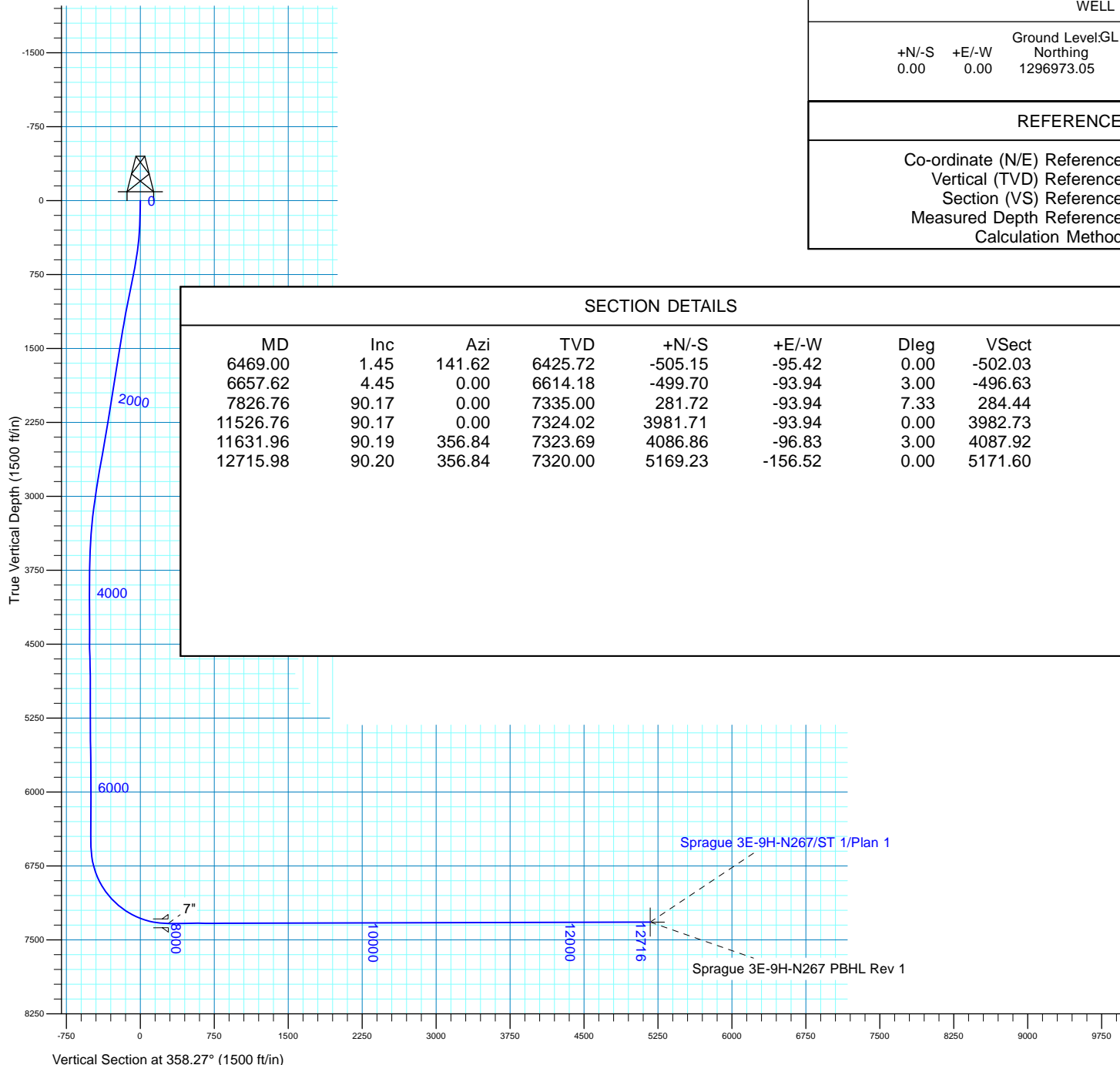




Azimuths to True North  
Magnetic North: 8.52°  
  
Magnetic Field  
Strength: 52473.1snT  
Dip Angle: 66.69°  
Date: 3/4/2015  
Model: BGGM2014



