.0	0.5	-0.1	1,294,034.97	3,149,145.21	40.139281	-104.966561	
335.0	0.40	203.60	335.0	0.5	-0.3	1,294,034.98	3,149,144.98	40.139282	-104.966561	
430.0	0.80	153.80	430.0	-0.4	-0.2	1,294,034.09	3,149,145.15	40.139279	-104.966561	
525.0	1.80	102.80	525.0	-1.3	1.6	1,294,033.17	3,149,146.90	40.139277	-104.966555	
620.0	3.70	101.30	619.9	-2.2	6.0	1,294,032.27	3,149,151.37	40.139274	-104.966539	
714.0	4.70	95.80	713.6	-3.2	12.8	1,294,031.32	3,149,158.18	40.139271	-104.966514	
809.0	3.90	115.10	808.3	-5.0	19.6	1,294,029.60	3,149,164.99	40.139266	-104.966490	
840.0	3.90	117.50	839.3	-5.9	21.5	1,294,028.68	3,149,166.89	40.139264	-104.966483	
895.0	4.20	117.40	894.1	-7.7	25.0	1,294,026.91	3,149,170.34	40.139259	-104.966471	
990.0	4.70	116.90	988.8	-11.0	31.5	1,294,023.59	3,149,176.92	40.139250	-104.966447	

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant-Hurt 1F-14H-G268
Project:	DJ Wattenberg	TVD Reference:	32' KB @ 4920.0ft (Patt 326)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	32' KB @ 4920.0ft (Patt 326)
Well:	Grant-Hurt 1F-14H-G268	North Reference:	True
Wellbore:	Hz	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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
1,085.0	3.90	114.30	1,083.6	-14.1	38.0	1,294,020.53	3,149,183.36	40.139241	-104.966425	
1,180.0	3.80	114.40	1,178.4	-16.8	43.8	1,294,017.94	3,149,189.18	40.139234	-104.966404	
1,275.0	3.80	115.40	1,273.2	-19.4	49.5	1,294,015.32	3,149,194.91	40.139227	-104.966383	
1,370.0	3.60	114.30	1,368.0	-22.0	55.0	1,294,012.78	3,149,200.49	40.139220	-104.966363	
1,465.0	5.50	97.10	1,462.7	-23.8	62.3	1,294,011.03	3,149,207.74	40.139215	-104.966338	
1,557.0	4.70	89.50	1,554.3	-24.3	70.4	1,294,010.57	3,149,215.88	40.139213	-104.966308	
1,649.0	5.20	109.50	1,646.0	-25.7	78.1	1,294,009.26	3,149,223.59	40.139210	-104.966281	
1,741.0	5.00	107.50	1,737.6	-28.3	85.9	1,294,006.71	3,149,231.36	40.139202	-104.966253	
1,833.0	3.60	128.90	1,829.3	-31.3	91.9	1,294,003.72	3,149,237.45	40.139194	-104.966231	
1,925.0	3.30	122.50	1,921.2	-34.5	96.4	1,294,000.51	3,149,241.95	40.139185	-104.966215	
2,017.0	3.20	121.50	2,013.0	-37.3	100.9	1,293,997.78	3,149,246.39	40.139178	-104.966200	
2,109.0	4.90	117.20	2,104.8	-40.4	106.5	1,293,994.67	3,149,252.09	40.139169	-104.966179	
2,200.0	4.90	114.30	2,195.5	-43.8	113.5	1,293,991.34	3,149,259.11	40.139160	-104.966154	
2,293.0	4.50	115.70	2,288.1	-47.0	120.4	1,293,988.16	3,149,266.04	40.139151	-104.966129	
2,385.0	4.50	113.70	2,379.9	-50.0	127.0	1,293,985.19	3,149,272.61	40.139143	-104.966106	
2,478.0	4.20	111.40	2,472.6	-52.7	133.5	1,293,982.52	3,149,279.14	40.139135	-104.966083	
2,570.0	4.00	110.50	2,564.4	-55.1	139.7	1,293,980.20	3,149,285.30	40.139129	-104.966061	
2,662.0	3.80	110.30	2,656.1	-57.3	145.5	1,293,978.06	3,149,291.18	40.139123	-104.966040	
2,753.0	3.40	112.80	2,747.0	-59.4	150.8	1,293,976.00	3,149,296.50	40.139117	-104.966021	
