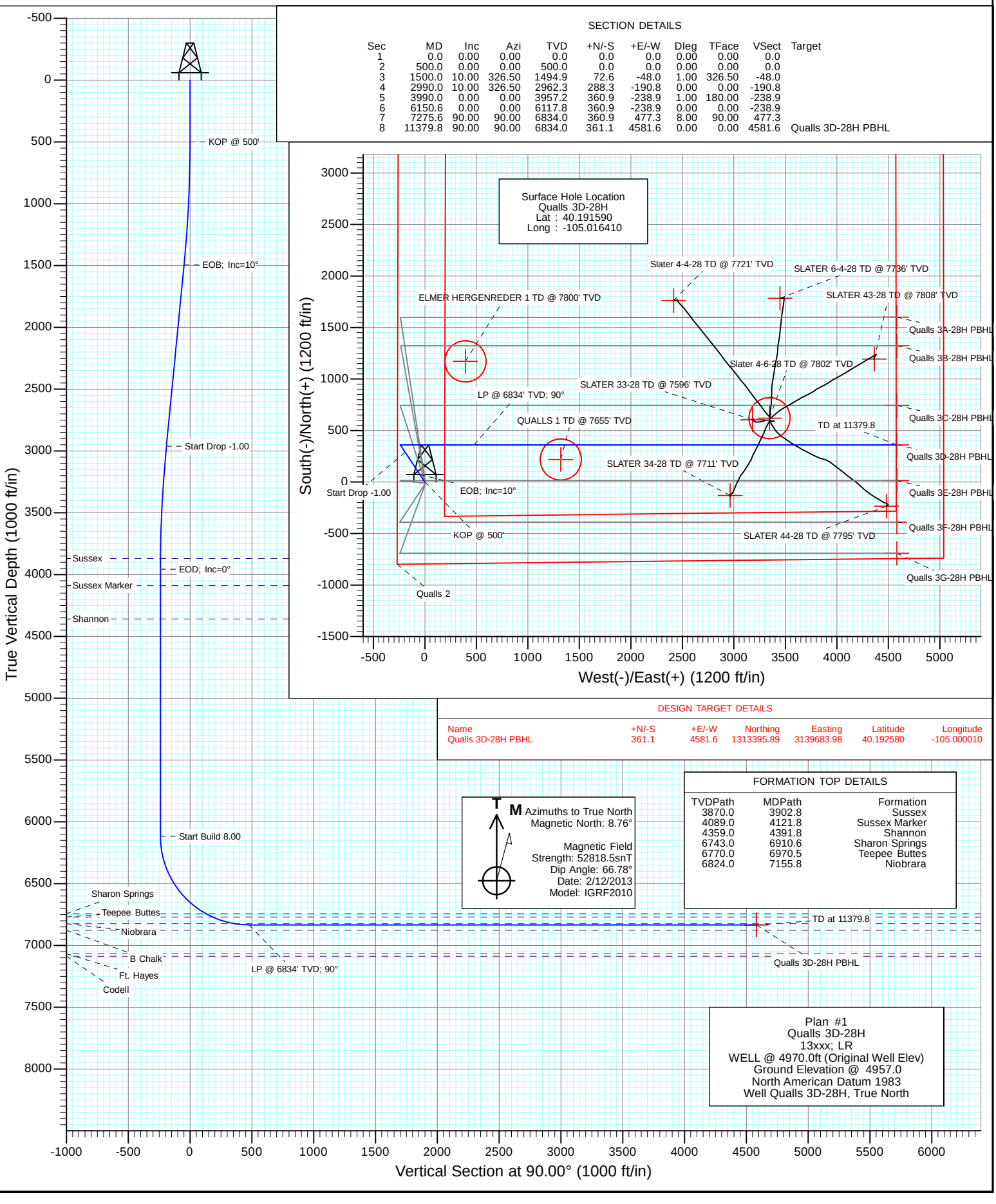
Project: DJ Wattenberg
Site: S28-T3N-R68W (Qualls)
Well: Qualls 3D-28H
Wellbore: Hz
Design: Plan #1

CATHEDRAL

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	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	1500.0	10.00	326.50	1494.9	72.6	-48.0	1.00	326.50	-48.0	
4	2990.0	10.00	326.50	2962.3	288.3	-190.8	0.00	0.00	-190.8	
5	3990.0	0.00	0.00	3957.2	360.9	-238.9	1.00	180.00	-238.9	
6	6150.6	0.00	0.00	6117.8	360.9	-238.9	0.00	0.00	-238.9	
7	7275.6	90.00	90.00	6834.0	360.9	477.3	8.00	90.00	477.3	
8	11379.8	90.00	90.00	6834.0	361.1	4581.6	0.00	0.00	4581.6	Qualls 3D-28H PBHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Qualls 3D-28H PBHL	361.1	4581.6	1313395.89	3139683.98	40.192580	-105.000010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3870.0	3902.8	Sussex
4089.0	4121.8	Sussex Marker
4359.0	4391.8	Shannon
6743.0	6910.6	Sharon Springs
6770.0	6970.5	Teepee Buttes
6824.0	7155.8	Niobrara

Plan #1
Qualls 3D-28H
13xxx; LR
WELL @ 4970.0ft (Original Well Elev)
Ground Elevation @ 4957.0
North American Datum 1983
Well Qualls 3D-28H, True North

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	**North Reference:**	True
Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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 S28-T3N-R68W (Qualls)

Site Position:		**Northing:**	1,313,038.99 ft	**Latitude:**	40.191670
From:	Lat/Long	**Easting:**	3,135,104.30 ft	**Longitude:**	-105.016410
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.31 °

Well Qualls 3D-28H

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,313,009.84 ft	**Latitude:**	40.191590
	+E/-W	0.0 ft	**Easting:**	3,135,104.46 ft	**Longitude:**	-105.016410
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,957.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/12/2013	8.76	66.78	52,818

