

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S9-T2N-R67W (Sprague)

Sprague 3C-9H-N267

Hz

Design: FINAL

Survey Report - Geographic

19 February, 2015

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3C-9H-N267
Project:	DJ Wattenberg	TVD Reference:	28.5' @ 5010.5ft (272)
Site:	S9-T2N-R67W (Sprague)	MD Reference:	28.5' @ 5010.5ft (272)
Well:	Sprague 3C-9H-N267	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	S9-T2N-R67W (Sprague)				
Site Position:		Northing:	1,298,443.90 ft	Latitude:	40.151070
From:	Lat/Long	Easting:	3,167,093.12 ft	Longitude:	-104.902260
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	Sprague 3C-9H-N267					
Well Position	+N/-S	0.0 ft	Northing:	1,296,975.56 ft	Latitude:	40.147020
	+E/-W	0.0 ft	Easting:	3,168,137.38 ft	Longitude:	-104.898560
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,982.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/29/2015	8.43	66.70	52,601

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	2/19/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
228.0	12,655.0	Survey #2 (Hz)	Geolink MWD	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	1,296,975.56	3,168,137.38	40.147020	-104.898560	
228.0	0.90	8.80	228.0	1.8	0.3	1,296,977.33	3,168,137.64	40.147025	-104.898559	
290.0	0.30	320.10	290.0	2.4	0.2	1,296,977.94	3,168,137.61	40.147027	-104.898559	
353.0	1.10	258.60	353.0	2.4	-0.5	1,296,977.94	3,168,136.91	40.147027	-104.898562	
415.0	2.00	240.20	415.0	1.7	-2.0	1,296,977.27	3,168,135.39	40.147025	-104.898567	
508.0	3.60	234.60	507.8	-0.8	-5.8	1,296,974.75	3,168,131.62	40.147018	-104.898581	
602.0	4.50	235.80	601.6	-4.6	-11.2	1,296,970.93	3,168,126.19	40.147008	-104.898600	
696.0	5.20	234.40	695.3	-9.1	-17.7	1,296,966.33	3,168,119.71	40.146995	-104.898624	
789.0	6.00	234.50	787.8	-14.4	-25.1	1,296,961.01	3,168,112.36	40.146981	-104.898650	
820.0	6.50	234.60	818.6	-16.3	-27.9	1,296,959.03	3,168,109.62	40.146975	-104.898660	
894.0	7.20	233.30	892.1	-21.5	-35.0	1,296,953.79	3,168,102.53	40.146961	-104.898685	
990.0	7.00	231.80	987.4	-28.7	-44.4	1,296,946.51	3,168,093.15	40.146941	-104.898719	