2,845.0	3.10	113.90	2,838.8	-61.4	155.6	1,293,973.96	3,149,301.31	40.139111	-104.966004	
2,940.0	4.70	103.00	2,933.6	-63.3	161.8	1,293,972.08	3,149,307.46	40.139106	-104.965982	
3,035.0	4.70	122.60	3,028.3	-66.3	168.8	1,293,969.15	3,149,314.55	40.139098	-104.965956	
3,130.0	4.40	123.00	3,123.0	-70.4	175.2	1,293,965.11	3,149,320.91	40.139087	-104.965934	
3,225.0	5.10	120.40	3,217.7	-74.5	181.9	1,293,961.03	3,149,327.63	40.139075	-104.965910	
3,320.0	5.00	121.80	3,312.3	-78.8	189.0	1,293,956.75	3,149,334.82	40.139064	-104.965884	
3,414.0	5.30	104.80	3,405.9	-82.1	196.7	1,293,953.53	3,149,342.52	40.139055	-104.965857	
3,509.0	4.70	103.10	3,500.5	-84.1	204.7	1,293,951.57	3,149,350.56	40.139049	-104.965828	
3,604.0	3.90	101.80	3,595.3	-85.6	211.7	1,293,950.07	3,149,357.52	40.139045	-104.965803	
3,698.0	2.90	102.80	3,689.1	-86.8	217.1	1,293,948.93	3,149,362.98	40.139042	-104.965784	
3,792.0	3.70	91.90	3,783.0	-87.5	222.5	1,293,948.33	3,149,368.33	40.139040	-104.965764	
3,887.0	4.70	106.80	3,877.7	-88.7	229.3	1,293,947.14	3,149,375.13	40.139037	-104.965740	
3,982.0	4.40	109.20	3,972.4	-91.0	236.5	1,293,944.86	3,149,382.31	40.139030	-104.965715	
4,076.0	4.10	116.30	4,066.1	-93.7	242.9	1,293,942.23	3,149,388.74	40.139023	-104.965692	
4,171.0	4.80	104.40	4,160.9	-96.2	249.8	1,293,939.78	3,149,395.65	40.139016	-104.965667	
4,266.0	4.60	108.20	4,255.5	-98.3	257.2	1,293,937.64	3,149,403.13	40.139010	-104.965640	
4,361.0	4.20	104.20	4,350.3	-100.4	264.2	1,293,935.64	3,149,410.14	40.139004	-104.965615	
4,456.0	4.70	115.70	4,445.0	-102.9	271.1	1,293,933.14	3,149,417.03	40.138997	-104.965591	
4,550.0	4.70	113.60	4,538.7	-106.1	278.1	1,293,929.97	3,149,424.05	40.138989	-104.965566	
4,645.0	4.20	113.10	4,633.4	-109.1	284.9	1,293,927.09	3,149,430.84	40.138981	-104.965541	
4,740.0	3.30	114.60	4,728.2	-111.6	290.6	1,293,924.62	3,149,436.54	40.138974	-104.965521	
4,835.0	3.70	116.00	4,823.0	-114.1	295.8	1,293,922.17	3,149,441.79	40.138967	-104.965502	
4,929.0	3.40	113.90	4,916.8	-116.5	301.1	1,293,919.74	3,149,447.08	40.138960	-104.965483	
5,024.0	4.90	111.50	5,011.6	-119.1	307.4	1,293,917.15	3,149,453.45	40.138953	-104.965461	
5,118.0	4.40	109.50	5,105.3	-121.8	314.6	1,293,914.52	3,149,460.60	40.138946	-104.965435	
5,213.0	4.60	113.90	5,200.0	-124.6	321.5	1,293,911.80	3,149,467.53	40.138938	-104.965410	
5,308.0	4.10	109.40	5,294.7	-127.2	328.2	1,293,909.17	3,149,474.24	40.138931	-104.965387	
5,402.0	4.30	106.40	5,388.4	-129.4	334.7	1,293,907.10	3,149,480.80	40.138925	-104.965363	
5,497.0	3.30	103.20	5,483.2	-131.0	340.8	1,293,905.51	3,149,486.89	40.138920	-104.965341	
5,591.0	3.50	119.70	5,577.1	-133.0	345.9	1,293,903.50	3,149,492.03	40.138915	-104.965323	
5,686.0	4.60	118.00	5,671.8	-136.3	351.8	1,293,900.31	3,149,497.93	40.138906	-104.965302	
5,780.0	5.40	111.20	5,765.5	-139.6	359.2	1,293,896.98	3,149,505.40	40.138897	-104.965275	