Design Plan #1

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	90.00

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	10.00	326.50	1,494.9	72.6	-48.0	1.00	1.00	0.00	326.50	
2,990.0	10.00	326.50	2,962.3	288.3	-190.8	0.00	0.00	0.00	0.00	
3,990.0	0.00	0.00	3,957.2	360.9	-238.9	1.00	-1.00	0.00	180.00	
6,150.6	0.00	0.00	6,117.8	360.9	-238.9	0.00	0.00	0.00	0.00	
7,275.6	90.00	90.00	6,834.0	360.9	477.3	8.00	8.00	0.00	90.00	
11,379.8	90.00	90.00	6,834.0	361.1	4,581.6	0.00	0.00	0.00	0.00	Qualls 3D-28H PBHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	**North Reference:**	True
Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500'
600.0	1.00	326.50	600.0	0.7	-0.5	-0.5	1.00	1.00	
700.0	2.00	326.50	700.0	2.9	-1.9	-1.9	1.00	1.00	
800.0	3.00	326.50	799.9	6.5	-4.3	-4.3	1.00	1.00	
900.0	4.00	326.50	899.7	11.6	-7.7	-7.7	1.00	1.00	
1,000.0	5.00	326.50	999.4	18.2	-12.0	-12.0	1.00	1.00	
1,100.0	6.00	326.50	1,098.9	26.2	-17.3	-17.3	1.00	1.00	
1,200.0	7.00	326.50	1,198.3	35.6	-23.6	-23.6	1.00	1.00	
1,300.0	8.00	326.50	1,297.4	46.5	-30.8	-30.8	1.00	1.00	
1,400.0	9.00	326.50	1,396.3	58.8	-38.9	-38.9	1.00	1.00	
1,500.0	10.00	326.50	1,494.9	72.6	-48.0	-48.0	1.00	1.00	EOB; Inc=10°
1,600.0	10.00	326.50	1,593.4	87.1	-57.6	-57.6	0.00	0.00	
1,700.0	10.00	326.50	1,691.9	101.5	-67.2	-67.2	0.00	0.00	
1,800.0	10.00	326.50	1,790.4	116.0	-76.8	-76.8	0.00	0.00	
1,900.0	10.00	326.50	1,888.9	130.5	-86.4	-86.4	0.00	0.00	
2,000.0	10.00	326.50	1,987.3	145.0	-96.0	-96.0	0.00	0.00	
2,100.0	10.00	326.50	2,085.8	159.5	-105.5	-105.5	0.00	0.00	
2,200.0	10.00	326.50	2,184.3	173.9	-115.1	-115.1	0.00	0.00	
2,300.0	10.00	326.50	2,282.8	188.4	-124.7	-124.7	0.00	0.00	
2,400.0	10.00	326.50	2,381.3	202.9	-134.3	-134.3	0.00	0.00	
2,500.0	10.00	326.50	2,479.7	217.4	-143.9	-143.9	0.00	0.00	
2,600.0	10.00	326.50	2,578.2	231.9	-153.5	-153.5	0.00	0.00	
2,700.0	10.00	326.50	2,676.7	246.3	-163.1	-163.1	0.00	0.00	
2,800.0	10.00	326.50	2,775.2	260.8	-172.6	-172.6	0.00	0.00	
2,900.0	10.00	326.50	2,873.7	275.3	-182.2	-182.2	0.00	0.00	
2,990.0	10.00	326.50	2,962.3	288.3	-190.8	-190.8	0.00	0.00	Start Drop -1.00
3,000.0	9.90	326.50	2,972.1	289.8	-191.8	-191.8	1.00	-1.00	
3,100.0	8.90	326.50	3,070.8	303.4	-200.8	-200.8	1.00	-1.00	
3,200.0	7.90	326.50	3,169.7	315.6	-208.9	-208.9	1.00	-1.00	
3,300.0	6.90	326.50	3,268.9	326.3	-216.0	-216.0	1.00	-1.00	
3,400.0	5.90	326.50	3,368.3	335.6	-222.1	-222.1	1.00	-1.00	
3,500.0	4.90	326.50	3,467.8	343.5	-227.3	-227.3	1.00	-1.00	
3,600.0	3.90	326.50	3,567.5	349.9	-231.6	-231.6	1.00	-1.00	
3,700.0	2.90	326.50	3,667.3	354.8	-234.8	-234.8	1.00	-1.00	
3,800.0	1.90	326.50	3,767.3	358.3	-237.2	-237.2	1.00	-1.00	
3,900.0	0.90	326.50	3,867.2	360.3	-238.5	-238.5	1.00	-1.00	
3,902.8	0.87	326.50	3,870.0	360.4	-238.5	-238.5	1.00	-1.00	Sussex
3,990.0	0.00	0.00	3,957.2	360.9	-238.9	-238.9	1.00	-1.00	EOD; Inc=0°
4,000.0	0.00	0.00	3,967.2	360.9	-238.9	-238.9	0.00	0.00	
4,100.0	0.00	0.00	4,067.2	360.9	-238.9	-238.9	0.00	0.00	
4,121.8	0.00	0.00	4,089.0	360.9	-238.9	-238.9	0.00	0.00	Sussex Marker
4,200.0	0.00	0.00	4,167.2	360.9	-238.9	-238.9	0.00	0.00	
4,300.0	0.00	0.00	4,267.2	360.9	-238.9	-238.9	0.00	0.00	
4,391.8	0.00	0.00	4,359.0	360.9	-238.9	-238.9	0.00	0.00	Shannon
4,400.0	0.00	0.00	4,367.2	360.9	-238.9	-238.9	0.00	0.00	
4,500.0	0.00	0.00	4,467.2	360.9	-238.9	-238.9	0.00	0.00	
4,600.0	0.00	0.00	4,567.2	360.9	-238.9	-238.9	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	**North Reference:**	True
Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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
4,700.0	0.00	0.00	4,667.2	360.9	-238.9	-238.9	0.00	0.00	
4,800.0	0.00	0.00	4,767.2	360.9	-238.9	-238.9	0.00	0.00	
4,900.0	0.00	0.00	4,867.2	360.9	-238.9	-238.9	0.00	0.00	
5,000.0	0.00	0.00	4,967.2	360.9	-238.9	-238.9	0.00	0.00	
5,100.0	0.00	0.00	5,067.2	360.9	-238.9	-238.9	0.00	0.00	
5,200.0	0.00	0.00	5,167.2	360.9	-238.9	-238.9	0.00	0.00	
5,300.0	0.00	0.00	5,267.2	360.9	-238.9	-238.9	0.00	0.00	
5,400.0	0.00	0.00	5,367.2	360.9	-238.9	-238.9	0.00	0.00	
5,500.0	0.00	0.00	5,467.2	360.9	-238.9	-238.9	0.00	0.00	
5,600.0	0.00	0.00	5,567.2	360.9	-238.9	-238.9	0.00	0.00	
5,700.0	0.00	0.00	5,667.2	360.9	-238.9	-238.9	0.00	0.00	
5,800.0	0.00	0.00	5,767.2	360.9	-238.9	-238.9	0.00	0.00	
5,900.0	0.00	0.00	5,867.2	360.9	-238.9	-238.9	0.00	0.00	
6,000.0	0.00	0.00	5,967.2	360.9	-238.9	-238.9	0.00	0.00	
6,100.0	0.00	0.00	6,067.2	360.9	-238.9	-238.9	0.00	0.00	
6,150.6	0.00	0.00	6,117.8	360.9	-238.9	-238.9	0.00	0.00	Start Build 8.00
6,200.0	3.95	90.00	6,167.2	360.9	-237.2	-237.2	8.00	8.00	
6,300.0	11.95	90.00	6,266.1	360.9	-223.4	-223.4	8.00	8.00	
6,400.0	19.95	90.00	6,362.2	360.9	-195.9	-195.9	8.00	8.00	
6,500.0	27.95	90.00	6,453.5	360.9	-155.3	-155.3	8.00	8.00	
6,600.0	35.95	90.00	6,538.3	360.9	-102.5	-102.5	8.00	8.00	
6,700.0	43.95	90.00	6,614.9	360.9	-38.3	-38.3	8.00	8.00	
6,800.0	51.95	90.00	6,681.8	360.9	35.9	35.9	8.00	8.00	
6,900.0	59.95	90.00	6,737.8	360.9	118.7	118.7	8.00	8.00	
6,910.6	60.80	90.00	6,743.0	360.9	127.9	127.9	8.00	8.00	Sharon Springs
6,970.5	65.59	90.00	6,770.0	360.9	181.4	181.4	8.00	8.00	Teepee Buttes
7,000.0	67.95	90.00	6,781.6	360.9	208.5	208.5	8.00	8.00	
7,100.0	75.95	90.00	6,812.6	360.9	303.5	303.5	8.00	8.00	
7,155.8	80.41	90.00	6,824.0	360.9	358.0	358.0	8.00	8.00	Niobrara
7,200.0	83.95	90.00	6,830.0	360.9	401.9	401.9	8.00	8.00	
7,275.6	90.00	90.00	6,834.0	360.9	477.3	477.3	8.00	8.00	LP @ 6834' TVD; 90°
7,300.0	90.00	90.00	6,834.0	360.9	501.7	501.7	0.00	0.00	
7,400.0	90.00	90.00	6,834.0	361.0	601.7	601.7	0.00	0.00	
7,500.0	90.00	90.00	6,834.0	361.0	701.7	701.7	0.00	0.00	
7,600.0	90.00	90.00	6,834.0	361.0	801.7	801.7	0.00	0.00	
7,700.0	90.00	90.00	6,834.0	361.0	901.7	901.7	0.00	0.00	
7,800.0	90.00	90.00	6,834.0	361.0	1,001.7	1,001.7	0.00	0.00	
7,900.0	90.00	90.00	6,834.0	361.0	1,101.7	1,101.7	0.00	0.00	
8,000.0	90.00	90.00	6,834.0	361.0	1,201.7	1,201.7	0.00	0.00	
8,100.0	90.00	90.00	6,834.0	361.0	1,301.7	1,301.7	0.00	0.00	
8,200.0	90.00	90.00	6,834.0	361.0	1,401.7	1,401.7	0.00	0.00	
8,300.0	90.00	90.00	6,834.0	361.0	1,501.7	1,501.7	0.00	0.00	
8,400.0	90.00	90.00	6,834.0	361.0	1,601.7	1,601.7	0.00	0.00	
8,500.0	90.00	90.00	6,834.0	361.0	1,701.7	1,701.7	0.00	0.00	
8,600.0	90.00	90.00	6,834.0	361.0	1,801.7	1,801.7	0.00	0.00	
8,700.0	90.00	90.00	6,834.0	361.0	1,901.7	1,901.7	0.00	0.00	
8,800.0	90.00	90.00	6,834.0	361.0	2,001.7	2,001.7	0.00	0.00	
8,900.0	90.00	90.00	6,834.0	361.0	2,101.7	2,101.7	0.00	0.00	
9,000.0	90.00	90.00	6,834.0	361.0	2,201.7	2,201.7	0.00	0.00	
9,100.0	90.00	90.00	6,834.0	361.0	2,301.7	2,301.7	0.00	0.00	
9,200.0	90.00	90.00	6,834.0	361.0	2,401.7	2,401.7	0.00	0.00	
9,300.0	90.00	90.00	6,834.0	361.0	2,501.7	2,501.7	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	**North Reference:**	True
Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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
9,400.0	90.00	90.00	6,834.0	361.0	2,601.7	2,601.7	0.00	0.00	
9,500.0	90.00	90.00	6,834.0	361.0	2,701.7	2,701.7	0.00	0.00	
9,600.0	90.00	90.00	6,834.0	361.0	2,801.7	2,801.7	0.00	0.00	
9,700.0	90.00	90.00	6,834.0	361.0	2,901.7	2,901.7	0.00	0.00	
9,800.0	90.00	90.00	6,834.0	361.0	3,001.7	3,001.7	0.00	0.00	
9,900.0	90.00	90.00	6,834.0	361.0	3,101.7	3,101.7	0.00	0.00	
10,000.0	90.00	90.00	6,834.0	361.0	3,201.7	3,201.7	0.00	0.00	
10,100.0	90.00	90.00	6,834.0	361.0	3,301.7	3,301.7	0.00	0.00	
10,200.0	90.00	90.00	6,834.0	361.0	3,401.7	3,401.7	0.00	0.00	
10,300.0	90.00	90.00	6,834.0	361.0	3,501.7	3,501.7	0.00	0.00	
10,400.0	90.00	90.00	6,834.0	361.0	3,601.7	3,601.7	0.00	0.00	
10,500.0	90.00	90.00	6,834.0	361.0	3,701.7	3,701.7	0.00	0.00	
10,600.0	90.00	90.00	6,834.0	361.0	3,801.7	3,801.7	0.00	0.00	
10,700.0	90.00	90.00	6,834.0	361.1	3,901.7	3,901.7	0.00	0.00	
10,800.0	90.00	90.00	6,834.0	361.1	4,001.7	4,001.7	0.00	0.00	
10,900.0	90.00	90.00	6,834.0	361.1	4,101.7	4,101.7	0.00	0.00	
11,000.0	90.00	90.00	6,834.0	361.1	4,201.7	4,201.7	0.00	0.00	
11,100.0	90.00	90.00	6,834.0	361.1	4,301.7	4,301.7	0.00	0.00	
11,200.0	90.00	90.00	6,834.0	361.1	4,401.7	4,401.7	0.00	0.00	
11,300.0	90.00	90.00	6,834.0	361.1	4,501.7	4,501.7	0.00	0.00	
11,379.8	90.00	90.00	6,834.0	361.1	4,581.6	4,581.6	0.00	0.00	TD at 11379.8 - Qualls 3D-28H PBHL

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Qualls 3D-28H PBHL - plan hits target center - Point	0.00	0.00	6,834.0	361.1	4,581.6	1,313,395.89	3,139,683.98	40.192580	-105.000010

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,902.8	3,870.0	Sussex			
4,121.8	4,089.0	Sussex Marker			
4,391.8	4,359.0	Shannon			
6,910.6	6,743.0	Sharon Springs			
6,970.5	6,770.0	Teepee Buttes			
7,155.8	6,824.0	Niobrara			

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	**North Reference:**	True
Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.0	500.0	0.0	0.0	KOP @ 500'
1,500.0	1,494.9	72.6	-48.0	EOB; Inc=10°
2,990.0	2,962.3	288.3	-190.8	Start Drop -1.00
3,990.0	3,957.2	360.9	-238.9	EOD; Inc=0°
6,150.6	6,117.8	360.9	-238.9	Start Build 8.00
7,275.6	6,834.0	360.9	477.3	LP @ 6834' TVD; 90°
11,379.8	6,834.0	361.1	4,581.6	TD at 11379.8

