

**Project:** Weld County, CO  
**Site:** SEC 19, T8N-R66W  
**Well:** Pikes 8-66-30-31C  
**Wellbore:** Hz  
**Design:** Plan 1

## Reference Details

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Latitude: 40° 38' 39.213 N  
 Longitude: 104° 49' 36.840 W  
 Grid Convergence: 0.43° West  
 Ground Elevation: 5266.0  
 KB Elevation: Well @ 5292.0usft



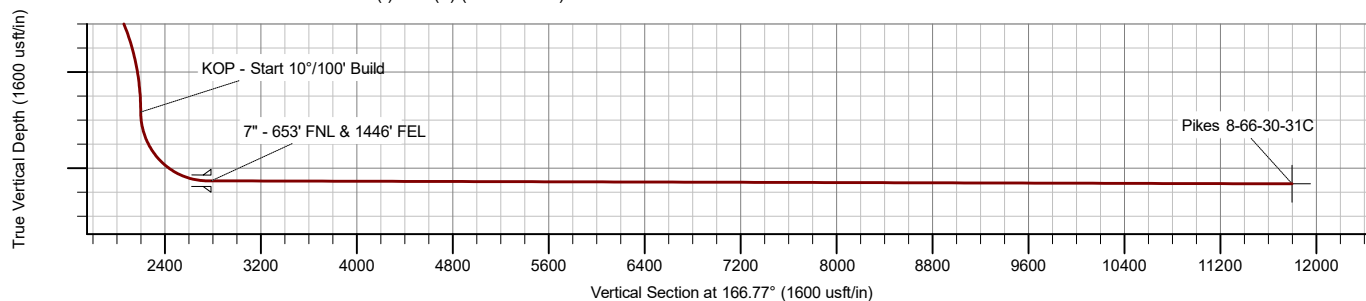
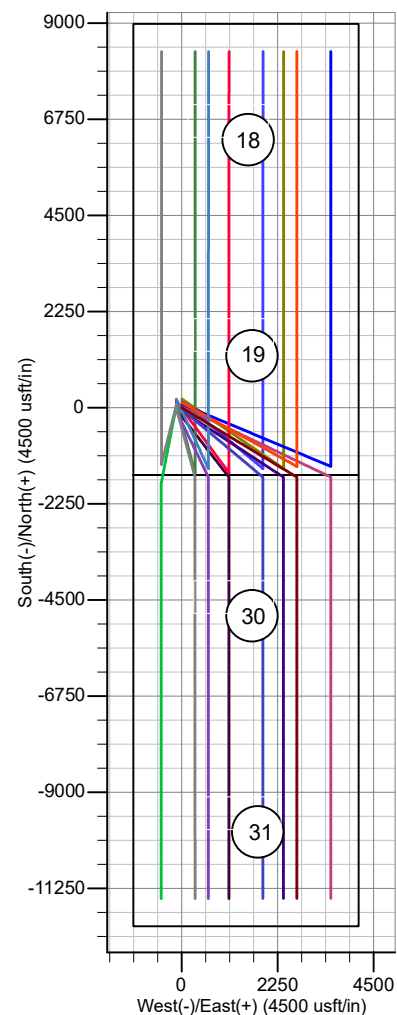
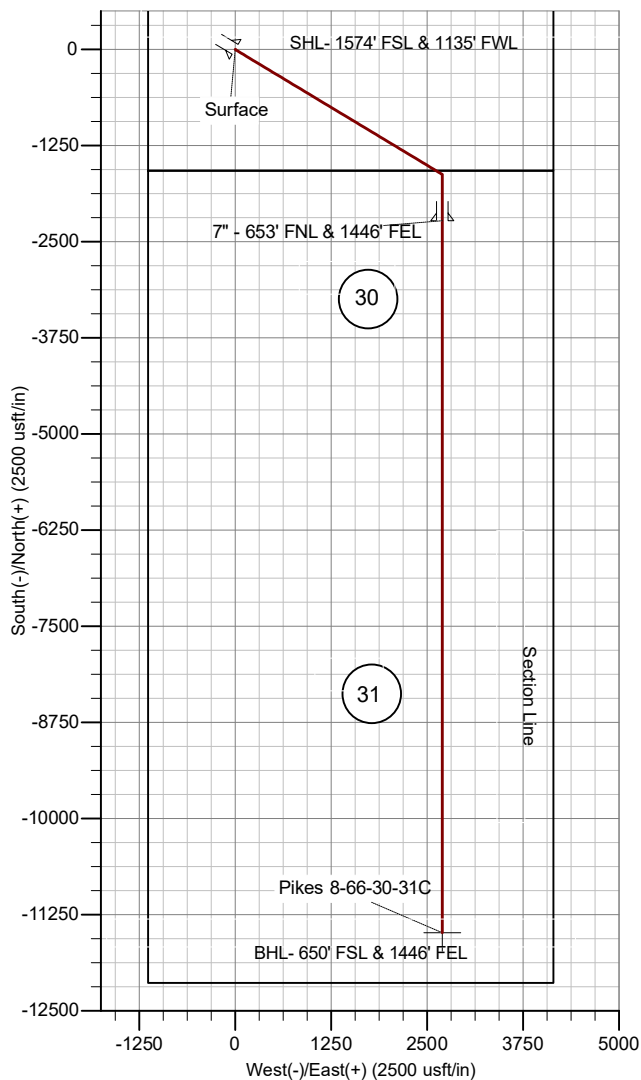
**RPM Consulting, Inc.**  
 1600 Broadway, Suite 1510  
 Denver, CO 80013  
 303-595-7625