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Site:	S9-T2N-R67W (Sprague)	MD Reference:	28.5' @ 5010.5ft (272)
Well:	Sprague 3C-9H-N267	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
1,083.0	7.00	230.20	1,079.7	-35.9	-53.2	1,296,939.32	3,168,084.40	40.146922	-104.898751
1,177.0	6.50	244.80	1,173.0	-41.8	-62.4	1,296,933.32	3,168,075.22	40.146905	-104.898784
1,270.0	6.40	243.90	1,265.5	-46.3	-71.9	1,296,928.74	3,168,065.83	40.146893	-104.898817
1,364.0	8.50	241.70	1,358.7	-51.9	-82.7	1,296,923.07	3,168,055.05	40.146877	-104.898856
1,457.0	8.00	237.60	1,450.7	-58.7	-94.2	1,296,916.26	3,168,043.58	40.146859	-104.898897
1,551.0	7.80	237.00	1,543.8	-65.6	-105.1	1,296,909.21	3,168,032.75	40.146840	-104.898936
1,644.0	7.30	232.60	1,636.0	-72.7	-115.1	1,296,902.12	3,168,022.82	40.146821	-104.898972
1,738.0	7.20	245.60	1,729.2	-78.7	-125.2	1,296,895.99	3,168,012.75	40.146804	-104.899008
1,831.0	9.10	246.70	1,821.3	-84.0	-137.2	1,296,890.59	3,168,000.72	40.146789	-104.899051
1,925.0	8.70	243.30	1,914.2	-90.2	-150.4	1,296,884.36	3,167,987.58	40.146772	-104.899098
2,019.0	8.20	241.30	2,007.2	-96.6	-162.6	1,296,877.87	3,167,975.40	40.146755	-104.899142
2,112.0	7.80	236.10	2,099.2	-103.3	-173.7	1,296,871.09	3,167,964.39	40.146736	-104.899182
2,206.0	7.20	232.00	2,192.4	-110.5	-183.6	1,296,863.84	3,167,954.50	40.146717	-104.899217
2,299.0	9.50	236.90	2,284.5	-118.3	-194.7	1,296,855.98	3,167,943.53	40.146695	-104.899257
2,393.0	9.10	230.10	2,377.2	-127.3	-206.9	1,296,846.89	3,167,931.39	40.146671	-104.899300
2,486.0	8.80	240.50	2,469.1	-135.5	-218.7	1,296,838.59	3,167,919.61	40.146648	-104.899343
2,580.0	8.40	238.00	2,562.0	-142.7	-230.8	1,296,831.33	3,167,907.58	40.146628	-104.899386
2,673.0	9.80	244.00	2,653.9	-149.7	-243.6	1,296,824.17	3,167,894.75	40.146609	-104.899432
2,767.0	9.60	242.70	2,746.5	-156.8	-257.8	1,296,816.98	3,167,880.64	40.146589	-104.899482
2,860.0	9.20	241.00	2,838.3	-164.0	-271.2	1,296,809.72	3,167,867.30	40.146570	-104.899530
2,955.0	8.80	240.80	2,932.1	-171.2	-284.2	1,296,802.41	3,167,854.36	40.146550	-104.899577
3,049.0	8.20	240.60	3,025.1	-178.0	-296.3	1,296,795.53	3,167,842.29	40.146531	-104.899620
3,144.0	7.60	240.50	3,119.2	-184.4	-307.7	1,296,789.03	3,167,830.97	40.146514	-104.899661
3,238.0	7.10	239.70	3,212.4	-190.4	-318.1	1,296,782.97	3,167,820.58	40.146497	-104.899698
3,333.0	6.60	241.00	3,306.7	-196.0	-327.9	1,296,777.29	3,167,810.78	40.146482	-104.899733
3,427.0	8.00	240.30	3,400.0	-201.9	-338.3	1,296,771.36	3,167,800.41	40.146466	-104.899771