5,875.0	4.30	106.60	5,860.1	-142.3	366.8	1,293,894.40	3,149,513.00	40.138890	-104.965248	
5,970.0	5.20	118.00	5,954.8	-145.3	374.0	1,293,891.40	3,149,520.23	40.138881	-104.965222	
6,064.0	3.90	112.90	6,048.5	-148.5	380.8	1,293,888.20	3,149,526.95	40.138872	-104.965198	
6,158.0	4.60	101.10	6,142.2	-150.5	387.4	1,293,886.27	3,149,533.61	40.138867	-104.965175	

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant-Hurt 1F-14H-G268
Project:	DJ Wattenberg	TVD Reference:	32' KB @ 4920.0ft (Patt 326)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	32' KB @ 4920.0ft (Patt 326)
Well:	Grant-Hurt 1F-14H-G268	North Reference:	True
Wellbore:	Hz	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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
6,205.0	4.80	91.40	6,189.1	-150.9	391.2	1,293,885.88	3,149,537.43	40.138866	-104.965161	
6,253.0	5.80	79.00	6,236.9	-150.5	395.6	1,293,886.32	3,149,541.81	40.138867	-104.965145	
6,300.0	6.50	60.70	6,283.6	-148.8	400.3	1,293,888.10	3,149,546.45	40.138872	-104.965129	
6,347.0	7.80	43.70	6,330.3	-145.1	404.8	1,293,891.74	3,149,550.96	40.138882	-104.965112	
6,394.0	9.80	32.80	6,376.7	-139.5	409.1	1,293,897.43	3,149,555.29	40.138897	-104.965097	
6,441.0	11.50	29.30	6,422.9	-132.0	413.6	1,293,904.91	3,149,559.71	40.138918	-104.965081	
6,488.0	14.20	27.80	6,468.7	-122.8	418.6	1,293,914.13	3,149,564.64	40.138943	-104.965063	
6,535.0	17.00	23.80	6,514.0	-111.4	424.1	1,293,925.55	3,149,570.03	40.138974	-104.965044	
6,582.0	21.40	18.40	6,558.4	-97.0	429.5	1,293,940.01	3,149,575.43	40.139014	-104.965024	
6,629.0	24.40	16.90	6,601.6	-79.6	435.1	1,293,957.47	3,149,580.85	40.139062	-104.965004	
6,676.0	25.50	15.20	6,644.3	-60.5	440.5	1,293,976.56	3,149,586.21	40.139114	-104.964985	
6,722.0	26.10	14.50	6,685.7	-41.2	445.7	1,293,995.94	3,149,591.22	40.139167	-104.964966	
6,769.0	28.00	14.30	6,727.5	-20.5	451.0	1,294,016.67	3,149,596.41	40.139224	-104.964947	
6,816.0	30.90	14.60	6,768.5	1.9	456.7	1,294,039.08	3,149,602.05	40.139285	-104.964927	
6,863.0	33.30	13.10	6,808.3	26.1	462.7	1,294,063.37	3,149,607.87	40.139352	-104.964905	
6,911.0	35.60	11.30	6,847.8	52.7	468.4	1,294,089.94	3,149,613.43	40.139425	-104.964885	
6,958.0	37.30	10.80	6,885.6	80.1	473.8	1,294,117.37	3,149,618.62	40.139500	-104.964866	
7,004.0	39.80	10.60	6,921.6	108.2	479.1	1,294,145.57	3,149,623.77	40.139577	-104.964847	
7,051.0	43.10	10.50	6,956.8	138.8	484.8	1,294,176.19	3,149,629.28	40.139661	-104.964826	
7,099.0	45.50	10.80	6,991.2	171.8	491.0	1,294,209.17	3,149,635.28	40.139752	-104.964804	
7,146.0	47.60	10.60	7,023.5	205.3	497.3	1,294,242.73	3,149,641.41	40.139844	-104.964781	
7,192.0	50.20	10.30	7,053.8	239.4	503.6	1,294,276.86	3,149,647.49	40.139937	-104.964759	
7,239.0	52.20	10.30	7,083.2	275.4	510.2	1,294,312.93	3,149,653.82	40.140036	-104.964735	
7,286.0	54.70	10.10	7,111.2	312.6	516.9	1,294,350.13	3,149,660.28	40.140138	-104.964712	