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0
1594.9	0.00	0.00	1594.9	0.0	0.0	0.00	0.00	0.0
2519.9	37.00	121.04	2457.0	-148.7	247.1	4.00	121.04	201.3
6794.7	37.00	121.04	5871.0	-1475.3	2451.4	0.00	0.00	1997.0
7719.7	0.00	0.00	6733.0	-1624.0	2698.5	4.00	180.00	2198.3
8618.2	89.85	180.00	7306.0	-2195.5	2698.5	10.00	180.00	2754.6
8672.8	89.85	180.00	7306.1	-2250.0	2698.5	0.01	-145.47	2807.7
17906.8	89.85	180.00	7331.0	-11484.0	2699.0	0.00	0.00	11796.9

## CASING DETAILS

TVD	MD	Name
1500.0	1500.0	Surface
7306.0	8650.0	Intermediate



# **Enerplus Resources (USA) Corporation**

**Weld County, CO  
SEC 19, T8N-R66W  
Pikes 8-66-30-31C**

**Hz**

**Plan: Plan 1**

## **Standard Planning Report**

**19 July, 2017**

## Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well Pikes 8-66-30-31C
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5292.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5292.0usft
<b>Site:</b>	SEC 19, T8N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Pikes 8-66-30-31C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan 1		

<b>Project</b>	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		SEC 19, T8N-R66W			
Site Position:		Northing:	1,478,446.87 usft	Latitude:	40° 38' 41.240 N
From:	Lat/Long	Easting:	3,186,657.85 usft	Longitude:	104° 49' 38.510 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	Pikes 8-66-30-31C					
Well Position	+N/-S	-205.1 usft	Northing:	1,478,242.73 usft	Latitude:	40° 38' 39.213 N
	+E/-W	128.8 usft	Easting:	3,186,788.16 usft	Longitude:	104° 49' 36.840 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,266.0 usft

<b>Wellbore</b>	Hz				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/19/2017	8.09	67.02	52,606.74977150

<b>Design</b>	Plan 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) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	166.77

