

# **DJ/Paradox/WTX**

**Wattenberg**

**New Drills**

**lone 4-6-8**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report - Geographic**

**16 February, 2010**

**EnCana Corporation**  
Planning Report - Geographic

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Ione 4-6-8
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 4895.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4895.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Ione 4-6-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Wattenberg,		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		New Drills				
Site Position:		Northing:	1,252,450.66 ft	Latitude:	40° 1' 32.016 N	
From:	Lat/Long	Easting:	3,120,627.66 ft	Longitude:	105° 4' 9.336 W	
Position Uncertainty:		ft	Slot Radius:	in	Grid Convergence:	0.28 °

Well	Ione 4-6-8					
Well Position	+N/-S	45,040.9 ft	Northing:	1,298,100.16 ft	Latitude:	40° 8' 58.308 N
	+E/-W	76,755.7 ft	Easting:	3,197,022.83 ft	Longitude:	104° 47' 42.648 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	4,882.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	9.02	66.90	53,169

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	263.96

<b>Plan Sections</b>										
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	
850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,718.2	17.36	263.96	1,705.0	-13.7	-129.8	2.00	2.00	0.00	263.96	
6,296.9	17.36	263.96	6,075.0	-157.4	-1,488.7	0.00	0.00	0.00	0.00	
7,165.1	0.00	0.00	6,930.0	-171.2	-1,618.5	2.00	-2.00	0.00	180.00	
8,205.1	0.00	0.00	7,970.0	-171.2	-1,618.5	0.00	0.00	0.00	0.00	4-6-8 BHL