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S28-T3N-R68W (Qualls)
Qualls 3D-28H
Hz
Plan #1

Anticollision Report

12 February, 2013

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 2/12/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,379.8	Plan #1 (Hz)	MWD	Geolink MWD

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S28-T3N-R68W (Qualls)						
ANDERSON FAMILY TRUST 1 (EXISTING) - EXISTING						Out of range
ELMER HERGENREDER 1 (EXISTING) - EXISTING - N						Out of range
QUALLS 1 (EXISTING) - EXISTING - NO SURVEYS	8,117.7	6,801.0	142.0	93.3	2.917	CC, ES, SF
Qualls 3A-28H - Hz - Plan #1	200.0	200.0	29.1	28.5	44.652	CC, ES
Qualls 3A-28H - Hz - Plan #1	400.0	397.0	37.7	36.3	27.678	SF
Qualls 3B-28H - Hz - Plan #1	300.0	300.0	18.2	17.2	18.181	CC, ES
Qualls 3B-28H - Hz - Plan #1	500.0	498.4	25.1	23.4	14.696	SF
Qualls 3C-28H - Hz - Plan #1	400.0	400.0	7.3	5.9	5.393	CC, ES
Qualls 3C-28H - Hz - Plan #1	11,379.8	11,643.0	442.8	241.1	2.196	SF
Qualls 3E-28H - Hz - Plan #1	503.1	503.1	10.9	9.2	6.351	CC, ES
Qualls 3E-28H - Hz - Plan #1	11,379.8	11,625.9	435.3	249.2	2.339	SF
Qualls 3F-28H - Hz - Plan #1	300.0	300.0	21.9	20.9	21.817	CC, ES
Qualls 3F-28H - Hz - Plan #1	600.0	598.8	29.4	27.3	14.322	SF
Qualls 3G-28H - Hz - Plan #1	200.0	200.0	29.1	28.5	44.646	CC, ES
Qualls 3G-28H - Hz - Plan #1	600.0	597.4	43.1	41.1	21.065	SF
SLATER 33-28 (EXISTING) - EXISTING - GYRO	9,987.9	6,821.8	243.6	155.4	2.762	CC, ES
SLATER 33-28 (EXISTING) - EXISTING - GYRO	10,000.0	6,821.8	243.9	155.4	2.756	SF
SLATER 34-28 (EXISTING) - EXISTING - SURVEYS	9,767.3	6,922.1	492.2	401.9	5.451	CC, ES
SLATER 34-28 (EXISTING) - EXISTING - SURVEYS	9,800.0	6,922.2	493.3	402.2	5.415	SF
SLATER 43-28 (EXISTING) - EXISTING - SURVEYS						Out of range
SLATER 44-28 (EXISTING) - EXISTING - SURVEYS						Out of range
SLATER 4-4-28 (EXISTING) - Existing - SURVEYS						Out of range
SLATER 4-6-28 (EXISTING) - Existing - NO SURVEYS	10,144.2	6,826.0	258.8	161.1	2.648	CC, ES, SF
SLATER 6-4-28 (EXISTING) - EXISTING - SURVEYS						Out of range
WATERFRONT 11-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 12-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 13-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 14-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 33-27 (EXISTING) - EXISTING - NO SU						Out of range