<b>Plan Survey Tool Program</b>	<b>Date</b>	7/19/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	17,906.8 Plan 1 (Hz)	MWD	
			Geolink MWD	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,594.9	0.00	0.00	1,594.9	0.0	0.0	0.00	0.00	0.00	0.00	
2,519.9	37.00	121.04	2,457.0	-148.7	247.1	4.00	4.00	0.00	121.04	
6,794.7	37.00	121.04	5,871.0	-1,475.3	2,451.4	0.00	0.00	0.00	0.00	
7,719.7	0.00	0.00	6,733.0	-1,624.0	2,698.5	4.00	-4.00	0.00	180.00	
8,618.2	89.85	180.00	7,306.0	-2,195.5	2,698.5	10.00	10.00	0.00	180.00	
8,672.8	89.85	180.00	7,306.1	-2,250.0	2,698.5	0.01	-0.01	-0.01	-145.47	
17,906.8	89.85	180.00	7,331.0	-11,484.0	2,699.0	0.00	0.00	0.00	0.00	Pikes 8-66-30-31C

# Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well Pikes 8-66-30-31C
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5292.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5292.0usft
<b>Site:</b>	SEC 19, T8N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Pikes 8-66-30-31C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
9-5/8" - Surface									
1,594.9	0.00	0.00	1,594.9	0.0	0.0	0.0	0.00	0.00	0.00
Begin Nudge									
1,600.0	0.20	121.04	1,600.0	0.0	0.0	0.0	3.97	3.97	0.00
1,700.0	4.20	121.04	1,699.9	-2.0	3.3	2.7	4.00	4.00	0.00
1,800.0	8.20	121.04	1,799.3	-7.6	12.6	10.2	4.00	4.00	0.00
1,900.0	12.20	121.04	1,897.7	-16.7	27.7	22.6	4.00	4.00	0.00
2,000.0	16.20	121.04	1,994.6	-29.3	48.7	39.7	4.00	4.00	0.00
2,100.0	20.20	121.04	2,089.6	-45.4	75.5	61.5	4.00	4.00	0.00
2,200.0	24.20	121.04	2,182.2	-64.9	107.9	87.9	4.00	4.00	0.00
2,300.0	28.20	121.04	2,271.9	-87.7	145.7	118.7	4.00	4.00	0.00
2,400.0	32.20	121.04	2,358.3	-113.6	188.8	153.8	4.00	4.00	0.00
2,500.0	36.20	121.04	2,441.0	-142.6	236.9	193.0	4.00	4.00	0.00
2,519.9	37.00	121.04	2,457.0	-148.7	247.1	201.3	4.00	4.00	0.00
2,600.0	37.00	121.04	2,520.9	-173.6	288.4	235.0	0.00	0.00	0.00
2,700.0	37.00	121.04	2,600.8	-204.6	340.0	277.0	0.00	0.00	0.00
2,800.0	37.00	121.04	2,680.6	-235.6	391.5	319.0	0.00	0.00	0.00
2,900.0	37.00	121.04	2,760.5	-266.7	443.1	361.0	0.00	0.00	0.00
3,000.0	37.00	121.04	2,840.4	-297.7	494.7	403.0	0.00	0.00	0.00
3,100.0	37.00	121.04	2,920.2	-328.7	546.2	445.0	0.00	0.00	0.00
3,200.0	37.00	121.04	3,000.1	-359.8	597.8	487.0	0.00	0.00	0.00
3,300.0	37.00	121.04	3,080.0	-390.8	649.4	529.0	0.00	0.00	0.00
3,400.0	37.00	121.04	3,159.8	-421.8	700.9	571.0	0.00	0.00	0.00
3,500.0	37.00	121.04	3,239.7	-452.9	752.5	613.0	0.00	0.00	0.00
3,600.0	37.00	121.04	3,319.6	-483.9	804.1	655.0	0.00	0.00	0.00
3,700.0	37.00	121.04	3,399.4	-514.9	855.6	697.0	0.00	0.00	0.00
3,800.0	37.00	121.04	3,479.3	-546.0	907.2	739.0	0.00	0.00	0.00
3,900.0	37.00	121.04	3,559.1	-577.0	958.7	781.0	0.00	0.00	0.00
4,000.0	37.00	121.04	3,639.0	-608.0	1,010.3	823.0	0.00	0.00	0.00
4,100.0	37.00	121.04	3,718.9	-639.1	1,061.9	865.0	0.00	0.00	0.00
4,200.0	37.00	121.04	3,798.7	-670.1	1,113.4	907.1	0.00	0.00	0.00
4,300.0	37.00	121.04	3,878.6	-701.1	1,165.0	949.1	0.00	0.00	0.00
4,400.0	37.00	121.04	3,958.5	-732.1	1,216.6	991.1	0.00	0.00	0.00
4,500.0	37.00	121.04	4,038.3	-763.2	1,268.1	1,033.1	0.00	0.00	0.00
4,600.0	37.00	121.04	4,118.2	-794.2	1,319.7	1,075.1	0.00	0.00	0.00
4,700.0	37.00	121.04	4,198.1	-825.2	1,371.3	1,117.1	0.00	0.00	0.00
4,800.0	37.00	121.04	4,277.9	-856.3	1,422.8	1,159.1	0.00	0.00	0.00