#### WELL DETAILS: Sprague 3E-9H-N267

+N/-S	+E/-W	Ground Level: GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)	Northing	Easting	Latitude	Longitude
0.00	0.00		1296973.05	3168150.61	40.147020	-104.898490

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Sprague 3E-9H-N267, True North  
Vertical (TVD) Reference: GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)  
Section (VS) Reference: Slot - (0.00N, 0.00E)  
Measured Depth Reference: GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)  
Calculation Method: Minimum Curvature

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
6469.00	1.45	141.62	6425.72	-505.15	-95.42	0.00	-502.03
6657.62	4.45	0.00	6614.18	-499.70	-93.94	3.00	-496.63
7826.76	90.17	0.00	7335.00	281.72	-93.94	7.33	284.44
11526.76	90.17	0.00	7324.02	3981.71	-93.94	0.00	3982.73
11631.96	90.19	356.84	7323.69	4086.86	-96.83	3.00	4087.92
12715.98	90.20	356.84	7320.00	5169.23	-156.52	0.00	5171.60

Project: DJ Wattenberg  
Site: S9-T2N-R67W (Sprague)  
Well: Sprague 3E-9H-N267  
Wellbore: ST 1  
Design: Plan 1

#### SITE DETAILS: S9-T2N-R67W (Sprague)

Site Centre Latitude: 40.151070  
Longitude: -104.902260

Positional Uncertainty: 0.00  
Convergence: 0.39  
Local North: True

#### COMPANY DETAILS: EnCana Oil & Gas (USA)

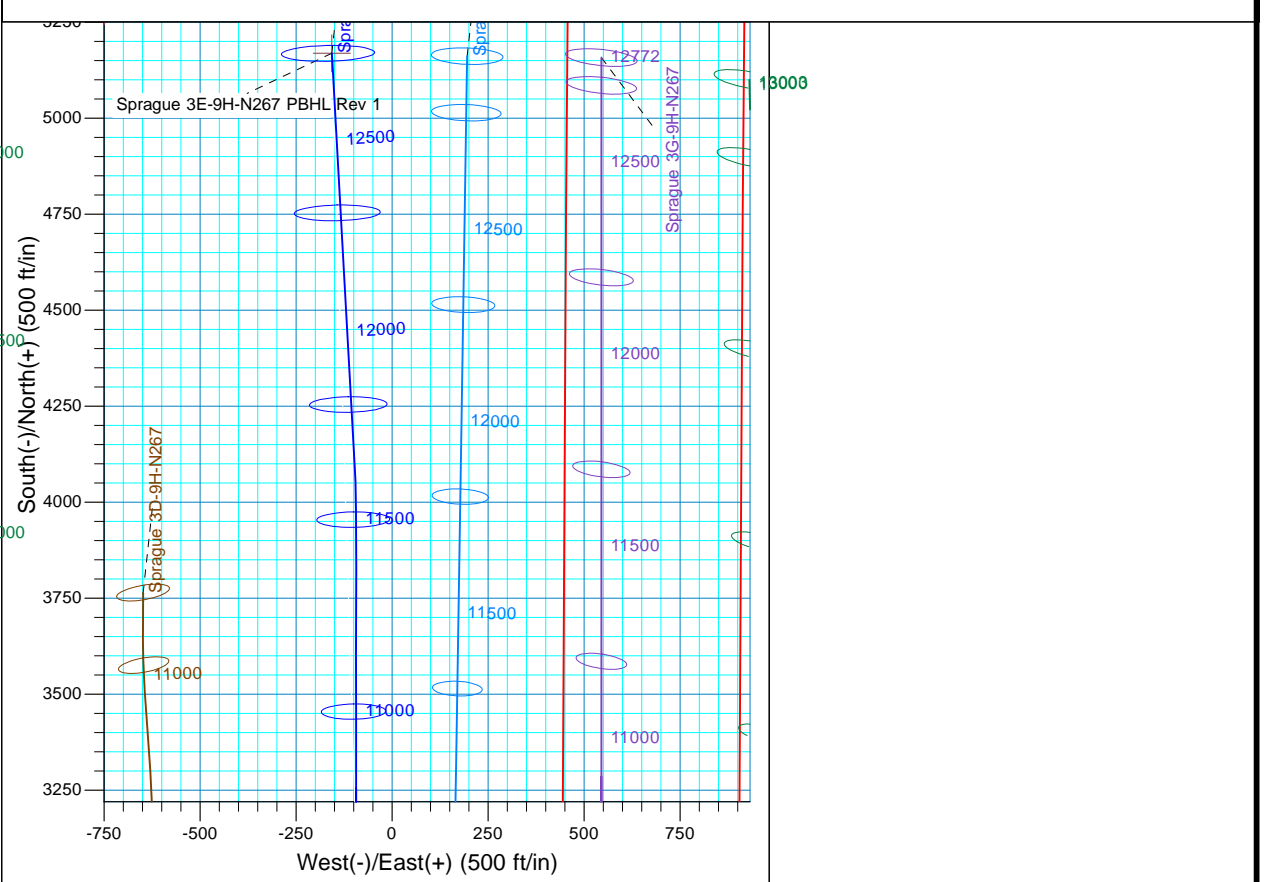
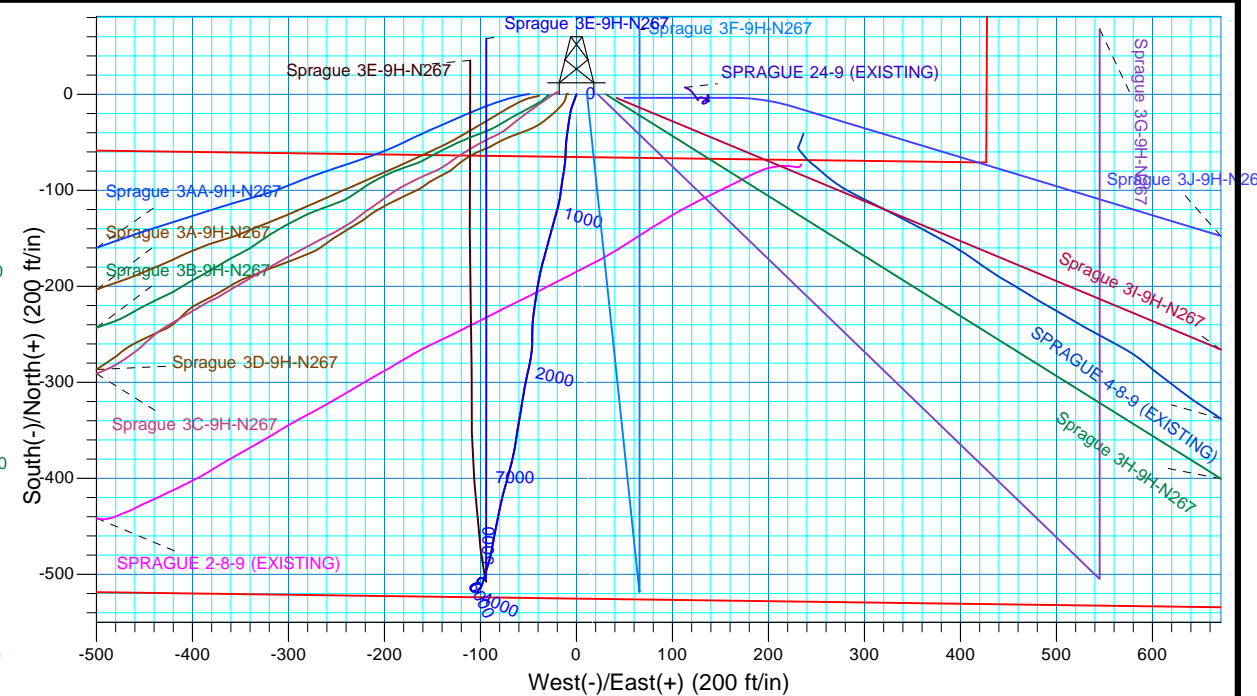
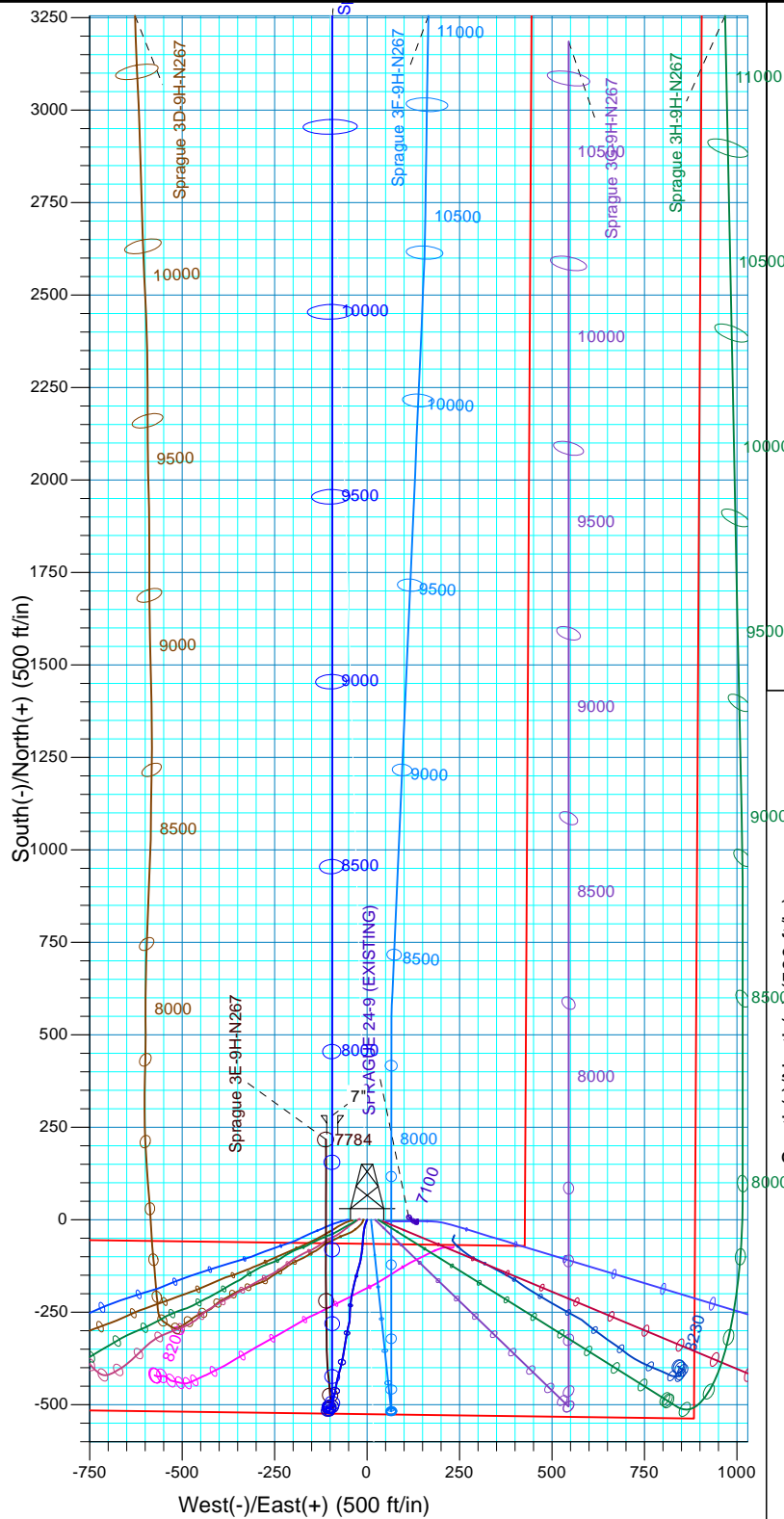
Calculation Method: Minimum Curvature  
Error System: ISCWSA  
Scan Method: Closest Approach 3D  
Error Surface: Elliptical Conic  
Warning Method: Error Ratio