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - QUALLS 1 (EXISTING) - EXISTING - NO SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
7,700.0	6,834.0	6,801.0	6,801.0	27.6	11.9	90.00	219.0	1,319.4	441.2	402.1	39.09	11.286	
7,800.0	6,834.0	6,801.0	6,801.0	29.9	11.9	90.00	219.0	1,319.4	348.0	306.7	41.34	8.417	
7,900.0	6,834.0	6,801.0	6,801.0	32.1	11.9	90.00	219.0	1,319.4	259.9	216.3	43.63	5.958	
8,000.0	6,834.0	6,801.0	6,801.0	34.4	11.9	90.00	219.0	1,319.4	184.4	138.5	45.94	4.015	
8,100.0	6,834.0	6,801.0	6,801.0	36.7	11.9	90.00	219.0	1,319.4	143.1	94.8	48.27	2.965	
8,117.7	6,834.0	6,801.0	6,801.0	37.1	11.9	90.00	219.0	1,319.4	142.0	93.3	48.69	2.917	CC, ES, SF
8,200.0	6,834.0	6,801.0	6,801.0	39.0	11.9	90.00	219.0	1,319.4	164.1	113.5	50.62	3.242	
8,300.0	6,834.0	6,801.0	6,801.0	41.4	11.9	90.00	219.0	1,319.4	231.1	178.1	52.99	4.361	
8,400.0	6,834.0	6,801.0	6,801.0	43.8	11.9	90.00	219.0	1,319.4	316.0	260.6	55.37	5.707	
8,500.0	6,834.0	6,801.0	6,801.0	46.1	11.9	90.00	219.0	1,319.4	407.8	350.1	57.75	7.061	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3A-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	29.1	0.0	29.1	28.8	0.30	95.976	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.65	44.652	CC, ES
300.0	300.0	298.7	298.7	0.5	0.5	-0.58	31.2	-0.3	31.3	30.3	1.00	31.214	
400.0	400.0	397.0	396.8	0.7	0.7	-1.93	37.5	-1.3	37.7	36.3	1.36	27.678	SF
500.0	500.0	494.6	493.8	0.8	1.0	-3.38	47.8	-2.8	48.3	46.6	1.74	27.847	
600.0	600.0	591.3	589.4	1.0	1.2	29.22	62.1	-5.0	62.4	60.4	2.04	30.671	
700.0	700.0	687.0	683.3	1.2	1.6	29.02	80.1	-7.7	79.2	76.8	2.38	33.281	
800.0	799.9	781.4	775.2	1.4	2.0	29.17	101.7	-11.0	98.5	95.8	2.72	36.171	
900.0	899.7	875.7	866.0	1.6	2.5	29.47	126.8	-14.8	120.2	117.2	3.07	39.158	
1,000.0	999.4	973.3	959.7	1.8	3.0	29.98	154.0	-18.9	141.7	138.2	3.43	41.311	
1,100.0	1,098.9	1,071.3	1,053.7	2.0	3.5	30.65	181.3	-23.0	161.7	157.9	3.80	42.569	
1,200.0	1,198.3	1,169.5	1,147.9	2.2	4.0	31.45	208.6	-27.1	180.2	176.0	4.18	43.132	
1,300.0	1,297.4	1,268.0	1,242.4	2.5	4.5	32.36	236.0	-31.3	197.3	192.8	4.57	43.137	
1,400.0	1,396.3	1,366.7	1,337.1	2.8	5.0	33.37	263.5	-35.4	213.1	208.1	4.99	42.685	
1,500.0	1,494.9	1,465.5	1,431.9	3.1	5.5	34.49	291.0	-39.6	227.5	222.0	5.44	41.851	
1,600.0	1,593.4	1,564.4	1,526.9	3.4	6.0	35.67	318.5	-43.8	241.2	235.3	5.90	40.881	
1,700.0	1,691.9	1,663.4	1,621.8	3.7	6.5	36.72	346.1	-47.9	255.1	248.7	6.38	39.976	
1,800.0	1,790.4	1,762.3	1,716.7	4.1	7.0	37.66	373.6	-52.1	269.0	262.2	6.87	39.136	
1,900.0	1,888.9	1,861.2	1,811.7	4.4	7.5	38.51	401.1	-56.3	283.0	275.7	7.38	38.359	
2,000.0	1,987.3	1,960.2	1,906.6	4.7	8.0	39.28	428.7	-60.4	297.1	289.2	7.89	37.643	
2,100.0	2,085.8	2,059.1	2,001.5	5.1	8.6	39.98	456.2	-64.6	311.2	302.8	8.41	36.983	
2,200.0	2,184.3	2,158.0	2,096.5	5.4	9.1	40.62	483.8	-68.8	325.3	316.4	8.94	36.374	
2,300.0	2,282.8	2,257.0	2,191.4	5.7	9.6	41.21	511.3	-72.9	339.5	330.0	9.48	35.814	
2,400.0	2,381.3	2,355.9	2,286.3	6.1	10.1	41.74	538.8	-77.1	353.7	343.7	10.02	35.296	
2,500.0	2,479.7	2,454.8	2,381.3	6.4	10.6	42.24	566.4	-81.2	368.0	357.4	10.57	34.818	
2,600.0	2,578.2	2,553.8	2,476.2	6.8	11.1	42.70	593.9	-85.4	382.2	371.1	11.12	34.375	
2,700.0	2,676.7	2,652.7	2,571.1	7.1	11.6	43.13	621.4	-89.6	396.5	384.9	11.67	33.965	
2,800.0	2,775.2	2,751.6	2,666.1	7.4	12.2	43.53	649.0	-93.7	410.8	398.6	12.23	33.584	
2,900.0	2,873.7	2,850.6	2,761.0	7.8	12.7	43.90	676.5	-97.9	425.2	412.4	12.79	33.230	
3,000.0	2,972.1	2,949.5	2,855.9	8.1	13.2	44.25	704.0	-102.1	439.5	426.2	13.36	32.899	
3,100.0	3,070.8	3,048.3	2,950.8	8.5	13.7	44.59	731.6	-106.2	454.6	440.7	13.90	32.696	
3,200.0	3,169.7	3,147.0	3,045.4	8.7	14.2	44.77	759.0	-110.4	470.9	456.5	14.41	32.683	
3,300.0	3,268.9	3,245.4	3,139.9	9.0	14.7	44.81	786.4	-114.5	488.5	473.6	14.87	32.842	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3B-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	18.2	0.0	18.2				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	18.2	0.0	18.2	17.9	0.30	59.977	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	18.2	0.0	18.2	17.6	0.65	27.904	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	18.2	0.0	18.2	17.2	1.00	18.181	CC, ES
400.0	400.0	399.3	399.3	0.7	0.7	-0.88	19.9	-0.3	19.9	18.6	1.35	14.747	
500.0	500.0	498.4	498.3	0.8	0.9	-2.79	25.0	-1.2	25.1	23.4	1.71	14.696	SF
600.0	600.0	597.1	596.6	1.0	1.1	29.52	33.4	-2.7	32.9	30.8	2.04	16.084	
700.0	700.0	695.4	694.1	1.2	1.3	29.44	45.0	-4.8	42.6	40.2	2.39	17.810	
800.0	799.9	793.1	790.6	1.4	1.6	29.88	59.9	-7.5	54.2	51.5	2.74	19.769	
900.0	899.7	890.1	886.0	1.6	2.0	30.53	77.8	-10.7	67.7	64.6	3.09	21.862	
1,000.0	999.4	986.4	979.9	1.8	2.4	31.22	98.8	-14.5	82.9	79.5	3.45	24.019	
1,100.0	1,098.9	1,083.4	1,073.7	2.0	2.8	31.94	122.7	-18.8	99.7	95.9	3.82	26.094	
1,200.0	1,198.3	1,182.1	1,169.2	2.2	3.2	32.87	147.5	-23.3	115.6	111.4	4.21	27.475	
1,300.0	1,297.4	1,281.0	1,264.8	2.5	3.7	33.99	172.3	-27.7	130.0	125.4	4.61	28.204	
1,400.0	1,396.3	1,380.1	1,360.6	2.8	4.1	35.27	197.3	-32.2	143.1	138.1	5.04	28.406	
1,500.0	1,494.9	1,479.3	1,456.6	3.1	4.6	36.72	222.2	-36.7	154.9	149.4	5.50	28.173	
1,600.0	1,593.4	1,578.6	1,552.5	3.4	5.1	38.21	247.2	-41.2	166.1	160.1	5.98	27.751	
1,700.0	1,691.9	1,677.9	1,648.5	3.7	5.5	39.52	272.1	-45.7	177.3	170.8	6.49	27.336	
1,800.0	1,790.4	1,777.2	1,744.5	4.1	6.0	40.66	297.1	-50.2	188.7	181.7	7.00	26.937	
1,900.0	1,888.9	1,876.5	1,840.5	4.4	6.5	41.68	322.1	-54.7	200.1	192.5	7.53	26.558	
2,000.0	1,987.3	1,975.8	1,936.5	4.7	7.0	42.58	347.0	-59.2	211.5	203.5	8.07	26.203	
2,100.0	2,085.8	2,075.1	2,032.5	5.1	7.4	43.40	372.0	-63.7	223.1	214.4	8.62	25.871	
2,200.0	2,184.3	2,174.3	2,128.5	5.4	7.9	44.13	396.9	-68.1	234.6	225.4	9.18	25.562	
2,300.0	2,282.8	2,273.6	2,224.5	5.7	8.4	44.79	421.9	-72.6	246.2	236.5	9.74	25.275	
2,400.0	2,381.3	2,372.9	2,320.5	6.1	8.8	45.40	446.9	-77.1	257.8	247.5	10.31	25.008	
2,500.0	2,479.7	2,472.2	2,416.5	6.4	9.3	45.95	471.8	-81.6	269.5	258.6	10.88	24.761	
2,600.0	2,578.2	2,571.5	2,512.5	6.8	9.8	46.46	496.8	-86.1	281.1	269.7	11.46	24.531	
2,700.0	2,676.7	2,670.8	2,608.5	7.1	10.3	46.92	521.7	-90.6	292.8	280.8	12.04	24.318	
2,800.0	2,775.2	2,770.1	2,704.5	7.4	10.7	47.35	546.7	-95.1	304.5	291.9	12.63	24.119	
2,900.0	2,873.7	2,869.4	2,800.5	7.8	11.2	47.75	571.7	-99.6	316.3	303.0	13.21	23.934	
3,000.0	2,972.1	2,968.6	2,896.5	8.1	11.7	48.13	596.6	-104.1	328.0	314.2	13.80	23.761	
3,100.0	3,070.8	3,067.9	2,992.4	8.5	12.2	48.43	621.6	-108.6	340.4	326.1	14.37	23.698	
3,200.0	3,169.7	3,166.9	3,088.2	8.7	12.6	48.52	646.5	-113.0	354.0	339.1	14.88	23.794	
3,300.0	3,268.9	3,265.8	3,183.8	9.0	13.1	48.41	671.3	-117.5	368.8	353.4	15.34	24.037	
3,400.0	3,368.3	3,364.5	3,279.2	9.3	13.6	48.13	696.2	-122.0	384.6	368.9	15.75	24.415	
3,500.0	3,467.8	3,463.0	3,374.4	9.5	14.0	47.70	720.9	-126.4	401.7	385.6	16.12	24.919	
3,600.0	3,567.5	3,561.2	3,469.3	9.7	14.5	47.15	745.6	-130.9	420.0	403.5	16.44	25.544	
3,700.0	3,667.3	3,659.1	3,564.0	9.9	15.0	46.50	770.2	-135.3	439.5	422.8	16.72	26.284	
3,800.0	3,767.3	3,756.7	3,658.3	10.0	15.4	45.77	794.7	-139.7	460.3	443.3	16.96	27.134	
3,900.0	3,867.2	3,853.9	3,752.3	10.2	15.9	44.97	819.2	-144.1	482.3	465.2	17.17	28.091	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3C-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	7.3	0.0	7.3				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	7.3	0.0	7.3	7.0	0.30	23.991	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	7.3	0.0	7.3	6.6	0.65	11.161	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	7.3	0.0	7.3	6.3	1.00	7.272	
400.0	400.0	400.0	400.0	0.7	0.7	0.00	7.3	0.0	7.3	5.9	1.35	5.393	CC, ES
500.0	500.0	499.9	499.9	0.8	0.9	-1.90	8.1	-0.3	8.1	6.4	1.70	4.776	
600.0	600.0	599.7	599.7	1.0	1.0	30.04	10.6	-1.1	9.9	7.8	2.05	4.828	
700.0	700.0	699.5	699.4	1.2	1.2	31.08	14.7	-2.4	11.8	9.4	2.40	4.937	
800.0	799.9	799.3	798.9	1.4	1.4	33.58	20.5	-4.3	14.0	11.2	2.75	5.085	
900.0	899.7	899.0	898.3	1.6	1.6	36.86	27.9	-6.7	16.4	13.3	3.11	5.263	
1,000.0	999.4	998.7	997.6	1.8	1.8	40.50	37.0	-9.7	19.1	15.6	3.49	5.465	