# Planning Report

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<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5292.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5292.0usft
<b>Site:</b>	SEC 19, T8N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Pikes 8-66-30-31C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.0	37.00	121.04	4,357.8	-887.3	1,474.4	1,201.1	0.00	0.00	0.00
5,000.0	37.00	121.04	4,437.6	-918.3	1,525.9	1,243.1	0.00	0.00	0.00
5,100.0	37.00	121.04	4,517.5	-949.4	1,577.5	1,285.1	0.00	0.00	0.00
5,200.0	37.00	121.04	4,597.4	-980.4	1,629.1	1,327.1	0.00	0.00	0.00
5,300.0	37.00	121.04	4,677.2	-1,011.4	1,680.6	1,369.1	0.00	0.00	0.00
5,400.0	37.00	121.04	4,757.1	-1,042.5	1,732.2	1,411.1	0.00	0.00	0.00
5,500.0	37.00	121.04	4,837.0	-1,073.5	1,783.8	1,453.1	0.00	0.00	0.00
5,600.0	37.00	121.04	4,916.8	-1,104.5	1,835.3	1,495.1	0.00	0.00	0.00
5,700.0	37.00	121.04	4,996.7	-1,135.6	1,886.9	1,537.1	0.00	0.00	0.00
5,800.0	37.00	121.04	5,076.5	-1,166.6	1,938.5	1,579.1	0.00	0.00	0.00
5,900.0	37.00	121.04	5,156.4	-1,197.6	1,990.0	1,621.2	0.00	0.00	0.00
6,000.0	37.00	121.04	5,236.3	-1,228.7	2,041.6	1,663.2	0.00	0.00	0.00
6,100.0	37.00	121.04	5,316.1	-1,259.7	2,093.1	1,705.2	0.00	0.00	0.00
6,200.0	37.00	121.04	5,396.0	-1,290.7	2,144.7	1,747.2	0.00	0.00	0.00
6,300.0	37.00	121.04	5,475.9	-1,321.8	2,196.3	1,789.2	0.00	0.00	0.00
6,400.0	37.00	121.04	5,555.7	-1,352.8	2,247.8	1,831.2	0.00	0.00	0.00
6,500.0	37.00	121.04	5,635.6	-1,383.8	2,299.4	1,873.2	0.00	0.00	0.00
6,600.0	37.00	121.04	5,715.5	-1,414.8	2,351.0	1,915.2	0.00	0.00	0.00
6,700.0	37.00	121.04	5,795.3	-1,445.9	2,402.5	1,957.2	0.00	0.00	0.00
6,794.7	37.00	121.04	5,871.0	-1,475.3	2,451.4	1,997.0	0.00	0.00	0.00
6,800.0	36.79	121.04	5,875.2	-1,476.9	2,454.1	1,999.2	4.00	-4.00	0.00
6,900.0	32.79	121.04	5,957.3	-1,506.3	2,503.0	2,039.0	4.00	-4.00	0.00
7,000.0	28.79	121.04	6,043.2	-1,532.7	2,546.8	2,074.7	4.00	-4.00	0.00
7,100.0	24.79	121.04	6,132.4	-1,555.9	2,585.4	2,106.2	4.00	-4.00	0.00
7,200.0	20.79	121.04	6,224.6	-1,575.9	2,618.6	2,133.2	4.00	-4.00	0.00
7,300.0	16.79	121.04	6,319.3	-1,592.5	2,646.2	2,155.7	4.00	-4.00	0.00
7,400.0	12.79	121.04	6,415.9	-1,605.7	2,668.1	2,173.5	4.00	-4.00	0.00
7,500.0	8.79	121.04	6,514.1	-1,615.3	2,684.1	2,186.6	4.00	-4.00	0.00
7,600.0	4.79	121.04	6,613.4	-1,621.4	2,694.2	2,194.8	4.00	-4.00	0.00