3,522.0	6.90	237.00	3,494.2	-208.3	-348.9	1,296,764.91	3,167,789.92	40.146448	-104.899808
3,616.0	7.80	245.30	3,587.4	-214.0	-359.4	1,296,759.10	3,167,779.43	40.146432	-104.899846
3,711.0	8.70	239.10	3,681.4	-220.4	-371.4	1,296,752.63	3,167,767.45	40.146415	-104.899889
3,805.0	7.80	239.80	3,774.4	-227.3	-383.0	1,296,745.69	3,167,755.89	40.146396	-104.899930
3,899.0	9.20	238.90	3,867.4	-234.4	-395.0	1,296,738.52	3,167,743.99	40.146377	-104.899973
3,994.0	8.60	240.00	3,961.2	-241.8	-407.6	1,296,730.96	3,167,731.38	40.146356	-104.900018
4,088.0	8.70	229.40	4,054.2	-250.0	-419.1	1,296,722.74	3,167,719.95	40.146334	-104.900060
4,182.0	8.00	229.20	4,147.2	-258.9	-429.5	1,296,713.77	3,167,709.67	40.146309	-104.900097
4,277.0	7.40	228.30	4,241.3	-267.3	-439.1	1,296,705.32	3,167,700.15	40.146286	-104.900131
4,372.0	7.90	239.10	4,335.5	-274.7	-449.2	1,296,697.83	3,167,690.03	40.146266	-104.900167
4,467.0	6.60	236.60	4,429.7	-281.1	-459.4	1,296,691.40	3,167,679.91	40.146248	-104.900204
4,561.0	8.70	247.40	4,522.9	-286.8	-470.5	1,296,685.62	3,167,668.88	40.146233	-104.900243
4,656.0	8.60	248.30	4,616.8	-292.1	-483.7	1,296,680.14	3,167,655.68	40.146218	-104.900290
4,750.0	8.40	247.80	4,709.8	-297.3	-496.6	1,296,674.86	3,167,642.83	40.146204	-104.900337
4,845.0	8.10	248.70	4,803.8	-302.4	-509.2	1,296,669.72	3,167,630.20	40.146190	-104.900382
4,939.0	7.40	252.70	4,896.9	-306.6	-521.2	1,296,665.44	3,167,618.28	40.146178	-104.900425
5,033.0	7.20	242.20	4,990.2	-311.1	-532.2	1,296,660.81	3,167,607.32	40.146166	-104.900464
5,128.0	7.90	245.60	5,084.4	-316.6	-543.4	1,296,655.26	3,167,596.15	40.146151	-104.900504
5,223.0	8.80	233.10	5,178.4	-323.7	-555.1	1,296,648.12	3,167,584.44	40.146131	-104.900546
5,317.0	8.00	231.90	5,271.3	-332.0	-566.0	1,296,639.70	3,167,573.60	40.146109	-104.900585
5,412.0	8.40	227.60	5,365.4	-340.8	-576.4	1,296,630.87	3,167,563.33	40.146084	-104.900622
5,507.0	9.90	226.70	5,459.2	-351.1	-587.4	1,296,620.51	3,167,552.33	40.146056	-104.900662
5,601.0	8.70	224.80	5,551.9	-361.7	-598.3	1,296,609.85	3,167,541.52	40.146027	-104.900701
5,695.0	8.40	229.20	5,644.9	-371.2	-608.5	1,296,600.25	3,167,531.37	40.146001	-104.900737
5,790.0	9.30	225.80	5,738.8	-381.1	-619.3	1,296,590.29	3,167,520.68	40.145974	-104.900776
5,884.0	9.50	234.60	5,831.5	-390.9	-631.1	1,296,580.43	3,167,508.98	40.145947	-104.900818
5,979.0	7.80	234.30	5,925.4	-399.2	-642.7	1,296,572.04	3,167,497.41	40.145924	-104.900859
6,073.0	7.30	239.50	6,018.6	-405.9	-653.0	1,296,565.22	3,167,487.13	40.145906	-104.900896
6,167.0	7.10	240.40	6,111.9	-411.8	-663.2	1,296,559.25	3,167,476.98	40.145889	-104.900933