1,100.0	1,098.9	1,098.3	1,096.6	2.0	2.1	44.22	47.7	-13.1	22.1	18.2	3.88	5.680	
1,200.0	1,198.3	1,197.9	1,195.3	2.2	2.3	47.86	60.0	-17.1	25.4	21.1	4.31	5.897	
1,300.0	1,297.4	1,297.4	1,293.7	2.5	2.6	51.30	74.0	-21.7	29.2	24.4	4.78	6.106	
1,400.0	1,396.3	1,396.9	1,391.8	2.8	2.9	54.50	89.6	-26.7	33.4	28.1	5.30	6.301	
1,500.0	1,494.9	1,496.3	1,489.6	3.1	3.3	57.44	106.7	-32.3	38.0	32.1	5.86	6.475	
1,600.0	1,593.4	1,595.6	1,586.9	3.4	3.6	59.16	125.5	-38.4	43.5	37.0	6.45	6.732	
1,700.0	1,691.9	1,695.4	1,684.5	3.7	4.0	59.73	145.2	-44.8	49.6	42.6	7.04	7.050	
1,800.0	1,790.4	1,795.2	1,782.2	4.1	4.4	60.17	165.0	-51.2	55.8	48.2	7.64	7.310	
1,900.0	1,888.9	1,895.0	1,879.8	4.4	4.8	60.52	184.7	-57.6	62.0	53.8	8.24	7.526	
2,000.0	1,987.3	1,994.8	1,977.4	4.7	5.1	60.81	204.4	-64.1	68.2	59.3	8.85	7.707	
2,100.0	2,085.8	2,094.6	2,075.0	5.1	5.5	61.05	224.2	-70.5	74.4	64.9	9.46	7.861	
2,200.0	2,184.3	2,194.4	2,172.7	5.4	5.9	61.26	243.9	-76.9	80.6	70.5	10.08	7.993	
2,300.0	2,282.8	2,294.2	2,270.3	5.7	6.3	61.43	263.6	-83.3	86.8	76.1	10.70	8.108	
2,400.0	2,381.3	2,394.0	2,367.9	6.1	6.7	61.58	283.4	-89.7	93.0	81.6	11.33	8.207	
2,500.0	2,479.7	2,493.8	2,465.5	6.4	7.1	61.72	303.1	-96.1	99.1	87.2	11.95	8.295	
2,600.0	2,578.2	2,593.6	2,563.2	6.8	7.5	61.83	322.8	-102.5	105.3	92.8	12.58	8.373	
2,700.0	2,676.7	2,693.4	2,660.8	7.1	7.9	61.94	342.6	-108.9	111.5	98.3	13.21	8.442	
2,800.0	2,775.2	2,793.3	2,758.4	7.4	8.3	62.03	362.3	-115.4	117.7	103.9	13.84	8.504	
2,900.0	2,873.7	2,893.1	2,856.1	7.8	8.7	62.11	382.0	-121.8	123.9	109.5	14.48	8.560	
3,000.0	2,972.1	2,992.9	2,953.7	8.1	9.1	62.19	401.8	-128.2	130.1	115.0	15.11	8.611	
3,100.0	3,070.8	3,092.6	3,051.3	8.5	9.5	61.93	421.5	-134.6	136.8	121.1	15.69	8.721	
3,200.0	3,169.7	3,192.3	3,148.8	8.7	9.9	61.10	441.2	-141.0	144.3	128.2	16.18	8.922	
3,300.0	3,268.9	3,291.9	3,246.2	9.0	10.3	59.79	460.9	-147.4	152.8	136.2	16.58	9.214	
3,400.0	3,368.3	3,391.4	3,343.5	9.3	10.7	58.11	480.6	-153.8	162.2	145.3	16.90	9.597	
3,500.0	3,467.8	3,490.6	3,440.5	9.5	11.1	56.14	500.2	-160.2	172.7	155.6	17.14	10.075	
3,600.0	3,567.5	3,589.7	3,537.4	9.7	11.5	53.99	519.8	-166.5	184.4	167.1	17.31	10.653	
3,700.0	3,667.3	3,688.5	3,634.1	9.9	11.8	51.71	539.3	-172.9	197.5	180.0	17.42	11.333	
3,800.0	3,767.3	3,787.1	3,730.5	10.0	12.2	49.38	558.8	-179.2	211.9	194.4	17.49	12.119	
3,900.0	3,867.2	3,885.3	3,826.7	10.2	12.6	47.05	578.3	-185.5	227.9	210.4	17.52	13.011	
4,000.0	3,967.2	3,983.3	3,922.5	10.3	13.0	11.25	597.6	-191.8	245.5	224.8	20.65	11.887	
4,100.0	4,067.2	4,081.1	4,018.1	10.4	13.4	9.05	617.0	-198.1	263.9	242.4	21.43	12.312	
4,200.0	4,167.2	4,181.7	4,116.6	10.5	13.8	7.12	636.5	-204.5	282.3	260.2	22.17	12.732	
4,300.0	4,267.2	4,284.7	4,217.7	10.7	14.2	5.52	655.0	-210.5	299.6	276.7	22.86	13.108	
4,400.0	4,367.2	4,388.4	4,319.9	10.8	14.5	4.22	671.9	-215.9	315.3	291.9	23.47	13.434	
4,500.0	4,467.2	4,492.6	4,422.9	10.9	14.8	3.17	687.0	-220.9	329.6	305.5	24.04	13.710	
4,600.0	4,567.2	4,597.5	4,526.8	11.0	15.1	2.30	700.5	-225.2	342.2	317.6	24.56	13.935	
4,700.0	4,667.2	4,702.8	4,631.4	11.2	15.4	1.61	712.2	-229.0	353.2	328.1	25.03	14.110	
4,800.0	4,767.2	4,808.6	4,736.7	11.3	15.6	1.06	722.0	-232.2	362.5	337.0	25.46	14.235	
4,900.0	4,867.2	4,914.7	4,842.4	11.4	15.9	0.63	730.1	-234.9	370.0	344.2	25.86	14.312	
5,000.0	4,967.2	5,021.1	4,948.6	11.5	16.0	0.31	736.3	-236.9	375.9	349.6	26.21	14.340	
5,100.0	5,067.2	5,127.6	5,055.1	11.7	16.2	0.09	740.7	-238.3	379.9	353.4	26.53	14.321	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3C-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,167.2	5,234.4	5,161.8	11.8	16.3	-0.03	743.1	-239.1	382.2	355.4	26.81	14.255	
5,300.0	5,267.2	5,339.8	5,267.2	11.9	16.4	-0.06	743.7	-239.3	382.8	355.7	27.07	14.141	
5,400.0	5,367.2	5,439.8	5,367.2	12.1	16.5	-0.06	743.7	-239.3	382.8	355.5	27.32	14.013	
5,500.0	5,467.2	5,539.8	5,467.2	12.2	16.6	-0.06	743.7	-239.3	382.8	355.2	27.57	13.886	
5,600.0	5,567.2	5,639.8	5,567.2	12.4	16.7	-0.06	743.7	-239.3	382.8	355.0	27.82	13.761	
5,700.0	5,667.2	5,739.8	5,667.2	12.5	16.8	-0.06	743.7	-239.3	382.8	354.7	28.07	13.637	
5,800.0	5,767.2	5,839.8	5,767.2	12.6	16.9	-0.06	743.7	-239.3	382.8	354.5	28.33	13.514	
5,900.0	5,867.2	5,939.8	5,867.2	12.8	17.0	-0.06	743.7	-239.3	382.8	354.2	28.58	13.392	
6,000.0	5,967.2	6,039.8	5,967.2	12.9	17.1	-0.06	743.7	-239.3	382.8	354.0	28.84	13.272	
6,100.0	6,067.2	6,139.8	6,067.2	13.1	17.3	-0.06	743.7	-239.3	382.8	353.7	29.10	13.153	
6,147.3	6,114.6	6,187.1	6,114.6	13.1	17.3	-90.17	743.7	-239.3	382.8	359.8	22.99	16.654	
6,200.0	6,167.2	6,239.8	6,167.2	13.2	17.4	-90.31	743.7	-239.3	382.8	359.7	23.13	16.551	
6,300.0	6,266.1	6,338.7	6,266.1	13.2	17.5	-92.33	743.7	-239.3	383.1	360.0	23.12	16.570	
6,400.0	6,362.2	6,436.2	6,363.6	13.2	17.6	-96.10	743.7	-238.9	385.2	362.3	22.92	16.804	
6,500.0	6,453.5	6,539.7	6,466.5	13.2	17.6	-100.42	743.7	-228.2	389.9	367.1	22.74	17.143	
6,600.0	6,538.3	6,648.7	6,571.9	13.2	17.6	-104.57	743.7	-201.0	396.7	374.0	22.73	17.456	
6,700.0	6,614.9	6,763.6	6,677.2	13.3	17.6	-108.42	743.7	-155.4	405.1	382.2	22.94	17.658	
6,800.0	6,681.8	6,884.8	6,778.9	13.5	17.6	-111.90	743.7	-89.6	414.4	390.9	23.46	17.667	
6,900.0	6,737.8	7,012.6	6,872.5	14.0	17.8	-114.88	743.7	-2.9	423.6	399.3	24.33	17.410	
7,000.0	6,781.6	7,146.7	6,952.5	14.8	18.1	-117.28	743.7	104.4	431.9	406.2	25.71	16.799	
7,100.0	6,812.6	7,286.1	7,013.0	16.0	18.8	-119.02	743.7	229.8	438.3	410.6	27.67	15.840	
7,200.0	6,830.0	7,429.4	7,048.7	17.6	20.1	-120.00	743.7	368.3	442.1	411.9	30.26	14.611	
7,300.0	6,834.0	7,563.2	7,057.0	19.4	21.9	-120.23	743.7	501.7	443.0	409.6	33.41	13.260	
7,400.0	6,834.0	7,663.2	7,057.0	21.3	23.5	-120.23	743.7	601.7	443.0	406.1	36.84	12.026	
7,500.0	6,834.0	7,763.2	7,057.0	23.4	25.3	-120.23	743.7	701.7	443.0	402.6	40.42	10.959	
7,600.0	6,834.0	7,863.2	7,057.0	25.5	27.2	-120.23	743.7	801.7	443.0	398.8	44.13	10.038	
7,700.0	6,834.0	7,963.2	7,057.0	27.6	29.3	-120.23	743.7	901.7	443.0	395.0	47.93	9.241	
7,800.0	6,834.0	8,063.2	7,057.0	29.9	31.3	-120.23	743.7	1,001.7	443.0	391.1	51.81	8.549	
7,900.0	6,834.0	8,163.2	7,057.0	32.1	33.5	-120.23	743.7	1,101.7	442.9	387.2	55.75	7.945	
8,000.0	6,834.0	8,263.2	7,057.0	34.4	35.7	-120.23	743.7	1,201.7	442.9	383.2	59.74	7.415	
8,100.0	6,834.0	8,363.2	7,057.0	36.7	37.9	-120.23	743.7	1,301.7	442.9	379.2	63.76	6.947	
8,200.0	6,834.0	8,463.2	7,057.0	39.0	40.2	-120.23	743.7	1,401.7	442.9	375.1	67.81	6.532	
8,300.0	6,834.0	8,563.2	7,057.0	41.4	42.5	-120.23	743.7	1,501.7	442.9	371.0	71.89	6.161	
8,400.0	6,834.0	8,663.2	7,057.0	43.8	44.8	-120.23	743.7	1,601.7	442.9	366.9	76.00	5.828	
8,500.0	6,834.0	8,763.2	7,057.0	46.1	47.1	-120.23	743.7	1,701.7	442.9	362.8	80.12	5.528	
8,600.0	6,834.0	8,863.2	7,057.0	48.5	49.4	-120.23	743.7	1,801.7	442.9	358.7	84.26	5.257	
8,700.0	6,834.0	8,963.2	7,057.0	50.9	51.8	-120.23	743.7	1,901.7	442.9	354.5	88.41	5.010	
8,800.0	6,834.0	9,063.2	7,057.0	53.3	54.2	-120.23	743.7	2,001.7	442.9	350.3	92.57	4.785	
8,900.0	6,834.0	9,163.2	7,057.0	55.7	56.5	-120.23	743.7	2,101.7	442.9	346.2	96.74	4.578	
9,000.0	6,834.0	9,263.2	7,057.0	58.1	58.9	-120.23	743.7	2,201.7	442.9	342.0	100.92	4.388	
9,100.0	6,834.0	9,363.2	7,057.0	60.5	61.3	-120.23	743.6	2,301.7	442.9	337.8	105.11	4.213	
9,200.0	6,834.0	9,463.2	7,057.0	63.0	63.7	-120.23	743.6	2,401.7	442.9	333.6	109.31	4.052	
9,300.0	6,834.0	9,563.2	7,057.0	65.4	66.1	-120.23	743.6	2,501.7	442.9	329.4	113.51	3.902	
9,400.0	6,834.0	9,663.2	7,057.0	67.8	68.5	-120.23	743.6	2,601.7	442.9	325.1	117.72	3.762	
9,500.0	6,834.0	9,763.2	7,057.0	70.3	70.9	-120.23	743.6	2,701.7	442.9	320.9	121.93	3.632	
9,600.0	6,834.0	9,863.2	7,057.0	72.7	73.3	-120.24	743.6	2,801.7	442.9	316.7	126.15	3.511	
9,700.0	6,834.0	9,963.2	7,057.0	75.1	75.8	-120.24	743.6	2,901.7	442.8	312.5	130.37	3.397	
9,800.0	6,834.0	10,063.2	7,057.0	77.6	78.2	-120.24	743.6	3,001.7	442.8	308.2	134.60	3.290	
9,900.0	6,834.0	10,163.2	7,057.0	80.0	80.6	-120.24	743.6	3,101.7	442.8	304.0	138.83	3.190	
10,000.0	6,834.0	10,263.2	7,057.0	82.5	83.0	-120.24	743.6	3,201.7	442.8	299.8	143.06	3.095	