7,700.0	0.79	121.04	6,713.3	-1,623.9	2,698.4	2,198.2	4.00	-4.00	0.00
7,719.7	0.00	121.04	6,733.0	-1,624.0	2,698.5	2,198.3	4.00	-4.00	0.00
<b>KOP - Start 10°/100' Build</b>									
7,800.0	8.03	180.00	6,813.0	-1,629.6	2,698.5	2,203.8	10.00	10.00	73.42
7,900.0	18.03	180.00	6,910.3	-1,652.1	2,698.5	2,225.7	10.00	10.00	0.00
8,000.0	28.03	180.00	7,002.2	-1,691.2	2,698.5	2,263.7	10.00	10.00	0.00
8,100.0	38.03	180.00	7,086.0	-1,745.6	2,698.5	2,316.7	10.00	10.00	0.00
8,200.0	48.03	180.00	7,159.0	-1,813.8	2,698.5	2,383.1	10.00	10.00	0.00
8,300.0	58.03	180.00	7,219.0	-1,893.6	2,698.5	2,460.7	10.00	10.00	0.00
8,400.0	68.03	180.00	7,264.3	-1,982.6	2,698.5	2,547.4	10.00	10.00	0.00
8,500.0	78.03	180.00	7,293.5	-2,078.1	2,698.5	2,640.4	10.00	10.00	0.00
8,600.0	88.03	180.00	7,305.6	-2,177.2	2,698.5	2,736.9	10.00	10.00	0.00
8,618.2	89.85	180.00	7,306.0	-2,195.5	2,698.5	2,754.6	10.00	10.00	0.00
8,650.0	89.85	180.00	7,306.0	-2,227.2	2,698.5	2,785.6	0.00	0.00	0.00
<b>7" - 653' FNL &amp; 1446' FEL - Intermediate</b>									
8,672.8	89.85	180.00	7,306.1	-2,250.0	2,698.5	2,807.7	0.02	-0.02	-0.01
8,700.0	89.85	180.00	7,306.2	-2,277.2	2,698.5	2,834.2	0.00	0.00	0.00
8,800.0	89.85	180.00	7,306.4	-2,377.2	2,698.5	2,931.6	0.00	0.00	0.00
8,900.0	89.85	180.00	7,306.7	-2,477.2	2,698.5	3,028.9	0.00	0.00	0.00
9,000.0	89.85	180.00	7,307.0	-2,577.2	2,698.5	3,126.3	0.00	0.00	0.00
9,100.0	89.85	180.00	7,307.3	-2,677.2	2,698.5	3,223.6	0.00	0.00	0.00
9,200.0	89.85	180.00	7,307.5	-2,777.2	2,698.5	3,321.0	0.00	0.00	0.00
9,300.0	89.85	180.00	7,307.8	-2,877.2	2,698.5	3,418.3	0.00	0.00	0.00
9,400.0	89.85	180.00	7,308.1	-2,977.2	2,698.5	3,515.7	0.00	0.00	0.00
9,500.0	89.85	180.00	7,308.3	-3,077.2	2,698.5	3,613.0	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well Pikes 8-66-30-31C
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5292.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5292.0usft
<b>Site:</b>	SEC 19, T8N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Pikes 8-66-30-31C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,600.0	89.85	180.00	7,308.6	-3,177.2	2,698.6	3,710.4	0.00	0.00	0.00
9,700.0	89.85	180.00	7,308.9	-3,277.2	2,698.6	3,807.7	0.00	0.00	0.00
9,800.0	89.85	180.00	7,309.1	-3,377.2	2,698.6	3,905.1	0.00	0.00	0.00
9,900.0	89.85	180.00	7,309.4	-3,477.2	2,698.6	4,002.4	0.00	0.00	0.00