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Project:	DJ Wattenberg	TVD Reference:	28.5' @ 5010.5ft (272)
Site:	S9-T2N-R67W (Sprague)	MD Reference:	28.5' @ 5010.5ft (272)
Well:	Sprague 3C-9H-N267	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
6,262.0	8.20	250.10	6,206.0	-417.0	-674.7	1,296,553.97	3,167,465.54	40.145875	-104.900974
6,309.0	8.60	253.20	6,252.5	-419.2	-681.2	1,296,551.76	3,167,459.03	40.145869	-104.900997
6,357.0	8.10	269.20	6,300.0	-420.3	-688.0	1,296,550.63	3,167,452.22	40.145866	-104.901021
6,404.0	8.20	284.40	6,346.5	-419.5	-694.6	1,296,551.38	3,167,445.66	40.145868	-104.901045
6,451.0	8.50	300.10	6,393.0	-416.9	-700.8	1,296,553.91	3,167,439.39	40.145876	-104.901067
6,498.0	10.20	308.00	6,439.4	-412.6	-707.1	1,296,558.17	3,167,433.08	40.145887	-104.901090
6,546.0	12.30	309.80	6,486.5	-406.7	-714.4	1,296,564.01	3,167,425.76	40.145904	-104.901116
6,593.0	13.70	316.10	6,532.3	-399.5	-722.1	1,296,571.18	3,167,418.00	40.145923	-104.901143
6,640.0	15.40	321.80	6,577.8	-390.6	-729.8	1,296,580.04	3,167,410.22	40.145948	-104.901171
6,687.0	17.70	325.80	6,622.8	-379.8	-737.7	1,296,590.80	3,167,402.27	40.145977	-104.901199
6,734.0	19.20	333.00	6,667.4	-367.0	-745.2	1,296,603.55	3,167,394.66	40.146013	-104.901226
6,781.0	20.90	337.70	6,711.6	-352.3	-751.9	1,296,618.15	3,167,387.87	40.146053	-104.901250
6,829.0	22.70	341.40	6,756.1	-335.6	-758.1	1,296,634.80	3,167,381.56	40.146099	-104.901272
6,876.0	24.80	345.00	6,799.2	-317.5	-763.6	1,296,652.89	3,167,375.99	40.146148	-104.901292
6,924.0	28.20	346.90	6,842.1	-296.7	-768.7	1,296,673.63	3,167,370.67	40.146205	-104.901310
6,971.0	31.20	349.20	6,882.9	-273.9	-773.5	1,296,696.37	3,167,365.72	40.146268	-104.901327
7,019.0	34.50	350.30	6,923.3	-248.3	-778.2	1,296,721.96	3,167,360.92	40.146338	-104.901344
7,066.0	37.30	348.90	6,961.3	-221.2	-783.1	1,296,749.03	3,167,355.75	40.146413	-104.901362
7,112.0	39.60	346.20	6,997.4	-193.3	-789.3	1,296,776.91	3,167,349.38	40.146489	-104.901384
7,159.0	38.90	353.00	7,033.8	-164.1	-794.7	1,296,806.08	3,167,343.81	40.146570	-104.901403
7,206.0	40.20	357.90	7,070.0	-134.3	-797.1	1,296,835.87	3,167,341.25	40.146651	-104.901411
7,253.0	37.70	3.90	7,106.6	-104.8	-796.6	1,296,865.39	3,167,341.47	40.146732	-104.901410
7,300.0	40.60	2.50	7,143.0	-75.1	-795.0	1,296,895.02	3,167,342.92	40.146814	-104.901404
7,347.0	47.70	0.00	7,176.7	-42.4	-794.3	1,296,927.73	3,167,343.36	40.146903	-104.901402
7,395.0	55.40	358.00	7,206.6	-4.9	-795.0	1,296,965.28	3,167,342.42	40.147007	-104.901404
7,442.0	62.20	357.40	7,230.9	35.3	-796.6	1,297,005.41	3,167,340.53	40.147117	-104.901410