10,100.0	6,834.0	10,363.2	7,057.0	84.9	85.5	-120.24	743.6	3,301.7	442.8	295.5	147.29	3.006	
10,200.0	6,834.0	10,463.2	7,057.0	87.3	87.9	-120.24	743.6	3,401.7	442.8	291.3	151.53	2.922	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3C-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,300.0	6,834.0	10,563.2	7,057.0	89.8	90.3	-120.24	743.6	3,501.7	442.8	287.0	155.77	2.843	
10,400.0	6,834.0	10,663.2	7,057.0	92.2	92.8	-120.24	743.6	3,601.7	442.8	282.8	160.01	2.767	
10,500.0	6,834.0	10,763.2	7,057.0	94.7	95.2	-120.24	743.6	3,701.7	442.8	278.6	164.25	2.696	
10,600.0	6,834.0	10,863.2	7,057.0	97.2	97.7	-120.24	743.6	3,801.7	442.8	274.3	168.50	2.628	
10,700.0	6,834.0	10,963.2	7,057.0	99.6	100.1	-120.24	743.6	3,901.7	442.8	270.1	172.74	2.563	
10,800.0	6,834.0	11,063.2	7,057.0	102.1	102.6	-120.24	743.6	4,001.7	442.8	265.8	176.99	2.502	
10,900.0	6,834.0	11,163.2	7,057.0	104.5	105.0	-120.24	743.6	4,101.7	442.8	261.5	181.24	2.443	
11,000.0	6,834.0	11,263.2	7,057.0	107.0	107.5	-120.24	743.6	4,201.7	442.8	257.3	185.49	2.387	
11,100.0	6,834.0	11,363.2	7,057.0	109.4	109.9	-120.24	743.6	4,301.7	442.8	253.0	189.74	2.334	
11,200.0	6,834.0	11,463.2	7,057.0	111.9	112.4	-120.24	743.6	4,401.7	442.8	248.8	194.00	2.282	
11,300.0	6,834.0	11,563.2	7,057.0	114.3	114.8	-120.24	743.6	4,501.7	442.8	244.5	198.25	2.233	
11,379.8	6,834.0	11,643.0	7,057.0	116.3	116.8	-120.24	743.6	4,581.6	442.8	241.1	201.65	2.196	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3E-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-10.9	0.0	10.9				
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-10.9	0.0	10.9	10.6	0.30	35.986	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-10.9	0.0	10.9	10.3	0.65	16.742	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-10.9	0.0	10.9	9.9	1.00	10.909	
400.0	400.0	400.0	400.0	0.7	0.7	-180.00	-10.9	0.0	10.9	9.6	1.35	8.090	
500.0	500.0	500.0	500.0	0.8	0.9	-175.42	-10.8	-0.9	10.9	9.2	1.70	6.392	
503.1	503.1	503.1	503.1	0.9	0.9	-141.64	-10.8	-0.9	10.9	9.2	1.71	6.351	CC, ES
600.0	600.0	600.0	599.9	1.0	1.0	-131.66	-10.6	-3.5	11.7	9.6	2.05	5.683	
700.0	700.0	699.9	699.7	1.2	1.2	-122.13	-10.1	-7.8	14.3	11.8	2.41	5.910	
800.0	799.9	799.6	799.3	1.4	1.4	-115.60	-9.4	-13.9	18.6	15.8	2.78	6.682	
900.0	899.7	899.3	898.7	1.6	1.6	-111.77	-8.6	-21.6	24.6	21.4	3.17	7.747	
1,000.0	999.4	998.8	997.7	1.8	1.8	-109.68	-7.6	-31.1	32.1	28.5	3.58	8.954	
1,100.0	1,098.9	1,098.0	1,096.3	2.0	2.1	-108.60	-6.3	-42.2	41.0	37.0	4.02	10.216	
1,200.0	1,198.3	1,197.1	1,194.5	2.2	2.3	-108.09	-5.0	-55.0	51.5	47.0	4.49	11.475	
1,300.0	1,297.4	1,296.4	1,292.9	2.5	2.6	-108.52	-3.5	-68.8	62.9	57.9	4.98	12.632	
1,400.0	1,396.3	1,395.6	1,391.1	2.8	2.9	-110.05	-2.0	-82.5	75.0	69.5	5.51	13.616	
1,500.0	1,494.9	1,494.8	1,489.3	3.1	3.2	-112.19	-0.5	-96.2	87.7	81.6	6.06	14.480	
1,600.0	1,593.4	1,593.8	1,587.4	3.4	3.4	-114.33	1.0	-109.9	100.9	94.3	6.62	15.247	
1,700.0	1,691.9	1,692.9	1,685.5	3.7	3.7	-115.98	2.5	-123.6	114.2	107.0	7.18	15.899	
1,800.0	1,790.4	1,792.0	1,783.6	4.1	4.0	-117.28	4.0	-137.3	127.5	119.8	7.75	16.458	
1,900.0	1,888.9	1,891.0	1,881.7	4.4	4.3	-118.33	5.5	-151.0	140.9	132.6	8.32	16.941	
2,000.0	1,987.3	1,990.1	1,979.8	4.7	4.6	-119.21	7.0	-164.8	154.4	145.5	8.89	17.362	
2,100.0	2,085.8	2,089.2	2,077.9	5.1	4.9	-119.94	8.5	-178.5	167.9	158.4	9.47	17.732	
2,200.0	2,184.3	2,188.8	2,176.7	5.4	5.2	-120.65	9.9	-192.0	181.3	171.2	10.04	18.062	
2,300.0	2,282.8	2,289.0	2,276.1	5.7	5.4	-121.73	11.2	-203.9	194.2	183.6	10.58	18.357	
2,400.0	2,381.3	2,389.1	2,375.7	6.1	5.7	-123.13	12.3	-214.2	206.7	195.6	11.10	18.629	
2,500.0	2,479.7	2,489.2	2,475.4	6.4	5.9	-124.81	13.3	-222.7	218.9	207.3	11.58	18.899	
2,600.0	2,578.2	2,589.2	2,575.1	6.8	6.1	-126.74	14.0	-229.5	230.8	218.7	12.03	19.185	
2,700.0	2,676.7	2,688.9	2,674.8	7.1	6.3	-128.88	14.5	-234.5	242.6	230.1	12.44	19.503	
2,800.0	2,775.2	2,788.5	2,774.2	7.4	6.4	-131.20	14.9	-237.8	254.4	241.6	12.80	19.869	
2,900.0	2,873.7	2,887.7	2,873.4	7.8	6.6	-133.67	15.1	-239.4	266.4	253.3	13.13	20.295	
3,000.0	2,972.1	2,986.4	2,972.1	8.1	6.7	-136.21	15.1	-239.5	278.8	265.4	13.42	20.774	
3,100.0	3,070.8	3,085.0	3,070.8	8.5	6.8	-138.51	15.1	-239.5	290.9	277.2	13.70	21.230	
3,200.0	3,169.7	3,184.0	3,169.7	8.7	7.0	-140.41	15.1	-239.5	302.0	288.1	13.98	21.608	
3,300.0	3,268.9	3,283.1	3,268.9	9.0	7.1	-141.97	15.1	-239.5	312.1	297.9	14.25	21.898	
3,400.0	3,368.3	3,382.5	3,368.3	9.3	7.3	-143.25	15.1	-239.5	321.0	306.5	14.53	22.094	
3,500.0	3,467.8	3,482.1	3,467.8	9.5	7.4	-144.27	15.1	-239.5	328.6	313.8	14.81	22.194	
3,600.0	3,567.5	3,581.8	3,567.5	9.7	7.5	-145.07	15.1	-239.5	334.9	319.8	15.08	22.199	
3,700.0	3,667.3	3,681.6	3,667.3	9.9	7.7	-145.67	15.1	-239.5	339.7	324.4	15.37	22.110	
3,800.0	3,767.3	3,781.5	3,767.3	10.0	7.8	-146.09	15.1	-239.5	343.2	327.6	15.65	21.931	
3,900.0	3,867.2	3,881.5	3,867.2	10.2	8.0	-146.32	15.1	-239.5	345.2	329.3	15.94	21.665	
4,000.0	3,967.2	3,981.5	3,967.2	10.3	8.1	-179.89	15.1	-239.5	345.8	329.5	16.33	21.180	
4,100.0	4,067.2	4,081.5	4,067.2	10.4	8.3	-179.89	15.1	-239.5	345.8	329.2	16.63	20.792	
4,200.0	4,167.2	4,181.5	4,167.2	10.5	8.4	-179.89	15.1	-239.5	345.8	328.9	16.94	20.417	
4,300.0	4,267.2	4,281.5	4,267.2	10.7	8.6	-179.89	15.1	-239.5	345.8	328.6	17.25	20.053	
4,400.0	4,367.2	4,381.5	4,367.2	10.8	8.7	-179.89	15.1	-239.5	345.8	328.3	17.55	19.701	
4,500.0	4,467.2	4,481.5	4,467.2	10.9	8.9	-179.89	15.1	-239.5	345.8	328.0	17.86	19.359	
4,600.0	4,567.2	4,581.5	4,567.2	11.0	9.0	-179.89	15.1	-239.5	345.8	327.7	18.17	19.028	
4,700.0	4,667.2	4,681.5	4,667.2	11.2	9.2	-179.89	15.1	-239.5	345.8	327.3	18.49	18.707	
4,800.0	4,767.2	4,781.5	4,767.2	11.3	9.3	-179.89	15.1	-239.5	345.8	327.0	18.80	18.396	
4,900.0	4,867.2	4,881.5	4,867.2	11.4	9.5	-179.89	15.1	-239.5	345.8	326.7	19.11	18.093	
5,000.0	4,967.2	4,981.5	4,967.2	11.5	9.7	-179.89	15.1	-239.5	345.8	326.4	19.43	17.800	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3E-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,067.2	5,081.5	5,067.2	11.7	9.8	-179.89	15.1	-239.5	345.8	326.1	19.75	17.515	
5,200.0	5,167.2	5,181.5	5,167.2	11.8	10.0	-179.89	15.1	-239.5	345.8	325.8	20.06	17.238	
5,300.0	5,267.2	5,281.5	5,267.2	11.9	10.1	-179.89	15.1	-239.5	345.8	325.5	20.38	16.969	
5,400.0	5,367.2	5,381.5	5,367.2	12.1	10.3	-179.89	15.1	-239.5	345.8	325.1	20.70	16.707	
5,500.0	5,467.2	5,481.5	5,467.2	12.2	10.4	-179.89	15.1	-239.5	345.8	324.8	21.02	16.453	
5,600.0	5,567.2	5,581.5	5,567.2	12.4	10.6	-179.89	15.1	-239.5	345.8	324.5	21.34	16.206	
5,700.0	5,667.2	5,681.5	5,667.2	12.5	10.8	-179.89	15.1	-239.5	345.8	324.2	21.66	15.966	
5,800.0	5,767.2	5,781.5	5,767.2	12.6	10.9	-179.89	15.1	-239.5	345.8	323.9	21.98	15.732	
5,900.0	5,867.2	5,881.5	5,867.2	12.8	11.1	-179.89	15.1	-239.5	345.8	323.5	22.31	15.504	
6,000.0	5,967.2	5,981.5	5,967.2	12.9	11.2	-179.89	15.1	-239.5	345.8	323.2	22.63	15.282	
6,100.0	6,067.2	6,081.5	6,067.2	13.1	11.4	-179.89	15.1	-239.5	345.8	322.9	22.95	15.067	
6,145.7	6,112.9	6,127.2	6,112.9	13.1	11.5	90.23	15.1	-239.5	345.8	322.9	22.96	15.063	
6,200.0	6,167.2	6,181.4	6,167.2	13.2	11.6	90.39	15.1	-239.5	345.8	322.7	23.13	14.951	
6,300.0	6,266.1	6,280.4	6,266.1	13.2	11.7	92.62	15.1	-239.5	346.2	322.8	23.44	14.771	
6,400.0	6,362.2	6,376.5	6,362.2	13.2	11.9	96.77	15.1	-239.5	348.6	324.9	23.71	14.701	
6,500.0	6,453.5	6,477.0	6,462.6	13.2	12.0	102.17	15.1	-235.0	355.0	331.2	23.84	14.890	
6,600.0	6,538.3	6,585.1	6,568.6	13.2	12.0	107.45	15.1	-214.7	364.9	341.1	23.74	15.368	
6,700.0	6,614.9	6,700.5	6,677.1	13.3	12.0	112.35	15.1	-175.8	377.4	353.9	23.48	16.071	
6,800.0	6,681.8	6,824.1	6,784.8	13.5	12.0	116.76	15.1	-115.4	391.3	368.1	23.23	16.842	
6,900.0	6,737.8	6,956.5	6,886.8	14.0	12.2	120.54	15.1	-31.2	405.3	382.1	23.27	17.419	
7,000.0	6,781.6	7,097.9	6,976.6	14.8	12.9	123.60	15.1	77.7	418.0	394.1	23.94	17.459	
7,100.0	6,812.6	7,247.3	7,046.3	16.0	14.2	125.81	15.1	209.5	427.9	402.3	25.58	16.726	
7,200.0	6,830.0	7,402.6	7,088.2	17.6	16.4	127.07	15.1	358.8	433.8	405.4	28.34	15.305	
7,300.0	6,834.0	7,546.1	7,098.0	19.4	19.0	127.35	15.1	501.7	435.1	403.3	31.84	13.664	