10,000.0	89.85	180.00	7,309.7	-3,577.2	2,698.6	4,099.8	0.00	0.00	0.00
10,100.0	89.85	180.00	7,309.9	-3,677.2	2,698.6	4,197.1	0.00	0.00	0.00
10,200.0	89.85	180.00	7,310.2	-3,777.2	2,698.6	4,294.5	0.00	0.00	0.00
10,300.0	89.85	180.00	7,310.5	-3,877.2	2,698.6	4,391.8	0.00	0.00	0.00
10,400.0	89.85	180.00	7,310.8	-3,977.2	2,698.6	4,489.2	0.00	0.00	0.00
10,500.0	89.85	180.00	7,311.0	-4,077.2	2,698.6	4,586.5	0.00	0.00	0.00
10,600.0	89.85	180.00	7,311.3	-4,177.2	2,698.6	4,683.9	0.00	0.00	0.00
10,700.0	89.85	180.00	7,311.6	-4,277.2	2,698.6	4,781.2	0.00	0.00	0.00
10,800.0	89.85	180.00	7,311.8	-4,377.2	2,698.6	4,878.5	0.00	0.00	0.00
10,900.0	89.85	180.00	7,312.1	-4,477.2	2,698.6	4,975.9	0.00	0.00	0.00
11,000.0	89.85	180.00	7,312.4	-4,577.2	2,698.6	5,073.2	0.00	0.00	0.00
11,100.0	89.85	180.00	7,312.6	-4,677.2	2,698.6	5,170.6	0.00	0.00	0.00
11,200.0	89.85	180.00	7,312.9	-4,777.2	2,698.6	5,267.9	0.00	0.00	0.00
11,300.0	89.85	180.00	7,313.2	-4,877.2	2,698.6	5,365.3	0.00	0.00	0.00
11,400.0	89.85	180.00	7,313.5	-4,977.2	2,698.6	5,462.6	0.00	0.00	0.00
11,500.0	89.85	180.00	7,313.7	-5,077.2	2,698.7	5,560.0	0.00	0.00	0.00
11,600.0	89.85	180.00	7,314.0	-5,177.2	2,698.7	5,657.3	0.00	0.00	0.00
11,700.0	89.85	180.00	7,314.3	-5,277.2	2,698.7	5,754.7	0.00	0.00	0.00
11,800.0	89.85	180.00	7,314.5	-5,377.2	2,698.7	5,852.0	0.00	0.00	0.00
11,900.0	89.85	180.00	7,314.8	-5,477.2	2,698.7	5,949.4	0.00	0.00	0.00
12,000.0	89.85	180.00	7,315.1	-5,577.2	2,698.7	6,046.7	0.00	0.00	0.00
12,100.0	89.85	180.00	7,315.3	-5,677.2	2,698.7	6,144.1	0.00	0.00	0.00
12,200.0	89.85	180.00	7,315.6	-5,777.2	2,698.7	6,241.4	0.00	0.00	0.00
12,300.0	89.85	180.00	7,315.9	-5,877.2	2,698.7	6,338.8	0.00	0.00	0.00
12,400.0	89.85	180.00	7,316.2	-5,977.2	2,698.7	6,436.1	0.00	0.00	0.00
12,500.0	89.85	180.00	7,316.4	-6,077.2	2,698.7	6,533.5	0.00	0.00	0.00
12,600.0	89.85	180.00	7,316.7	-6,177.2	2,698.7	6,630.8	0.00	0.00	0.00
12,700.0	89.85	180.00	7,317.0	-6,277.2	2,698.7	6,728.2	0.00	0.00	0.00
12,800.0	89.85	180.00	7,317.2	-6,377.2	2,698.7	6,825.5	0.00	0.00	0.00
12,900.0	89.85	180.00	7,317.5	-6,477.2	2,698.7	6,922.9	0.00	0.00	0.00
13,000.0	89.85	180.00	7,317.8	-6,577.2	2,698.7	7,020.2	0.00	0.00	0.00
13,100.0	89.85	180.00	7,318.0	-6,677.2	2,698.7	7,117.6	0.00	0.00	0.00
13,200.0	89.85	180.00	7,318.3	-6,777.2	2,698.7	7,214.9	0.00	0.00	0.00