7,489.0	67.40	359.40	7,250.9	77.7	-797.8	1,297,047.89	3,167,339.07	40.147233	-104.901414
7,536.0	72.40	359.60	7,267.0	121.9	-798.2	1,297,092.01	3,167,338.38	40.147355	-104.901416
7,584.0	74.90	0.90	7,280.5	167.9	-798.0	1,297,138.07	3,167,338.28	40.147481	-104.901415
7,631.0	77.50	359.10	7,291.8	213.6	-798.0	1,297,183.70	3,167,337.96	40.147606	-104.901415
7,678.0	80.70	358.30	7,300.6	259.7	-799.0	1,297,229.83	3,167,336.60	40.147733	-104.901419
7,725.0	82.60	358.20	7,307.5	306.2	-800.5	1,297,276.30	3,167,334.86	40.147860	-104.901424
7,773.0	85.10	358.20	7,312.6	353.9	-802.0	1,297,323.98	3,167,333.04	40.147991	-104.901429
7,790.0	86.50	358.30	7,313.9	370.8	-802.5	1,297,340.92	3,167,332.41	40.148038	-104.901431
7,832.0	88.30	358.90	7,315.8	412.8	-803.5	1,297,382.86	3,167,331.10	40.148153	-104.901435
7,895.0	88.90	358.20	7,317.3	475.7	-805.1	1,297,445.81	3,167,329.08	40.148326	-104.901440
7,989.0	88.90	358.10	7,319.1	569.7	-808.1	1,297,539.72	3,167,325.41	40.148584	-104.901451
8,084.0	89.70	358.50	7,320.3	664.6	-810.9	1,297,634.65	3,167,321.95	40.148844	-104.901461
8,179.0	90.90	358.50	7,319.8	759.6	-813.4	1,297,729.59	3,167,318.82	40.149105	-104.901470
8,273.0	88.20	357.30	7,320.5	853.5	-816.9	1,297,823.49	3,167,314.74	40.149363	-104.901482
8,369.0	89.00	357.70	7,322.9	949.4	-821.1	1,297,919.34	3,167,309.90	40.149626	-104.901497
8,463.0	89.50	358.50	7,324.1	1,043.3	-824.2	1,298,013.25	3,167,306.15	40.149884	-104.901509
8,558.0	90.10	359.00	7,324.4	1,138.3	-826.2	1,298,108.21	3,167,303.43	40.150145	-104.901516
8,652.0	91.10	359.70	7,323.4	1,232.3	-827.3	1,298,202.19	3,167,301.73	40.150403	-104.901520
8,747.0	91.70	0.70	7,321.1	1,327.2	-827.0	1,298,297.16	3,167,301.41	40.150663	-104.901519
8,842.0	91.00	0.40	7,318.9	1,422.2	-826.1	1,298,392.13	3,167,301.68	40.150924	-104.901515
8,938.0	90.80	0.30	7,317.4	1,518.2	-825.5	1,298,488.12	3,167,301.62	40.151188	-104.901513
9,032.0	89.80	0.40	7,316.9	1,612.2	-824.9	1,298,582.12	3,167,301.55	40.151446	-104.901511
9,127.0	88.90	0.50	7,318.0	1,707.2	-824.2	1,298,677.11	3,167,301.65	40.151706	-104.901509
9,221.0	89.70	1.60	7,319.1	1,801.2	-822.4	1,298,771.10	3,167,302.74	40.151964	-104.901503
9,315.0	89.20	0.60	7,320.0	1,895.1	-820.6	1,298,865.08	3,167,303.91	40.152222	-104.901496
9,410.0	88.00	359.80	7,322.3	1,990.1	-820.3	1,298,960.05	3,167,303.59	40.152483	-104.901495
9,504.0	88.00	358.50	7,325.6	2,084.0	-821.7	1,299,053.97	3,167,301.56	40.152741	-104.901500
9,599.0	89.50	358.50	7,327.7	2,179.0	-824.2	1,299,148.89	3,167,298.43	40.153002	-104.901509
9,693.0	88.70	358.70	7,329.2	2,272.9	-826.5	1,299,242.83	3,167,295.50	40.153259	-104.901517