7,400.0	6,834.0	7,646.1	7,098.0	21.3	21.0	127.35	15.1	601.7	435.1	400.2	34.92	12.459	
7,500.0	6,834.0	7,746.1	7,098.0	23.4	23.0	127.35	15.1	701.7	435.1	397.0	38.16	11.403	
7,600.0	6,834.0	7,846.1	7,098.0	25.5	25.2	127.35	15.1	801.7	435.1	393.6	41.51	10.481	
7,700.0	6,834.0	7,946.1	7,098.0	27.6	27.4	127.35	15.1	901.7	435.1	390.2	44.97	9.677	
7,800.0	6,834.0	8,046.1	7,098.0	29.9	29.6	127.35	15.1	1,001.7	435.1	386.6	48.49	8.973	
7,900.0	6,834.0	8,146.1	7,098.0	32.1	31.9	127.35	15.1	1,101.7	435.1	383.1	52.08	8.355	
8,000.0	6,834.0	8,246.1	7,098.0	34.4	34.2	127.35	15.1	1,201.7	435.1	379.4	55.71	7.810	
8,100.0	6,834.0	8,346.1	7,098.0	36.7	36.5	127.35	15.1	1,301.7	435.1	375.8	59.39	7.327	
8,200.0	6,834.0	8,446.1	7,098.0	39.0	38.8	127.35	15.1	1,401.7	435.1	372.1	63.09	6.897	
8,300.0	6,834.0	8,546.1	7,098.0	41.4	41.2	127.35	15.1	1,501.7	435.2	368.3	66.83	6.512	
8,400.0	6,834.0	8,646.1	7,098.0	43.8	43.6	127.35	15.1	1,601.7	435.2	364.6	70.58	6.165	
8,500.0	6,834.0	8,746.1	7,098.0	46.1	45.9	127.35	15.1	1,701.7	435.2	360.8	74.36	5.852	
8,600.0	6,834.0	8,846.1	7,098.0	48.5	48.3	127.35	15.1	1,801.7	435.2	357.0	78.15	5.568	
8,700.0	6,834.0	8,946.1	7,098.0	50.9	50.7	127.35	15.1	1,901.7	435.2	353.2	81.96	5.310	
8,800.0	6,834.0	9,046.1	7,098.0	53.3	53.1	127.35	15.1	2,001.7	435.2	349.4	85.77	5.073	
8,900.0	6,834.0	9,146.1	7,098.0	55.7	55.5	127.35	15.0	2,101.7	435.2	345.6	89.60	4.857	
9,000.0	6,834.0	9,246.1	7,098.0	58.1	58.0	127.35	15.0	2,201.7	435.2	341.7	93.44	4.657	
9,100.0	6,834.0	9,346.1	7,098.0	60.5	60.4	127.35	15.0	2,301.7	435.2	337.9	97.29	4.473	
9,200.0	6,834.0	9,446.1	7,098.0	63.0	62.8	127.35	15.0	2,401.7	435.2	334.0	101.14	4.303	
9,300.0	6,834.0	9,546.1	7,098.0	65.4	65.2	127.35	15.0	2,501.7	435.2	330.2	105.00	4.145	
9,400.0	6,834.0	9,646.1	7,098.0	67.8	67.7	127.35	15.0	2,601.7	435.2	326.3	108.87	3.997	
9,500.0	6,834.0	9,746.1	7,098.0	70.3	70.1	127.35	15.0	2,701.7	435.2	322.5	112.74	3.860	
9,600.0	6,834.0	9,846.1	7,098.0	72.7	72.5	127.35	15.0	2,801.7	435.2	318.6	116.62	3.732	
9,700.0	6,834.0	9,946.1	7,098.0	75.1	75.0	127.34	15.0	2,901.7	435.2	314.7	120.50	3.612	
9,800.0	6,834.0	10,046.1	7,098.0	77.6	77.4	127.34	15.0	3,001.7	435.2	310.8	124.38	3.499	
9,900.0	6,834.0	10,146.1	7,098.0	80.0	79.9	127.34	15.0	3,101.7	435.2	306.9	128.27	3.393	
10,000.0	6,834.0	10,246.1	7,098.0	82.5	82.3	127.34	15.0	3,201.7	435.2	303.1	132.16	3.293	
10,100.0	6,834.0	10,346.1	7,098.0	84.9	84.8	127.34	15.0	3,301.7	435.2	299.2	136.06	3.199	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3E-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,200.0	6,834.0	10,446.1	7,098.0	87.3	87.2	127.34	15.0	3,401.7	435.2	295.3	139.95	3.110	
10,300.0	6,834.0	10,546.1	7,098.0	89.8	89.7	127.34	15.0	3,501.7	435.2	291.4	143.85	3.026	
10,400.0	6,834.0	10,646.1	7,098.0	92.2	92.1	127.34	15.0	3,601.7	435.2	287.5	147.75	2.946	
10,500.0	6,834.0	10,746.1	7,098.0	94.7	94.6	127.34	15.0	3,701.7	435.2	283.6	151.66	2.870	
10,600.0	6,834.0	10,846.1	7,098.0	97.2	97.0	127.34	15.0	3,801.7	435.2	279.7	155.56	2.798	
10,700.0	6,834.0	10,946.1	7,098.0	99.6	99.5	127.34	15.0	3,901.7	435.2	275.8	159.47	2.729	
10,800.0	6,834.0	11,046.1	7,098.0	102.1	101.9	127.34	15.0	4,001.7	435.2	271.9	163.38	2.664	
10,900.0	6,834.0	11,146.1	7,098.0	104.5	104.4	127.34	15.0	4,101.7	435.3	268.0	167.29	2.602	
11,000.0	6,834.0	11,246.1	7,098.0	107.0	106.8	127.34	15.0	4,201.7	435.3	264.0	171.21	2.542	
11,100.0	6,834.0	11,346.1	7,098.0	109.4	109.3	127.34	15.0	4,301.7	435.3	260.1	175.12	2.485	
11,200.0	6,834.0	11,446.1	7,098.0	111.9	111.8	127.34	15.0	4,401.7	435.3	256.2	179.03	2.431	
11,300.0	6,834.0	11,546.1	7,098.0	114.3	114.2	127.34	15.0	4,501.7	435.3	252.3	182.95	2.379	
11,379.8	6,834.0	11,625.9	7,098.0	116.3	116.2	127.34	15.0	4,581.5	435.3	249.2	186.08	2.339	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3F-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-21.9	0.0	21.9				
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-21.9	0.0	21.9	21.6	0.30	71.972	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-21.9	0.0	21.9	21.2	0.65	33.484	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-21.9	0.0	21.9	20.9	1.00	21.817	CC, ES
400.0	400.0	399.7	399.7	0.7	0.7	-178.79	-22.6	-0.5	22.6	21.2	1.35	16.728	
500.0	500.0	499.3	499.2	0.8	0.9	-175.58	-24.7	-1.9	24.8	23.1	1.70	14.618	
600.0	600.0	598.8	598.6	1.0	1.0	-138.99	-28.4	-4.3	29.4	27.3	2.05	14.322	SF
700.0	700.0	698.0	697.6	1.2	1.2	-137.47	-33.4	-7.6	36.8	34.4	2.40	15.324	
800.0	799.9	796.8	796.1	1.4	1.4	-137.05	-39.8	-11.9	47.1	44.4	2.76	17.084	
900.0	899.7	895.1	894.0	1.6	1.7	-137.22	-47.6	-17.0	60.2	57.1	3.12	19.314	
1,000.0	999.4	992.7	991.0	1.8	1.9	-137.63	-56.7	-23.1	76.2	72.7	3.49	21.840	
1,100.0	1,098.9	1,089.6	1,087.1	2.0	2.2	-138.12	-67.2	-30.0	94.9	91.1	3.87	24.547	
1,200.0	1,198.3	1,185.7	1,182.2	2.2	2.4	-138.60	-78.8	-37.7	116.4	112.2	4.26	27.354	
1,300.0	1,297.4	1,280.8	1,276.0	2.5	2.7	-139.04	-91.7	-46.2	140.7	136.0	4.66	30.202	
1,400.0	1,396.3	1,376.8	1,370.5	2.8	3.1	-139.52	-105.6	-55.4	167.2	162.1	5.07	32.955	
1,500.0	1,494.9	1,472.8	1,465.1	3.1	3.4	-140.15	-119.5	-64.6	195.1	189.6	5.50	35.453	
1,600.0	1,593.4	1,568.6	1,559.4	3.4	3.7	-140.91	-133.3	-73.8	223.6	217.6	5.94	37.623	
1,700.0	1,691.9	1,664.4	1,653.8	3.7	4.0	-141.50	-147.2	-83.0	252.1	245.8	6.39	39.472	
1,800.0	1,790.4	1,760.2	1,748.1	4.1	4.3	-141.97	-161.1	-92.1	280.7	273.9	6.84	41.063	
1,900.0	1,888.9	1,856.0	1,842.5	4.4	4.7	-142.35	-175.0	-101.3	309.3	302.0	7.29	42.445	
2,000.0	1,987.3	1,951.8	1,936.8	4.7	5.0	-142.67	-188.8	-110.5	337.9	330.2	7.74	43.654	
2,100.0	2,085.8	2,047.6	2,031.2	5.1	5.3	-142.93	-202.7	-119.7	366.5	358.3	8.20	44.720	
2,200.0	2,184.3	2,143.4	2,125.5	5.4	5.6	-143.16	-216.6	-128.9	395.2	386.5	8.65	45.667	
2,300.0	2,282.8	2,239.2	2,219.9	5.7	6.0	-143.36	-230.4	-138.1	423.8	414.7	9.11	46.513	
2,400.0	2,381.3	2,335.0	2,314.2	6.1	6.3	-143.53	-244.3	-147.2	452.4	442.8	9.57	47.273	
2,500.0	2,479.7	2,430.8	2,408.6	6.4	6.6	-143.69	-258.2	-156.4	481.0	471.0	10.03	47.959	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - Qualls 3G-28H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-29.1	0.0	29.1	28.8	0.30	95.963	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.65	44.646	CC, ES
300.0	300.0	299.5	299.5	0.5	0.5	-179.43	-30.0	-0.3	30.0	29.0	1.00	29.929	
400.0	400.0	399.0	398.9	0.7	0.7	-177.91	-32.4	-1.2	32.4	31.1	1.35	24.029	
500.0	500.0	498.3	498.2	0.8	0.9	-175.83	-36.4	-2.7	36.6	34.9	1.70	21.533	
600.0	600.0	597.4	597.1	1.0	1.1	-140.81	-42.1	-4.7	43.1	41.1	2.05	21.065	SF
700.0	700.0	696.2	695.5	1.2	1.3	-140.45	-49.3	-7.3	52.7	50.3	2.40	21.987	
800.0	799.9	794.4	793.3	1.4	1.5	-140.79	-58.1	-10.5	65.3	62.5	2.75	23.747	
900.0	899.7	892.0	890.3	1.6	1.7	-141.44	-68.4	-14.3	80.8	77.7	3.10	26.040	
1,000.0	999.4	988.8	986.3	1.8	2.0	-142.20	-80.1	-18.5	99.3	95.9	3.46	28.683	
1,100.0	1,098.9	1,084.6	1,081.1	2.0	2.3	-142.94	-93.2	-23.3	120.8	117.0	3.83	31.553	
1,200.0	1,198.3	1,179.5	1,174.7	2.2	2.6	-143.62	-107.6	-28.6	145.2	141.0	4.20	34.567	
1,300.0	1,297.4	1,275.3	1,269.1	2.5	2.9	-144.29	-123.2	-34.2	172.1	167.5	4.58	37.544	
1,400.0	1,396.3	1,371.2	1,363.5	2.8	3.2	-145.02	-138.9	-39.9	200.4	195.4	4.97	40.283	
1,500.0	1,494.9	1,466.6	1,457.5	3.1	3.5	-145.78	-154.4	-45.6	230.1	224.7	5.37	42.827	
1,600.0	1,593.4	1,561.8	1,551.2	3.4	3.9	-146.62	-170.0	-51.3	260.6	254.8	5.78	45.054	
1,700.0	1,691.9	1,657.0	1,645.0	3.7	4.2	-147.27	-185.5	-56.9	291.0	284.8	6.20	46.974	
1,800.0	1,790.4	1,752.2	1,738.7	4.1	4.5	-147.81	-201.0	-62.6	321.6	315.0	6.61	48.644	
1,900.0	1,888.9	1,847.3	1,832.4	4.4	4.8	-148.25	-216.6	-68.2	352.1	345.1	7.03	50.107	
2,000.0	1,987.3	1,942.5	1,926.2	4.7	5.2	-148.62	-232.1	-73.9	382.7	375.2	7.44	51.400	
2,100.0	2,085.8	2,037.7	2,019.9	5.1	5.5	-148.94	-247.6	-79.5	413.2	405.4	7.86	52.550	
2,200.0	2,184.3	2,132.9	2,113.7	5.4	5.8	-149.21	-263.2	-85.2	443.8	435.5	8.28	53.579	
2,300.0	2,282.8	2,228.1	2,207.4	5.7	6.2	-149.45	-278.7	-90.8	474.4	465.7	8.70	54.504	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - SLATER 33-28 (EXISTING) - EXISTING - GYRO