7,333.0	58.90	8.50	7,136.9	351.4	523.2	1,294,388.97	3,149,666.39	40.140245	-104.964689	
7,380.0	61.80	8.80	7,160.2	391.8	529.3	1,294,429.38	3,149,672.29	40.140355	-104.964667	
7,427.0	63.40	8.00	7,181.8	433.0	535.4	1,294,470.70	3,149,678.14	40.140469	-104.964645	
7,474.0	66.80	6.90	7,201.6	475.3	541.0	1,294,512.99	3,149,683.40	40.140585	-104.964625	
7,521.0	71.10	6.50	7,218.5	518.9	546.1	1,294,556.58	3,149,688.25	40.140704	-104.964607	
7,568.0	76.50	5.00	7,231.6	563.7	550.6	1,294,601.49	3,149,692.50	40.140828	-104.964591	
7,615.0	81.20	3.10	7,240.7	609.7	553.8	1,294,647.49	3,149,695.47	40.140954	-104.964579	
7,662.0	85.80	1.50	7,246.0	656.4	555.7	1,294,694.15	3,149,697.06	40.141082	-104.964573	
7,730.0	89.50	0.40	7,248.8	724.3	556.8	1,294,762.08	3,149,697.78	40.141268	-104.964569	
7,802.0	91.00	0.30	7,248.4	796.3	557.3	1,294,834.07	3,149,697.78	40.141466	-104.964567	
7,894.0	90.30	0.00	7,247.4	888.3	557.5	1,294,926.07	3,149,697.47	40.141718	-104.964566	
7,986.0	90.70	359.50	7,246.6	980.3	557.1	1,295,018.06	3,149,696.52	40.141971	-104.964568	
8,078.0	89.70	359.50	7,246.3	1,072.3	556.3	1,295,110.05	3,149,695.16	40.142224	-104.964570	
8,170.0	88.60	359.70	7,247.6	1,164.3	555.7	1,295,202.03	3,149,693.96	40.142476	-104.964573	
8,262.0	88.80	0.70	7,249.7	1,256.2	556.0	1,295,294.00	3,149,693.73	40.142729	-104.964572	
8,354.0	89.50	2.40	7,251.1	1,348.2	558.5	1,295,385.97	3,149,695.67	40.142981	-104.964563	
8,446.0	89.40	1.90	7,252.0	1,440.1	561.9	1,295,477.92	3,149,698.56	40.143233	-104.964550	
8,538.0	90.60	2.70	7,252.0	1,532.0	565.6	1,295,569.86	3,149,701.70	40.143486	-104.964537	
8,630.0	91.50	2.90	7,250.3	1,623.9	570.1	1,295,661.76	3,149,705.64	40.143738	-104.964521	
8,722.0	89.90	1.40	7,249.2	1,715.8	573.6	1,295,753.70	3,149,708.54	40.143990	-104.964509	
8,814.0	89.70	0.70	7,249.5	1,807.8	575.2	1,295,845.69	3,149,709.67	40.144243	-104.964503	
8,906.0	91.60	1.10	7,248.4	1,899.8	576.7	1,295,937.68	3,149,710.57	40.144495	-104.964497	
8,998.0	91.50	0.80	7,246.0	1,991.8	578.2	1,296,029.64	3,149,711.54	40.144748	-104.964492	
9,090.0	91.30	359.70	7,243.7	2,083.7	578.6	1,296,121.61	3,149,711.39	40.145000	-104.964491	
9,182.0	91.90	0.30	7,241.1	2,175.7	578.6	1,296,213.59	3,149,710.83	40.145253	-104.964491	
9,273.0	90.90	1.00	7,238.9	2,266.7	579.6	1,296,304.56	3,149,711.32	40.145502	-104.964487	
9,366.0	90.90	1.80	7,237.5	2,359.6	581.9	1,296,397.53	3,149,713.03	40.145758	-104.964479	
9,458.0	90.30	1.90	7,236.5	2,451.6	584.9	1,296,489.50	3,149,715.45	40.146010	-104.964468	
9,551.0	90.00	2.90	7,236.3	2,544.5	588.8	1,296,582.44	3,149,718.78	40.146265	-104.964454	
9,643.0	90.60	4.20	7,235.8	2,636.3	594.5	1,296,674.29	3,149,723.93	40.146517	-104.964434	
9,735.0	91.30	3.20	7,234.2	2,728.1	600.4	1,296,766.12	3,149,729.31	40.146769	-104.964412	

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant-Hurt 1F-14H-G268
