

**Project:** Weld County, CO  
**Site:** SEC 33 T8N-R67W  
**Well:** SAN JUAN 8-67-33-4  
**Wellbore:** Original Wellbore  
**Design:** Plan 4

## Reference Details

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Latitude: 40° 37' 25.824 N  
 Longitude: 104° 54' 13.122 W  
 Grid Convergence: 0.39° West  
 Ground Elevation: 5177.0  
 KB Elevation: Well @ 5202.0usft



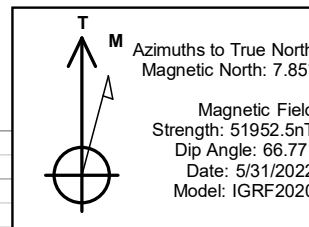
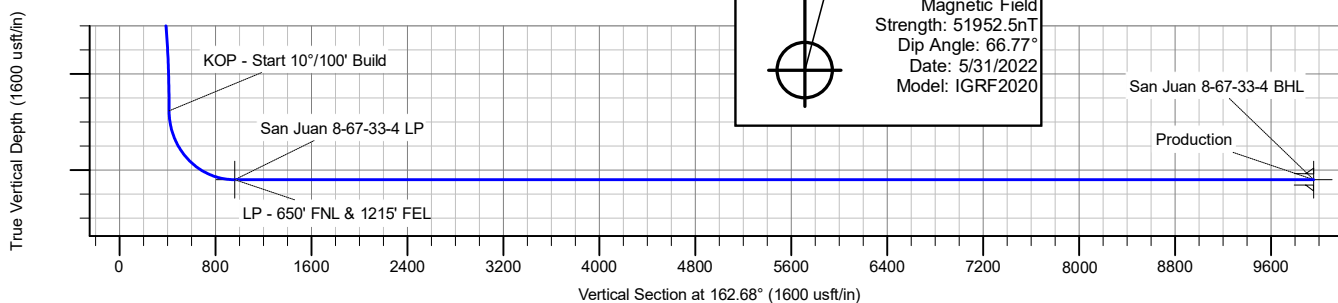
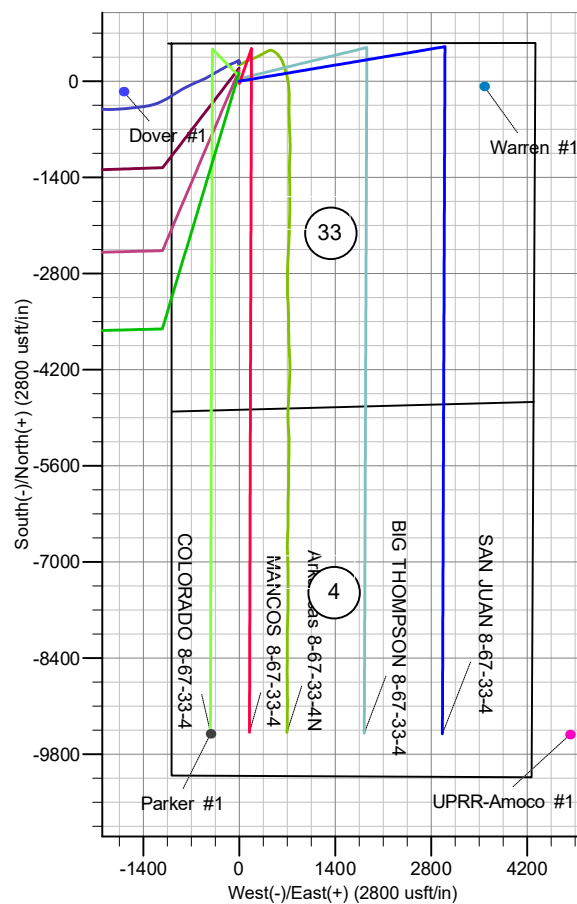
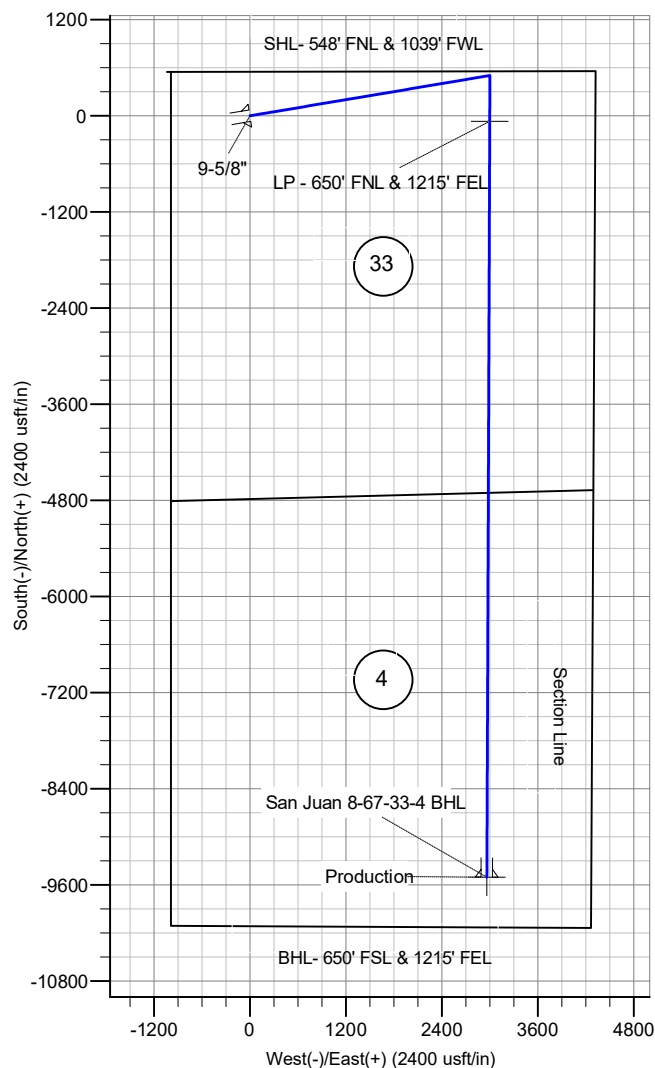
**RPM Consulting, Inc.**  
 1600 Broadway, Suite 1510  
 Denver, CO 80013  
 303-595-7625