#### PROJECT DETAILS: DJ Wattenberg

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level  
Local North: True

Plan: Plan 1 (Sprague 3E-9H-N267/ST 1)

Created By: Seth Burstad Date: 3-4-15





## **EnCana Oil & Gas (USA)**

DJ Wattenberg  
S9-T2N-R67W (Sprague)  
Sprague 3E-9H-N267

ST 1

Plan: Plan 1

## **Standard Planning Report**

04 March, 2015





<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Sprague 3E-9H-N267
<b>Company:</b>	EnCana Oil & Gas (USA)	<b>TVD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Site:</b>	S9-T2N-R67W (Sprague)	<b>North Reference:</b>	True
<b>Well:</b>	Sprague 3E-9H-N267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST 1		
<b>Design:</b>	Plan 1		

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

Site		S9-T2N-R67W (Sprague)			
Site Position:		Northing:	1,298,441.30 usft	Latitude:	40.151070
From:	Lat/Long	Easting:	3,167,086.79 usft	Longitude:	-104.902260
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	Sprague 3E-9H-N267, 521' FSL 1717' FWL Sec 9 T2N R67W					
Well Position	+N/-S	-1,475.39 ft	Northing:	1,296,973.05 usft	Latitude:	40.147020
	+E/-W	1,053.90 ft	Easting:	3,168,150.61 usft	Longitude:	-104.898490
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,982.00 ft

<b>Wellbore</b>	ST 1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2014	3/4/2015	8.52	66.69	52,473

<b>Design</b>	Plan 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	6,469.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	358.27

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
6,469.00	1.45	141.62	6,425.72	-505.15	-95.42	0.00	0.00	0.00	0.00	
6,657.62	4.45	0.00	6,614.18	-499.70	-93.94	3.00	1.59	-75.08	-150.75	
7,826.76	90.17	0.00	7,335.00	281.72	-93.94	7.33	7.33	0.00	0.00	
11,526.76	90.17	0.00	7,324.02	3,981.71	-93.94	0.00	0.00	0.00	0.00	
11,631.96	90.19	356.84	7,323.69	4,086.86	-96.83	3.00	0.02	-3.00	-89.63	Sprague 3E-9H-N267
12,715.98	90.20	356.84	7,320.00	5,169.23	-156.52	0.00	0.00	0.00	0.00	Sprague 3E-9H-N267