Project:	DJ Wattenberg	TVD Reference:	32' KB @ 4920.0ft (Patt 326)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	32' KB @ 4920.0ft (Patt 326)
Well:	Grant-Hurt 1F-14H-G268	North Reference:	True
Wellbore:	Hz	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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
9,826.0	90.40	2.00	7,232.9	2,819.0	604.5	1,296,857.03	3,149,732.89	40.147019	-104.964398	
9,918.0	90.70	1.60	7,232.0	2,911.0	607.4	1,296,949.00	3,149,735.23	40.147271	-104.964387	
10,013.0	90.70	1.10	7,230.9	3,005.9	609.7	1,297,043.98	3,149,736.89	40.147532	-104.964379	
10,108.0	90.30	0.50	7,230.0	3,100.9	611.0	1,297,138.97	3,149,737.65	40.147792	-104.964375	
10,203.0	90.30	1.40	7,229.5	3,195.9	612.6	1,297,233.96	3,149,738.65	40.148053	-104.964369	
10,298.0	90.30	2.50	7,229.0	3,290.8	615.8	1,297,328.92	3,149,741.31	40.148314	-104.964357	
10,393.0	90.00	1.70	7,228.8	3,385.8	619.3	1,297,423.88	3,149,744.22	40.148574	-104.964345	
10,488.0	89.90	2.10	7,228.9	3,480.7	622.4	1,297,518.84	3,149,746.80	40.148835	-104.964334	
10,583.0	89.80	2.00	7,229.1	3,575.7	625.8	1,297,613.80	3,149,749.63	40.149096	-104.964321	
10,677.0	89.50	1.50	7,229.7	3,669.6	628.7	1,297,707.77	3,149,751.93	40.149354	-104.964311	
10,772.0	90.50	0.50	7,229.7	3,764.6	630.4	1,297,802.76	3,149,753.02	40.149614	-104.964305	
10,867.0	91.50	0.00	7,228.0	3,859.6	630.8	1,297,897.75	3,149,752.86	40.149875	-104.964304	
10,962.0	93.20	359.40	7,224.1	3,954.5	630.3	1,297,992.66	3,149,751.80	40.150136	-104.964306	
11,056.0	93.50	359.90	7,218.6	4,048.3	629.7	1,298,086.49	3,149,750.66	40.150393	-104.964308	
11,151.0	91.80	1.00	7,214.2	4,143.2	630.5	1,298,181.36	3,149,750.83	40.150654	-104.964305	
11,246.0	90.50	1.40	7,212.3	4,238.2	632.4	1,298,276.33	3,149,752.25	40.150914	-104.964298	
11,341.0	89.50	0.30	7,212.3	4,333.1	633.9	1,298,371.32	3,149,753.09	40.151175	-104.964293	
11,436.0	88.20	0.10	7,214.2	4,428.1	634.2	1,298,466.30	3,149,752.85	40.151436	-104.964292	
11,531.0	88.70	1.30	7,216.8	4,523.1	635.3	1,298,561.26	3,149,753.44	40.151696	-104.964287	
11,626.0	89.20	2.50	7,218.6	4,618.0	638.5	1,298,656.21	3,149,756.02	40.151957	-104.964276	
11,720.0	90.90	2.50	7,218.5	4,711.9	642.6	1,298,750.14	3,149,759.55	40.152215	-104.964261	
11,816.0	91.60	1.70	7,216.4	4,807.8	646.1	1,298,846.07	3,149,762.49	40.152478	-104.964249	
11,911.0	90.20	1.70	7,214.9	4,902.8	648.9	1,298,941.03	3,149,764.74	40.152739	-104.964239	
12,006.0	90.40	0.90	7,214.4	4,997.7	651.1	1,299,036.01	3,149,766.32	40.152999	-104.964231	
12,101.0	91.40	1.50	7,212.9	5,092.7	653.1	1,299,130.99	3,149,767.74	40.153260	-104.964224	
12,195.0	91.00	2.30	7,210.9	5,186.6	656.2	1,299,224.93	3,149,770.29	40.153518	-104.964213	
12,289.0	89.30	2.30	7,210.7	5,280.6	660.0	1,299,318.87	3,149,773.50	40.153776	-104.964199	
12,385.0	89.40	1.80	7,211.8	5,376.5	663.4	1,299,414.82	3,149,776.35	40.154039	-104.964187	
12,479.0	90.90	1.30	7,211.5	5,470.5	665.9	1,299,508.80	3,149,778.33	40.154297	-104.964178	