## 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
1588.9	0.00	0.00	1588.9	0.0	0.0	0.00	0.00	0.0
2488.9	36.00	80.49	2430.9	45.2	269.8	4.00	80.49	37.2
6735.1	36.00	80.49	5866.1	457.7	2731.3	0.00	0.00	376.2
7635.1	0.00	0.00	6708.0	502.9	3001.1	4.00	180.00	413.3
8535.1	90.00	180.20	7281.0	-70.1	2999.1	10.00	180.20	959.7
8535.8	90.00	180.22	7281.0	-70.8	2999.1	2.00	90.94	960.4
17968.8	90.00	180.22	7281.0	-9503.7	2963.6	0.00	0.00	9955.1

## CASING DETAILS

TVD	MD	Name
1500.0	1500.0	Surface
7281.0	17968.8	Production



# **Enerplus Resources (USA) Corporation**

**Weld County, CO  
SEC 33 T8N-R67W  
SAN JUAN 8-67-33-4**

**Original Wellbore**

**Plan: Plan 4**

## **Standard Planning Report**

**12 May, 2022**

## Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well SAN JUAN 8-67-33-4
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5202.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

<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 33 T8N-R67W			
Site Position:		Northing:	1,470,928.66 usft	Latitude:	40° 37' 28.445 N
From:	Lat/Long	Easting:	3,165,536.54 usft	Longitude:	104° 54' 13.162 W
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	

Well		SAN JUAN 8-67-33-4				
Well Position	+N/-S	0.0 usft	Northing:	1,470,663.46 usft	Latitude:	40° 37' 25.824 N
	+E/-W	0.0 usft	Easting:	3,165,541.38 usft	Longitude:	104° 54' 13.122 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	5,177.0 usft
Grid Convergence:		0.39 °				

<b>Wellbore</b>	Original Wellbore				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	5/31/2022	7.85	66.77	51,952.53281577

<b>Design</b>	Plan 4				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PLAN	<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	162.68	