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<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Ione 4-6-8
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 4895.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4895.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Ione 4-6-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned 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	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
100.0	0.00	0.00	100.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
200.0	0.00	0.00	200.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
300.0	0.00	0.00	300.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
400.0	0.00	0.00	400.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
500.0	0.00	0.00	500.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
600.0	0.00	0.00	600.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
700.0	0.00	0.00	700.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
800.0	0.00	0.00	800.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
850.0	0.00	0.00	850.0	0.0	0.0	1,298,100.16	3,197,022.83	40° 8' 58.308 N	104° 47' 42.648 W	
900.0	1.00	263.96	900.0	0.0	-0.4	1,298,100.11	3,197,022.40	40° 8' 58.307 N	104° 47' 42.654 W	
1,000.0	3.00	263.96	999.9	-0.4	-3.9	1,298,099.72	3,197,018.93	40° 8' 58.304 N	104° 47' 42.698 W	
1,100.0	5.00	263.96	1,099.7	-1.1	-10.8	1,298,098.93	3,197,012.00	40° 8' 58.297 N	104° 47' 42.788 W	
1,200.0	7.00	263.96	1,199.1	-2.2	-21.2	1,298,097.75	3,197,001.61	40° 8' 58.286 N	104° 47' 42.921 W	
1,300.0	9.00	263.96	1,298.2	-3.7	-35.1	1,298,096.17	3,196,987.79	40° 8' 58.271 N	104° 47' 43.100 W	
1,400.0	11.00	263.96	1,396.6	-5.5	-52.3	1,298,094.21	3,196,970.53	40° 8' 58.253 N	104° 47' 43.322 W	
1,500.0	13.00	263.96	1,494.4	-7.7	-73.0	1,298,091.86	3,196,949.88	40° 8' 58.232 N	104° 47' 43.588 W	
1,600.0	15.00	263.96	1,591.5	-10.3	-97.1	1,298,089.12	3,196,925.84	40° 8' 58.206 N	104° 47' 43.898 W	
1,700.0	17.00	263.96	1,687.6	-13.2	-124.5	1,298,086.01	3,196,898.46	40° 8' 58.178 N	104° 47' 44.251 W	
1,718.2	17.36	263.96	1,705.0	-13.7	-129.8	1,298,085.40	3,196,893.12	40° 8' 58.172 N	104° 47' 44.320 W	
1,800.0	17.36	263.96	1,783.0	-16.3	-154.1	1,298,082.64	3,196,868.86	40° 8' 58.147 N	104° 47' 44.633 W	
1,900.0	17.36	263.96	1,878.5	-19.4	-183.8	1,298,079.27	3,196,839.21	40° 8' 58.116 N	104° 47' 45.015 W	
2,000.0	17.36	263.96	1,973.9	-22.6	-213.5	1,298,075.89	3,196,809.55	40° 8' 58.085 N	104° 47' 45.397 W	
2,100.0	17.36	263.96	2,069.4	-25.7	-243.1	1,298,072.52	3,196,779.90	40° 8' 58.054 N	104° 47' 45.779 W	
2,200.0	17.36	263.96	2,164.8	-28.8	-272.8	1,298,069.14	3,196,750.25	40° 8' 58.023 N	104° 47' 46.161 W	
2,300.0	17.36	263.96	2,260.3	-32.0	-302.5	1,298,065.77	3,196,720.60	40° 8' 57.992 N	104° 47' 46.544 W	
2,400.0	17.36	263.96	2,355.7	-35.1	-332.2	1,298,062.40	3,196,690.94	40° 8' 57.961 N	104° 47' 46.926 W	