12,574.0	89.80	1.80	7,210.9	5,565.4	668.5	1,299,603.78	3,149,780.33	40.154558	-104.964169	
12,668.0	89.80	1.00	7,211.3	5,659.4	670.8	1,299,697.76	3,149,782.06	40.154816	-104.964160	
12,763.0	91.30	2.60	7,210.4	5,754.3	673.8	1,299,792.72	3,149,784.47	40.155076	-104.964150	
12,858.0	92.20	2.10	7,207.5	5,849.2	677.7	1,299,887.64	3,149,787.80	40.155337	-104.964136	
12,952.0	91.40	1.80	7,204.5	5,943.1	680.9	1,299,981.56	3,149,790.43	40.155595	-104.964124	
13,047.0	90.00	2.10	7,203.3	6,038.1	684.1	1,300,076.51	3,149,793.09	40.155855	-104.964113	
13,142.0	91.10	1.20	7,202.4	6,133.0	686.8	1,300,171.48	3,149,795.25	40.156116	-104.964103	
13,236.0	90.20	2.30	7,201.4	6,227.0	689.7	1,300,265.44	3,149,797.56	40.156374	-104.964093	
13,331.0	89.60	3.20	7,201.5	6,321.9	694.3	1,300,360.36	3,149,801.55	40.156634	-104.964076	
13,426.0	88.70	3.00	7,202.9	6,416.7	699.4	1,300,455.24	3,149,806.11	40.156895	-104.964058	
13,521.0	89.40	2.10	7,204.5	6,511.6	703.6	1,300,550.15	3,149,809.77	40.157155	-104.964043	
13,616.0	89.80	2.30	7,205.2	6,606.5	707.3	1,300,645.10	3,149,812.84	40.157416	-104.964030	
13,710.0	87.90	0.90	7,207.1	6,700.5	709.9	1,300,739.05	3,149,814.90	40.157674	-104.964020	
13,805.0	88.00	359.60	7,210.5	6,795.4	710.3	1,300,833.99	3,149,814.75	40.157934	-104.964019	
13,900.0	89.80	359.10	7,212.3	6,890.4	709.2	1,300,928.95	3,149,813.10	40.158195	-104.964023	
13,995.0	90.80	358.70	7,211.8	6,985.3	707.4	1,301,023.92	3,149,810.70	40.158456	-104.964029	
14,090.0	89.50	358.30	7,211.5	7,080.3	704.9	1,301,118.87	3,149,807.64	40.158716	-104.964038	
14,175.0	89.50	357.90	7,212.3	7,165.2	702.1	1,301,203.77	3,149,804.32	40.158950	-104.964048	
Last CES Survey @ 14,175' MD										
14,225.0	89.50	357.90	7,212.7	7,215.2	700.3	1,301,253.72	3,149,802.18	40.159087	-104.964055	
PTB @ 14,225'										

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant-Hurt 1F-14H-G268
Project:	DJ Wattenberg	TVD Reference:	32' KB @ 4920.0ft (Patt 326)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	32' KB @ 4920.0ft (Patt 326)
Well:	Grant-Hurt 1F-14H-G268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Design 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									
Grant-Hurt 1F-14H-G268	0.00	0.00	7,205.0	5,918.8	776.5	1,299,957.80	3,149,886.21	40.155528	-104.963782
- survey misses target center by 96.4ft at 12931.0ft MD (7205.1 TVD, 5922.1 N, 680.2 E)									
- Point									
Grant-Hurt 1F-14H-G268	0.00	0.00	7,205.0	7,300.2	704.3	1,301,338.77	3,149,805.73	40.159320	-104.964040
- survey misses target center by 85.5ft at 14225.0ft MD (7212.7 TVD, 7215.2 N, 700.3 E)									
- Point									

Survey Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
14,175.0	7,212.3	7,165.2	702.1	Last CES Survey @ 14,175' MD	
14,225.0	7,212.7	7,215.2	700.3	PTB @ 14,225'	

Checked By: _____	Approved By: _____	Date: _____
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