13,300.0	89.85	180.00	7,318.6	-6,877.2	2,698.8	7,312.3	0.00	0.00	0.00
13,400.0	89.85	180.00	7,318.8	-6,977.2	2,698.8	7,409.6	0.00	0.00	0.00
13,500.0	89.85	180.00	7,319.1	-7,077.2	2,698.8	7,507.0	0.00	0.00	0.00
13,600.0	89.85	180.00	7,319.4	-7,177.2	2,698.8	7,604.3	0.00	0.00	0.00
13,700.0	89.85	180.00	7,319.7	-7,277.2	2,698.8	7,701.7	0.00	0.00	0.00
13,800.0	89.85	180.00	7,319.9	-7,377.2	2,698.8	7,799.0	0.00	0.00	0.00
13,900.0	89.85	180.00	7,320.2	-7,477.2	2,698.8	7,896.4	0.00	0.00	0.00
14,000.0	89.85	180.00	7,320.5	-7,577.2	2,698.8	7,993.7	0.00	0.00	0.00
14,100.0	89.85	180.00	7,320.7	-7,677.2	2,698.8	8,091.0	0.00	0.00	0.00
14,200.0	89.85	180.00	7,321.0	-7,777.2	2,698.8	8,188.4	0.00	0.00	0.00
14,300.0	89.85	180.00	7,321.3	-7,877.2	2,698.8	8,285.7	0.00	0.00	0.00
14,400.0	89.85	180.00	7,321.5	-7,977.2	2,698.8	8,383.1	0.00	0.00	0.00
14,500.0	89.85	180.00	7,321.8	-8,077.2	2,698.8	8,480.4	0.00	0.00	0.00
14,600.0	89.85	180.00	7,322.1	-8,177.2	2,698.8	8,577.8	0.00	0.00	0.00
14,700.0	89.85	180.00	7,322.4	-8,277.2	2,698.8	8,675.1	0.00	0.00	0.00
14,800.0	89.85	180.00	7,322.6	-8,377.2	2,698.8	8,772.5	0.00	0.00	0.00
14,900.0	89.85	180.00	7,322.9	-8,477.2	2,698.8	8,869.8	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well Pikes 8-66-30-31C
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5292.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5292.0usft
<b>Site:</b>	SEC 19, T8N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Pikes 8-66-30-31C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,000.0	89.85	180.00	7,323.2	-8,577.2	2,698.8	8,967.2	0.00	0.00	0.00	
15,100.0	89.85	180.00	7,323.4	-8,677.2	2,698.8	9,064.5	0.00	0.00	0.00	
15,200.0	89.85	180.00	7,323.7	-8,777.2	2,698.9	9,161.9	0.00	0.00	0.00	
15,300.0	89.85	180.00	7,324.0	-8,877.2	2,698.9	9,259.2	0.00	0.00	0.00	
15,400.0	89.85	180.00	7,324.2	-8,977.2	2,698.9	9,356.6	0.00	0.00	0.00	
15,500.0	89.85	180.00	7,324.5	-9,077.2	2,698.9	9,453.9	0.00	0.00	0.00	
15,600.0	89.85	180.00	7,324.8	-9,177.2	2,698.9	9,551.3	0.00	0.00	0.00	
15,700.0	89.85	180.00	7,325.0	-9,277.2	2,698.9	9,648.6	0.00	0.00	0.00	
15,800.0	89.85	180.00	7,325.3	-9,377.2	2,698.9	9,746.0	0.00	0.00	0.00	
15,900.0	89.85	180.00	7,325.6	-9,477.2	2,698.9	9,843.3	0.00	0.00	0.00	
16,000.0	89.85	180.00	7,325.9	-9,577.2	2,698.9	9,940.7	0.00	0.00	0.00	