2,500.0	17.36	263.96	2,451.1	-38.3	-361.9	1,298,059.02	3,196,661.29	40° 8' 57.930 N	104° 47' 47.308 W	
2,600.0	17.36	263.96	2,546.6	-41.4	-391.5	1,298,055.65	3,196,631.64	40° 8' 57.899 N	104° 47' 47.690 W	
2,700.0	17.36	263.96	2,642.0	-44.5	-421.2	1,298,052.27	3,196,601.99	40° 8' 57.868 N	104° 47' 48.072 W	
2,800.0	17.36	263.96	2,737.5	-47.7	-450.9	1,298,048.90	3,196,572.33	40° 8' 57.837 N	104° 47' 48.455 W	
2,900.0	17.36	263.96	2,832.9	-50.8	-480.6	1,298,045.53	3,196,542.68	40° 8' 57.806 N	104° 47' 48.837 W	
3,000.0	17.36	263.96	2,928.4	-54.0	-510.2	1,298,042.15	3,196,513.03	40° 8' 57.775 N	104° 47' 49.219 W	
3,100.0	17.36	263.96	3,023.8	-57.1	-539.9	1,298,038.78	3,196,483.38	40° 8' 57.744 N	104° 47' 49.601 W	
3,200.0	17.36	263.96	3,119.2	-60.2	-569.6	1,298,035.40	3,196,453.72	40° 8' 57.713 N	104° 47' 49.984 W	
3,300.0	17.36	263.96	3,214.7	-63.4	-599.3	1,298,032.03	3,196,424.07	40° 8' 57.682 N	104° 47' 50.366 W	
3,400.0	17.36	263.96	3,310.1	-66.5	-629.0	1,298,028.66	3,196,394.42	40° 8' 57.651 N	104° 47' 50.748 W	
3,500.0	17.36	263.96	3,405.6	-69.6	-658.6	1,298,025.28	3,196,364.77	40° 8' 57.620 N	104° 47' 51.130 W	
3,600.0	17.36	263.96	3,501.0	-72.8	-688.3	1,298,021.91	3,196,335.11	40° 8' 57.588 N	104° 47' 51.512 W	
3,700.0	17.36	263.96	3,596.5	-75.9	-718.0	1,298,018.53	3,196,305.46	40° 8' 57.557 N	104° 47' 51.895 W	
3,800.0	17.36	263.96	3,691.9	-79.1	-747.7	1,298,015.16	3,196,275.81	40° 8' 57.526 N	104° 47' 52.277 W	
3,900.0	17.36	263.96	3,787.3	-82.2	-777.4	1,298,011.78	3,196,246.16	40° 8' 57.495 N	104° 47' 52.659 W	
4,000.0	17.36	263.96	3,882.8	-85.3	-807.0	1,298,008.41	3,196,216.50	40° 8' 57.464 N	104° 47' 53.041 W	
4,100.0	17.36	263.96	3,978.2	-88.5	-836.7	1,298,005.04	3,196,186.85	40° 8' 57.433 N	104° 47' 53.423 W	
4,200.0	17.36	263.96	4,073.7	-91.6	-866.4	1,298,001.66	3,196,157.20	40° 8' 57.402 N	104° 47' 53.806 W	
4,300.0	17.36	263.96	4,169.1	-94.8	-896.1	1,297,998.29	3,196,127.55	40° 8' 57.371 N	104° 47' 54.188 W	
4,400.0	17.36	263.96	4,264.6	-97.9	-925.7	1,297,994.91	3,196,097.89	40° 8' 57.340 N	104° 47' 54.570 W	
4,500.0	17.36	263.96	4,360.0	-101.0	-955.4	1,297,991.54	3,196,068.24	40° 8' 57.309 N	104° 47' 54.952 W	
4,600.0	17.36	263.96	4,455.4	-104.2	-985.1	1,297,988.17	3,196,038.59	40° 8' 57.278 N	104° 47' 55.334 W	
4,700.0	17.36	263.96	4,550.9	-107.3	-1,014.8	1,297,984.79	3,196,008.94	40° 8' 57.247 N	104° 47' 55.717 W	
4,800.0	17.36	263.96	4,646.3	-110.4	-1,044.5	1,297,981.42	3,195,979.29	40° 8' 57.216 N	104° 47' 56.099 W	
4,900.0	17.36	263.96	4,741.8	-113.6	-1,074.1	1,297,978.04	3,195,949.63	40° 8' 57.185 N	104° 47' 56.481 W	
5,000.0	17.36	263.96	4,837.2	-116.7	-1,103.8	1,297,974.67	3,195,919.98	40° 8' 57.154 N	104° 47' 56.863 W	
5,100.0	17.36	263.96	4,932.7	-119.9	-1,133.5	1,297,971.30	3,195,890.33	40° 8' 57.123 N	104° 47' 57.245 W	
5,200.0	17.36	263.96	5,028.1	-123.0	-1,163.2	1,297,967.92	3,195,860.68	40° 8' 57.092 N	104° 47' 57.628 W	