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3C-9H-N267
Project:	DJ Wattenberg	TVD Reference:	28.5' @ 5010.5ft (272)
Site:	S9-T2N-R67W (Sprague)	MD Reference:	28.5' @ 5010.5ft (272)
Well:	Sprague 3C-9H-N267	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
9,787.0	92.60	0.20	7,328.1	2,366.9	-827.4	1,299,336.80	3,167,293.96	40.153517	-104.901520
9,881.0	93.10	0.60	7,323.4	2,460.8	-826.7	1,299,430.68	3,167,293.98	40.153775	-104.901518
9,928.0	92.10	1.00	7,321.3	2,507.7	-826.1	1,299,477.63	3,167,294.32	40.153904	-104.901516
9,975.0	91.20	1.00	7,319.9	2,554.7	-825.3	1,299,524.61	3,167,294.82	40.154033	-104.901513
10,022.0	90.30	1.10	7,319.3	2,601.7	-824.4	1,299,571.60	3,167,295.36	40.154162	-104.901510
10,070.0	89.90	1.10	7,319.2	2,649.7	-823.5	1,299,619.59	3,167,295.95	40.154294	-104.901506
10,117.0	90.50	1.00	7,319.1	2,696.7	-822.6	1,299,666.59	3,167,296.50	40.154423	-104.901503
10,164.0	91.10	0.60	7,318.4	2,743.7	-822.0	1,299,713.58	3,167,296.83	40.154552	-104.901501
10,211.0	91.40	0.60	7,317.4	2,790.6	-821.5	1,299,760.57	3,167,297.01	40.154681	-104.901499
10,258.0	91.50	0.50	7,316.2	2,837.6	-821.0	1,299,807.56	3,167,297.14	40.154810	-104.901498
10,321.0	90.50	0.40	7,315.1	2,900.6	-820.5	1,299,870.55	3,167,297.21	40.154983	-104.901496
10,384.0	90.60	0.30	7,314.5	2,963.6	-820.1	1,299,933.54	3,167,297.17	40.155155	-104.901494
10,447.0	89.10	0.30	7,314.7	3,026.6	-819.8	1,299,996.54	3,167,297.07	40.155328	-104.901493
10,510.0	89.50	0.40	7,315.4	3,089.6	-819.4	1,300,059.54	3,167,297.03	40.155501	-104.901492
10,573.0	89.50	0.70	7,316.0	3,152.6	-818.8	1,300,122.53	3,167,297.20	40.155674	-104.901490
10,635.0	89.90	0.70	7,316.3	3,214.6	-818.1	1,300,184.53	3,167,297.54	40.155844	-104.901487
10,698.0	90.40	359.60	7,316.1	3,277.6	-817.9	1,300,247.53	3,167,297.28	40.156017	-104.901486
10,761.0	89.60	359.90	7,316.1	3,340.6	-818.2	1,300,310.53	3,167,296.58	40.156190	-104.901487
10,824.0	89.80	359.90	7,316.5	3,403.6	-818.3	1,300,373.52	3,167,296.04	40.156363	-104.901488
10,918.0	89.70	359.80	7,316.9	3,497.6	-818.5	1,300,467.52	3,167,295.15	40.156621	-104.901489
11,012.0	89.70	359.80	7,317.4	3,591.6	-818.8	1,300,561.51	3,167,294.19	40.156879	-104.901490
11,107.0	89.60	359.80	7,317.9	3,686.6	-819.2	1,300,656.50	3,167,293.21	40.157140	-104.901491
11,201.0	89.80	359.60	7,318.4	3,780.6	-819.7	1,300,750.50	3,167,292.08	40.157398	-104.901493
11,295.0	90.20	359.60	7,318.4	3,874.6	-820.3	1,300,844.49	3,167,290.79	40.157656	-104.901495
11,389.0	89.50	359.20	7,318.7	3,968.6	-821.3	1,300,938.47	3,167,289.17	40.157914	-104.901499
11,484.0	90.00	359.00	7,319.1	4,063.6	-822.8	1,301,033.45	3,167,287.03	40.158175	-104.901504
11,578.0	89.60	358.40	7,319.4	4,157.5	-824.9	1,301,127.40	3,167,284.26	40.158433	-104.901512
11,672.0	91.70	359.60	7,318.4	4,251.5	-826.6	1,301,221.36	3,167,281.98	40.158691	-104.901518
11,767.0	91.40	0.30	7,315.8	4,346.5	-826.7	1,301,316.33	3,167,281.26	40.158952	-104.901518
11,861.0	90.70	0.20	7,314.1	4,440.5	-826.3	1,301,410.31	3,167,281.03	40.159210	-104.901516
11,955.0	90.60	0.20	7,313.0	4,534.4	-825.9	1,301,504.30	3,167,280.72	40.159468	-104.901515
12,050.0	89.30	0.30	7,313.1	4,629.4	-825.5	1,301,599.30	3,167,280.49	40.159728	-104.901514
12,145.0	88.20	0.30	7,315.2	4,724.4	-825.0	1,301,694.28	3,167,280.34	40.159989	-104.901512
12,239.0	90.60	359.70	7,316.1	4,818.4	-825.0	1,301,788.26	3,167,279.71	40.160247	-104.901512
12,333.0	91.80	0.00	7,314.2	4,912.4	-825.3	1,301,882.24	3,167,278.82	40.160505	-104.901513
12,428.0	92.00	0.40	7,311.0	5,007.3	-824.9	1,301,977.18	3,167,278.51	40.160766	-104.901512
12,522.0	90.90	0.80	7,308.6	5,101.3	-823.9	1,302,071.15	3,167,278.86	40.161024	-104.901508
12,600.0	90.50	0.30	7,307.7	5,179.3	-823.2	1,302,149.14	3,167,279.08	40.161238	-104.901506
Last CES Survey @ 12,600' MD									
12,655.0	90.50	0.30	7,307.2	5,234.3	-822.9	1,302,204.14	3,167,278.99	40.161389	-104.901505
PTB @ 12,655' MD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Sprague 3C-9H 45°	0.00	0.00	7,107.0	-91.7	-791.8	1,296,878.51	3,167,346.27	40.146768	-104.901392
- actual wellpath misses target center by 11.0ft at 7261.8ft MD (7113.5 TVD, -99.4 N, -796.3 E)									
- Point									
Sprague 3C-9H-N267 PI	0.00	0.00	7,310.0	5,227.5	-835.7	1,302,197.25	3,167,266.26	40.161370	-104.901550
- actual wellpath misses target center by 13.0ft at 12648.1ft MD (7307.3 TVD, 5227.4 N, -822.9 E)									
- Point									

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3C-9H-N267
Project:	DJ Wattenberg	TVD Reference:	28.5' @ 5010.5ft (272)
Site:	S9-T2N-R67W (Sprague)	MD Reference:	28.5' @ 5010.5ft (272)
Well:	Sprague 3C-9H-N267	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
12,600.0	7,307.7	5,179.3	-823.2	Last CES Survey @ 12,600' MD	
12,655.0	7,307.2	5,234.3	-822.9	PTB @ 12,655' MD	

Checked By: _____	Approved By: _____	Date: _____
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