Offset Site Error: 0.0 ft

Survey Program: 100-Gyro

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,600.0	6,834.0	6,823.0	6,819.1	72.7	6.2	-88.84	604.6	3,189.7	458.1	379.4	78.72	5.819	
9,700.0	6,834.0	6,822.7	6,818.7	75.1	6.2	-88.76	604.6	3,189.7	377.2	296.0	81.16	4.647	
9,800.0	6,834.0	6,822.4	6,818.4	77.6	6.2	-88.69	604.5	3,189.7	307.7	224.1	83.61	3.680	
9,900.0	6,834.0	6,822.1	6,818.1	80.0	6.2	-88.62	604.5	3,189.7	259.0	172.9	86.05	3.010	
9,987.9	6,834.0	6,821.8	6,817.9	82.2	6.2	-88.56	604.5	3,189.7	243.6	155.4	88.20	2.762	CC, ES
10,000.0	6,834.0	6,821.8	6,817.8	82.5	6.2	-88.55	604.5	3,189.7	243.9	155.4	88.49	2.756	SF
10,100.0	6,834.0	6,821.5	6,817.5	84.9	6.2	-88.48	604.5	3,189.7	268.1	177.2	90.94	2.948	
10,200.0	6,834.0	6,821.2	6,817.2	87.3	6.2	-88.41	604.5	3,189.7	322.9	229.5	93.39	3.458	
10,300.0	6,834.0	6,820.9	6,816.9	89.8	6.2	-88.34	604.5	3,189.7	395.8	300.0	95.84	4.130	
10,400.0	6,834.0	6,820.6	6,816.6	92.2	6.2	-88.27	604.5	3,189.7	478.6	380.3	98.29	4.870	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - SLATER 34-28 (EXISTING) - EXISTING - SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 113-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,700.0	6,834.0	6,922.0	6,849.8	75.1	18.7	91.37	-131.1	2,969.1	496.8	408.2	88.66	5.604	
9,767.3	6,834.0	6,922.1	6,849.9	76.8	18.7	91.39	-131.1	2,969.1	492.2	401.9	90.31	5.451	CC, ES
9,800.0	6,834.0	6,922.2	6,850.0	77.6	18.7	91.40	-131.1	2,969.1	493.3	402.2	91.10	5.415	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Qualls) - SLATER 4-6-28 (EXISTING) - Existing - NO SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 7802-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,800.0	6,834.0	6,826.0	6,826.0	77.6	11.9	-90.00	619.9	3,345.9	430.6	341.3	89.33	4.821	
9,900.0	6,834.0	6,826.0	6,826.0	80.0	11.9	-90.00	619.9	3,345.9	355.8	264.1	91.78	3.877	
10,000.0	6,834.0	6,826.0	6,826.0	82.5	11.9	-90.00	619.9	3,345.9	296.3	202.1	94.23	3.144	
10,100.0	6,834.0	6,826.0	6,826.0	84.9	11.9	-90.00	619.9	3,345.9	262.6	165.9	96.68	2.716	
10,144.2	6,834.0	6,826.0	6,826.0	86.0	11.9	-90.00	619.9	3,345.9	258.8	161.1	97.76	2.648	CC, ES, SF
10,200.0	6,834.0	6,826.0	6,826.0	87.3	11.9	-90.00	619.9	3,345.9	264.8	165.7	99.13	2.671	
10,300.0	6,834.0	6,826.0	6,826.0	89.8	11.9	-90.00	619.9	3,345.9	302.1	200.5	101.58	2.974	
10,400.0	6,834.0	6,826.0	6,826.0	92.2	11.9	-90.00	619.9	3,345.9	363.9	259.9	104.04	3.498	
10,500.0	6,834.0	6,826.0	6,826.0	94.7	11.9	-90.00	619.9	3,345.9	440.0	333.5	106.49	4.132	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Qualls 3D-28H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	**MD Reference:**	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Qualls 3D-28H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4970.0ft (Original Well Elev)	Coordinates are relative to: Qualls 3D-28H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.31°