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<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4895.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Ione 4-6-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
5,300.0	17.36	263.96	5,123.5	-126.1	-1,192.8	1,297,964.55	3,195,831.02	40° 8' 57.061 N	104° 47' 58.010 W	
5,400.0	17.36	263.96	5,219.0	-129.3	-1,222.5	1,297,961.17	3,195,801.37	40° 8' 57.030 N	104° 47' 58.392 W	
5,500.0	17.36	263.96	5,314.4	-132.4	-1,252.2	1,297,957.80	3,195,771.72	40° 8' 56.999 N	104° 47' 58.774 W	
5,600.0	17.36	263.96	5,409.9	-135.6	-1,281.9	1,297,954.43	3,195,742.07	40° 8' 56.968 N	104° 47' 59.156 W	
5,700.0	17.36	263.96	5,505.3	-138.7	-1,311.6	1,297,951.05	3,195,712.41	40° 8' 56.937 N	104° 47' 59.539 W	
5,800.0	17.36	263.96	5,600.8	-141.8	-1,341.2	1,297,947.68	3,195,682.76	40° 8' 56.906 N	104° 47' 59.921 W	
5,900.0	17.36	263.96	5,696.2	-145.0	-1,370.9	1,297,944.30	3,195,653.11	40° 8' 56.875 N	104° 48' 0.303 W	
6,000.0	17.36	263.96	5,791.6	-148.1	-1,400.6	1,297,940.93	3,195,623.46	40° 8' 56.844 N	104° 48' 0.685 W	
6,100.0	17.36	263.96	5,887.1	-151.2	-1,430.3	1,297,937.56	3,195,593.80	40° 8' 56.813 N	104° 48' 1.067 W	
6,200.0	17.36	263.96	5,982.5	-154.4	-1,460.0	1,297,934.18	3,195,564.15	40° 8' 56.782 N	104° 48' 1.450 W	
6,296.9	17.36	263.96	6,075.0	-157.4	-1,488.7	1,297,930.91	3,195,535.41	40° 8' 56.752 N	104° 48' 1.820 W	
6,300.0	17.30	263.96	6,078.0	-157.5	-1,489.6	1,297,930.81	3,195,534.50	40° 8' 56.751 N	104° 48' 1.832 W	
6,400.0	15.30	263.96	6,173.9	-160.5	-1,517.5	1,297,927.63	3,195,506.61	40° 8' 56.722 N	104° 48' 2.191 W	
6,500.0	13.30	263.96	6,270.8	-163.1	-1,542.1	1,297,924.84	3,195,482.07	40° 8' 56.696 N	104° 48' 2.508 W	
6,600.0	11.30	263.96	6,368.5	-165.3	-1,563.3	1,297,922.43	3,195,460.90	40° 8' 56.674 N	104° 48' 2.780 W	
6,700.0	9.30	263.96	6,466.9	-167.2	-1,581.1	1,297,920.41	3,195,443.13	40° 8' 56.655 N	104° 48' 3.010 W	
6,800.0	7.30	263.96	6,565.9	-168.7	-1,595.4	1,297,918.78	3,195,428.78	40° 8' 56.640 N	104° 48' 3.194 W	
6,900.0	5.30	263.96	6,665.3	-169.9	-1,606.4	1,297,917.54	3,195,417.88	40° 8' 56.629 N	104° 48' 3.335 W	
7,000.0	3.30	263.96	6,765.0	-170.7	-1,613.8	1,297,916.69	3,195,410.42	40° 8' 56.621 N	104° 48' 3.431 W	
7,100.0	1.30	263.96	6,864.9	-171.1	-1,617.8	1,297,916.23	3,195,406.43	40° 8' 56.617 N	104° 48' 3.483 W	
7,165.1	0.00	0.00	6,930.0	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,200.0	0.00	0.00	6,964.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,300.0	0.00	0.00	7,064.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,400.0	0.00	0.00	7,164.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,500.0	0.00	0.00	7,264.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,600.0	0.00	0.00	7,364.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,700.0	0.00	0.00	7,464.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,800.0	0.00	0.00	7,564.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
7,900.0	0.00	0.00	7,664.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
8,000.0	0.00	0.00	7,764.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
8,100.0	0.00	0.00	7,864.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
8,200.0	0.00	0.00	7,964.9	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	
8,205.1	0.00	0.00	7,970.0	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	