16,100.0	89.85	180.00	7,326.1	-9,677.2	2,698.9	10,038.0	0.00	0.00	0.00	
16,200.0	89.85	180.00	7,326.4	-9,777.2	2,698.9	10,135.4	0.00	0.00	0.00	
16,300.0	89.85	180.00	7,326.7	-9,877.2	2,698.9	10,232.7	0.00	0.00	0.00	
16,400.0	89.85	180.00	7,326.9	-9,977.2	2,698.9	10,330.1	0.00	0.00	0.00	
16,500.0	89.85	180.00	7,327.2	-10,077.2	2,698.9	10,427.4	0.00	0.00	0.00	
16,600.0	89.85	180.00	7,327.5	-10,177.2	2,698.9	10,524.8	0.00	0.00	0.00	
16,700.0	89.85	180.00	7,327.7	-10,277.2	2,698.9	10,622.1	0.00	0.00	0.00	
16,800.0	89.85	180.00	7,328.0	-10,377.2	2,698.9	10,719.5	0.00	0.00	0.00	
16,900.0	89.85	180.00	7,328.3	-10,477.2	2,698.9	10,816.8	0.00	0.00	0.00	
17,000.0	89.85	180.00	7,328.6	-10,577.2	2,699.0	10,914.2	0.00	0.00	0.00	
17,100.0	89.85	180.00	7,328.8	-10,677.2	2,699.0	11,011.5	0.00	0.00	0.00	
17,200.0	89.85	180.00	7,329.1	-10,777.2	2,699.0	11,108.9	0.00	0.00	0.00	
17,300.0	89.85	180.00	7,329.4	-10,877.2	2,699.0	11,206.2	0.00	0.00	0.00	
17,400.0	89.85	180.00	7,329.6	-10,977.2	2,699.0	11,303.5	0.00	0.00	0.00	
17,500.0	89.85	180.00	7,329.9	-11,077.2	2,699.0	11,400.9	0.00	0.00	0.00	
17,600.0	89.85	180.00	7,330.2	-11,177.2	2,699.0	11,498.2	0.00	0.00	0.00	
17,700.0	89.85	180.00	7,330.4	-11,277.2	2,699.0	11,595.6	0.00	0.00	0.00	
17,800.0	89.85	180.00	7,330.7	-11,377.2	2,699.0	11,692.9	0.00	0.00	0.00	
17,900.0	89.85	180.00	7,331.0	-11,477.2	2,699.0	11,790.3	0.00	0.00	0.00	
17,906.8	89.85	180.00	7,331.0	-11,484.0	2,699.0	11,796.9	0.00	0.00	0.00	
Total Depth - Pikes 8-66-30-31C										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
Pikes 8-66-30-31C	0.00	0.00	7,331.0	-11,484.0	2,699.0	1,466,779.55	3,189,574.25	40° 36' 45.733 N		104° 49' 1.843 W
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,500.0	Surface	9-5/8	9-5/8	
8,650.0	7,306.0	Intermediate	7	7	

## Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well Pikes 8-66-30-31C
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5292.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5292.0usft
<b>Site:</b>	SEC 19, T8N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Pikes 8-66-30-31C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,500.0	1,500.0	0.0	0.0	9-5/8"
1,594.9	1,594.9	0.0	0.0	Begin Nudge
7,719.7	6,733.0	-1,624.0	2,698.5	KOP - Start 10°/100' Build
8,650.0	7,306.0	-2,227.2	2,698.5	7" - 653' FNL & 1446' FEL
17,906.8	7,331.0	-11,484.0	2,699.0	Total Depth