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Sprague 3E-9H-N267
<b>Company:</b>	EnCana Oil & Gas (USA)	<b>TVD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Site:</b>	S9-T2N-R67W (Sprague)	<b>North Reference:</b>	True
<b>Well:</b>	Sprague 3E-9H-N267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST 1		
<b>Design:</b>	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)	Turn Rate (°/100ft)
6,469.00	1.45	141.62	6,425.72	-505.15	-95.42	-502.03	0.00	0.00	0.00
<b>Start DLS 3.00 TFO -150.75</b>									
6,500.00	0.78	106.18	6,456.71	-505.51	-94.97	-502.41	3.00	-2.15	-114.31
6,600.00	2.76	5.73	6,556.67	-503.31	-94.08	-500.23	3.00	1.97	-100.45
6,657.62	4.45	0.00	6,614.18	-499.70	-93.94	-496.63	3.00	2.94	-9.95
<b>Start DLS 7.33 TFO 0.00</b>									
6,700.00	7.56	0.00	6,656.32	-495.27	-93.94	-492.20	7.33	7.33	0.00
6,800.00	14.89	0.00	6,754.34	-475.82	-93.94	-472.75	7.33	7.33	0.00
6,900.00	22.22	0.00	6,849.08	-444.02	-93.94	-440.97	7.33	7.33	0.00
7,000.00	29.55	0.00	6,938.98	-400.39	-93.94	-397.36	7.33	7.33	0.00
7,100.00	36.88	0.00	7,022.58	-345.64	-93.94	-342.64	7.33	7.33	0.00
7,200.00	44.22	0.00	7,098.51	-280.67	-93.94	-277.70	7.33	7.33	0.00
7,300.00	51.55	0.00	7,165.53	-206.54	-93.94	-203.61	7.33	7.33	0.00
7,400.00	58.88	0.00	7,222.55	-124.47	-93.94	-121.57	7.33	7.33	0.00
7,500.00	66.21	0.00	7,268.62	-35.79	-93.94	-32.93	7.33	7.33	0.00
7,600.00	73.54	0.00	7,302.99	58.04	-93.94	60.86	7.33	7.33	0.00
7,700.00	80.88	0.00	7,325.12	155.49	-93.94	158.26	7.33	7.33	0.00
7,800.00	88.21	0.00	7,334.62	254.97	-93.94	257.70	7.33	7.33	0.00
7,826.76	90.17	0.00	7,335.00	281.73	-93.94	284.44	7.33	7.33	0.00
<b>Start 3700.00 hold at 7826.76 MD - 7"</b>									
7,900.00	90.17	0.00	7,334.78	354.97	-93.94	357.65	0.00	0.00	0.00
8,000.00	90.17	0.00	7,334.49	454.97	-93.94	457.60	0.00	0.00	0.00
8,100.00	90.17	0.00	7,334.19	554.97	-93.94	557.55	0.00	0.00	0.00
8,200.00	90.17	0.00	7,333.89	654.97	-93.94	657.51	0.00	0.00	0.00
8,300.00	90.17	0.00	7,333.60	754.96	-93.94	757.46	0.00	0.00	0.00
8,400.00	90.17	0.00	7,333.30	854.96	-93.94	857.42	0.00	0.00	0.00
8,500.00	90.17	0.00	7,333.00	954.96	-93.94	957.37	0.00	0.00	0.00
8,600.00	90.17	0.00	7,332.71	1,054.96	-93.94	1,057.32	0.00	0.00	0.00
8,700.00	90.17	0.00	7,332.41	1,154.96	-93.94	1,157.28	0.00	0.00	0.00
8,800.00	90.17	0.00	7,332.11	1,254.96	-93.94	1,257.23	0.00	0.00	0.00
8,900.00	90.17	0.00	7,331.82	1,354.96	-93.94	1,357.18	0.00	0.00	0.00
9,000.00	90.17	0.00	7,331.52	1,454.96	-93.94	1,457.14	0.00	0.00	0.00
9,100.00	90.17	0.00	7,331.22	1,554.96	-93.94	1,557.09	0.00	0.00	0.00
9,200.00	90.17	0.00	7,330.93	1,654.96	-93.94	1,657.05	0.00	0.00	0.00
9,300.00	90.17	0.00	7,330.63	1,754.96	-93.94	1,757.00	0.00	0.00	0.00
9,400.00	90.17	0.00	7,330.33	1,854.96	-93.94	1,856.95	0.00	0.00	0.00
9,500.00	90.17	0.00	7,330.04	1,954.96	-93.94	1,956.91	0.00	0.00	0.00
9,600.00	90.17	0.00	7,329.74	2,054.96	-93.94	2,056.86	0.00	0.00	0.00
9,700.00	90.17	0.00	7,329.44	2,154.96	-93.94	2,156.81	0.00	0.00	0.00
9,800.00	90.17	0.00	7,329.15	2,254.96	-93.94	2,256.77	0.00	0.00	0.00
9,900.00	90.17	0.00	7,328.85	2,354.96	-93.94	2,356.72	0.00	0.00	0.00
10,000.00	90.17	0.00	7,328.55	2,454.96	-93.94	2,456.68	0.00	0.00	0.00
10,100.00	90.17	0.00	7,328.26	2,554.96	-93.94	2,556.63	0.00	0.00	0.00
10,200.00	90.17	0.00	7,327.96	2,654.96	-93.94	2,656.58	0.00	0.00	0.00
10,300.00	90.17	0.00	7,327.66	2,754.96	-93.94	2,756.54	0.00	0.00	0.00
10,400.00	90.17	0.00	7,327.37	2,854.96	-93.94	2,856.49	0.00	0.00	0.00
10,500.00	90.17	0.00	7,327.07	2,954.96	-93.94	2,956.44	0.00	0.00	0.00
10,600.00	90.17	0.00	7,326.77	3,054.95	-93.94	3,056.40	0.00	0.00	0.00
10,700.00	90.17	0.00	7,326.48	3,154.95	-93.94	3,156.35	0.00	0.00	0.00
10,800.00	90.17	0.00	7,326.18	3,254.95	-93.94	3,256.31	0.00	0.00	0.00
10,900.00	90.17	0.00	7,325.88	3,354.95	-93.94	3,356.26	0.00	0.00	0.00
11,000.00	90.17	0.00	7,325.58	3,454.95	-93.94	3,456.21	0.00	0.00	0.00