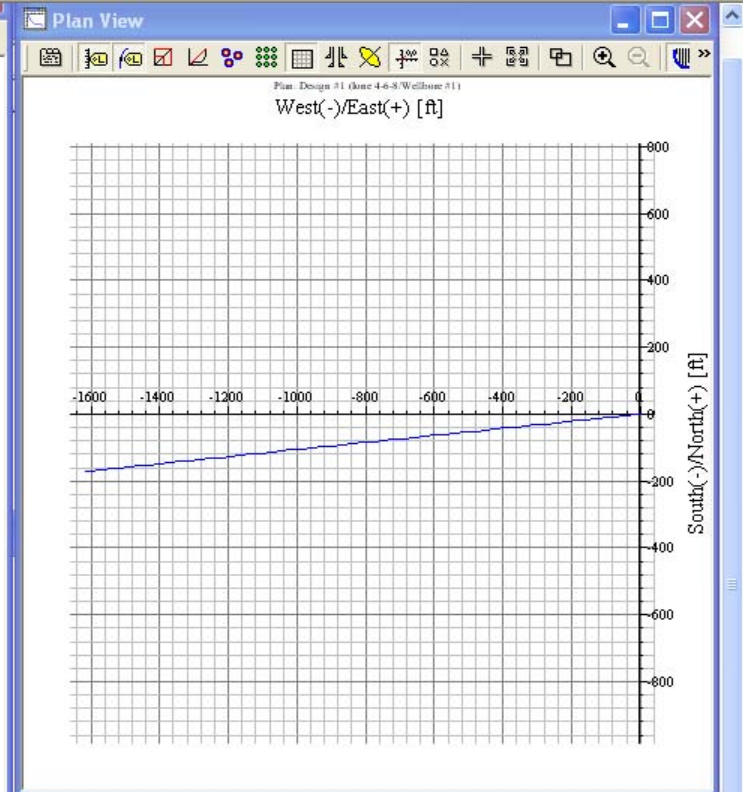
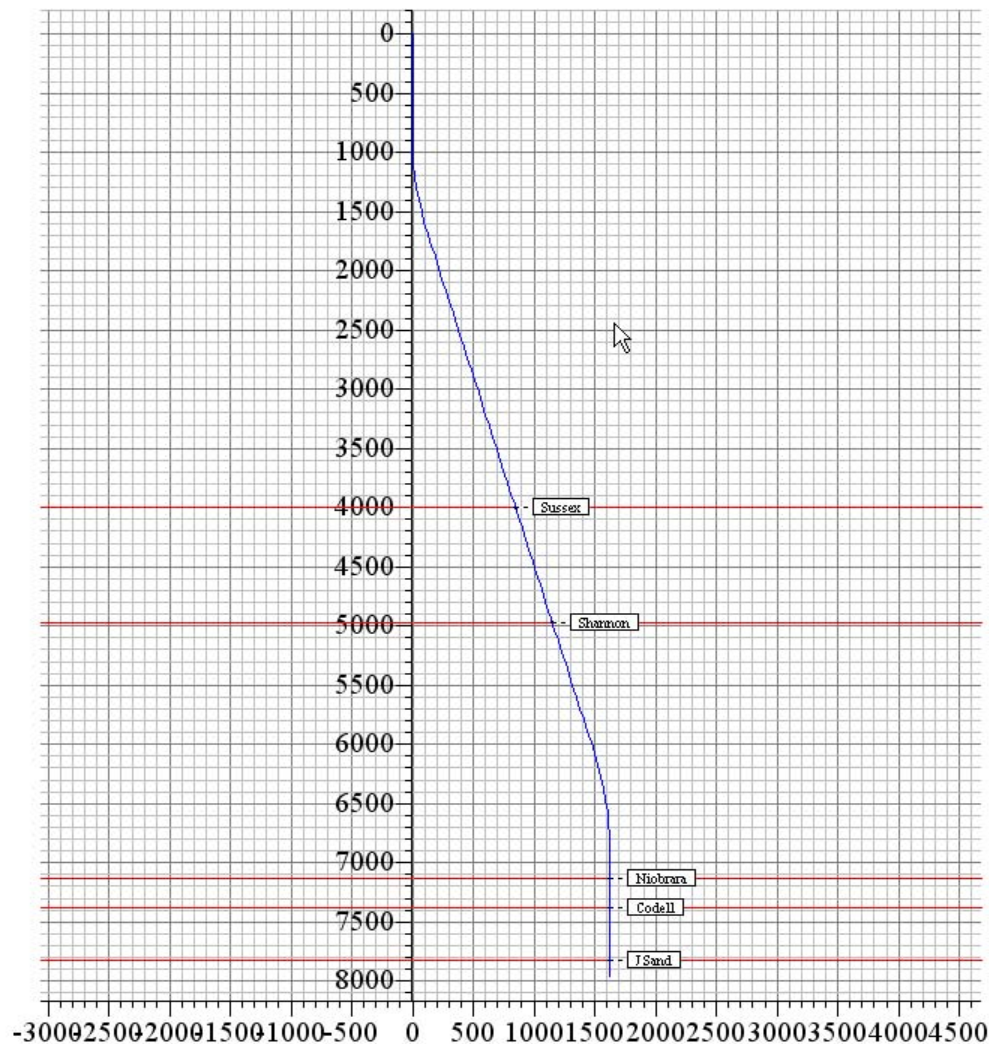
Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
4-6-8 BHL - plan hits target - Point	0.00	0.00	7,970.0	-171.2	-1,618.5	1,297,916.15	3,195,405.70	40° 8' 56.616 N	104° 48' 3.492 W	

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Planning Report - Geographic

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Ione 4-6-8
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 4895.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4895.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Ione 4-6-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	4,117.6	3,995.0	Sussex		0.00	
	5,139.1	4,970.0	Shannon		0.00	
	7,365.1	7,130.0	Niobrara		0.00	
	7,610.1	7,375.0	Codell		0.00	
	8,055.1	7,820.0	J Sand		0.00	

True Vertical Depth [ft]



Design Formation Top Editor - Ione 4-6-8/Wellbore #1/Desig...

	MD (ft)	TVD WH (ft)	TVD Sys (ft)	TVD Path (ft)	Name	Lithology
1	4117.6	3995.0	-900.0	3995.0	Sussex	(none)
2	5139.1	4970.0	75.0	4970.0	Shannon	(none)
3	7365.1	7130.0	2235.0	7130.0	Niobrara	(none)
4	7610.1	7375.0	2480.0	7375.0	Codell	(none)
5	8055.1	7820.0	2925.0	7820.0	J Sand	(none)
6						

Surface location: 1520' FSL, 973' FEL

Bottomhole location: 1350' FSL, 2590' FEL

EnCana Oil & Gas (USA) Inc.  
Ione 4-6-8