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Sprague 3E-9H-N267
<b>Company:</b>	EnCana Oil & Gas (USA)	<b>TVD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Site:</b>	S9-T2N-R67W (Sprague)	<b>North Reference:</b>	True
<b>Well:</b>	Sprague 3E-9H-N267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST 1		
<b>Design:</b>	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)	Turn Rate (°/100ft)
11,100.00	90.17	0.00	7,325.29	3,554.95	-93.94	3,556.17	0.00	0.00	0.00
11,200.00	90.17	0.00	7,324.99	3,654.95	-93.94	3,656.12	0.00	0.00	0.00
11,300.00	90.17	0.00	7,324.69	3,754.95	-93.94	3,756.07	0.00	0.00	0.00
11,400.00	90.17	0.00	7,324.40	3,854.95	-93.94	3,856.03	0.00	0.00	0.00
11,500.00	90.17	0.00	7,324.10	3,954.95	-93.94	3,955.98	0.00	0.00	0.00
11,526.76	90.17	0.00	7,324.02	3,981.71	-93.94	3,982.73	0.00	0.00	0.00
Start DLS 3.00 TFO -89.63									
11,600.00	90.18	357.80	7,323.80	4,054.93	-95.34	4,055.96	3.00	0.02	-3.00
11,631.96	90.19	356.84	7,323.69	4,086.86	-96.83	4,087.92	3.00	0.02	-3.00
Start DLS 0.00 TFO 0.00									
11,700.00	90.19	356.84	7,323.47	4,154.79	-100.58	4,155.93	0.00	0.00	0.00
11,800.00	90.19	356.84	7,323.13	4,254.64	-106.09	4,255.90	0.00	0.00	0.00
11,900.00	90.19	356.84	7,322.80	4,354.49	-111.59	4,355.87	0.00	0.00	0.00
12,000.00	90.19	356.84	7,322.46	4,454.34	-117.10	4,455.84	0.00	0.00	0.00
12,100.00	90.19	356.84	7,322.12	4,554.18	-122.60	4,555.81	0.00	0.00	0.00
12,200.00	90.20	356.84	7,321.78	4,654.03	-128.11	4,655.78	0.00	0.00	0.00
12,300.00	90.20	356.84	7,321.44	4,753.88	-133.61	4,755.75	0.00	0.00	0.00
12,400.00	90.20	356.84	7,321.10	4,853.73	-139.12	4,855.71	0.00	0.00	0.00
12,500.00	90.20	356.84	7,320.75	4,953.58	-144.62	4,955.68	0.00	0.00	0.00
12,600.00	90.20	356.84	7,320.40	5,053.42	-150.13	5,055.65	0.00	0.00	0.00
12,700.00	90.20	356.84	7,320.06	5,153.27	-155.64	5,155.62	0.00	0.00	0.00
12,715.98	90.20	356.84	7,320.00	5,169.22	-156.52	5,171.59	0.00	0.00	0.00
TD at 12715.98									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Sprague 3E-9H-N267 PI	0.00	0.00	7,320.00	5,169.23	-156.52	1,302,141.09	3,167,959.04	40.161210	-104.899050
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
7,826.76	7,335.00	7"	7.000	8.750	

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Sprague 3E-9H-N267
<b>Company:</b>	EnCana Oil & Gas (USA)	<b>TVD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	GL 4982' & KB 28.5' @ 5010.50ft (Patterson 272)
<b>Site:</b>	S9-T2N-R67W (Sprague)	<b>North Reference:</b>	True
<b>Well:</b>	Sprague 3E-9H-N267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST 1		
<b>Design:</b>	Plan 1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,469.00	6,425.72	-505.15	-95.42	Start DLS 3.00 TFO -150.75
6,657.62	6,614.18	-499.70	-93.94	Start DLS 7.33 TFO 0.00
7,826.76	7,335.00	281.72	-93.94	Start 3700.00 hold at 7826.76 MD
11,526.76	7,324.02	3,981.71	-93.94	Start DLS 3.00 TFO -89.63
11,631.96	7,323.69	4,086.86	-96.83	Start DLS 0.00 TFO 0.00
12,715.98	7,320.00	5,169.22	-156.52	TD at 12715.98