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/12/2022			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.0	17,968.4	Plan 4 (Original Wellbore)	MWD	
			OWSG MWD - Standard		

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<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
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	
1,588.9	0.00	0.00	1,588.9	0.0	0.0	0.00	0.00	0.00	0.00	
2,488.9	36.00	80.49	2,430.9	45.2	269.8	4.00	4.00	0.00	80.49	
6,735.1	36.00	80.49	5,866.1	457.7	2,731.3	0.00	0.00	0.00	0.00	
7,635.1	0.00	0.00	6,708.0	502.9	3,001.1	4.00	-4.00	0.00	180.00	
8,535.1	90.00	180.20	7,281.0	-70.1	2,999.1	10.00	10.00	0.00	180.20	
8,535.8	90.00	180.22	7,281.0	-70.8	2,999.1	2.00	-0.03	2.00	90.94	
17,968.8	90.00	180.22	7,281.0	-9,503.7	2,963.6	0.00	0.00	0.00	0.00	San Juan 8-67-33-4 E

# Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well SAN JUAN 8-67-33-4
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5202.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

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
1,357.0	0.00	0.00	1,357.0	0.0	0.0	0.0	0.00	0.00	0.00
Pierre									
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									
1,588.9	0.00	0.00	1,588.9	0.0	0.0	0.0	0.00	0.00	0.00
Begin 4° Nudge									
1,600.0	0.44	80.49	1,600.0	0.0	0.0	0.0	3.99	3.99	0.00
1,700.0	4.44	80.49	1,699.9	0.7	4.2	0.6	4.00	4.00	0.00
1,800.0	8.44	80.49	1,799.2	2.6	15.3	2.1	4.00	4.00	0.00
1,900.0	12.44	80.49	1,897.6	5.6	33.2	4.6	4.00	4.00	0.00
2,000.0	16.44	80.49	1,994.4	9.7	57.8	8.0	4.00	4.00	0.00
2,100.0	20.44	80.49	2,089.2	14.9	89.0	12.3	4.00	4.00	0.00
2,200.0	24.44	80.49	2,181.6	21.2	126.6	17.4	4.00	4.00	0.00
2,300.0	28.44	80.49	2,271.2	28.6	170.5	23.5	4.00	4.00	0.00
2,400.0	32.44	80.49	2,357.3	36.9	220.5	30.4	4.00	4.00	0.00
2,488.9	36.00	80.49	2,430.8	45.2	269.8	37.2	4.00	4.00	0.00
Begin 36° Tangent									
2,500.0	36.00	80.49	2,439.8	46.3	276.2	38.0	0.01	0.01	0.00
2,600.0	36.00	80.49	2,520.7	56.0	334.2	46.0	0.00	0.00	0.00
2,700.0	36.00	80.49	2,601.6	65.7	392.2	54.0	0.00	0.00	0.00
2,800.0	36.00	80.49	2,682.5	75.4	450.1	62.0	0.00	0.00	0.00
2,900.0	36.00	80.49	2,763.4	85.1	508.1	70.0	0.00	0.00	0.00
3,000.0	36.00	80.49	2,844.3	94.9	566.1	78.0	0.00	0.00	0.00
3,100.0	36.00	80.49	2,925.2	104.6	624.0	85.9	0.00	0.00	0.00
3,200.0	36.00	80.49	3,006.1	114.3	682.0	93.9	0.00	0.00	0.00
3,300.0	36.00	80.49	3,087.0	124.0	740.0	101.9	0.00	0.00	0.00
3,400.0	36.00	80.49	3,167.9	133.7	798.0	109.9	0.00	0.00	0.00
3,500.0	36.00	80.49	3,248.8	143.4	855.9	117.9	0.00	0.00	0.00
3,600.0	36.00	80.49	3,329.7	153.1	913.9	125.9	0.00	0.00	0.00
3,700.0	36.00	80.49	3,410.6	162.9	971.9	133.8	0.00	0.00	0.00
3,754.8	36.00	80.49	3,455.0	168.2	1,003.6	138.2	0.00	0.00	0.00
Richards									
3,800.0	36.00	80.49	3,491.5	172.6	1,029.8	141.8	0.00	0.00	0.00
3,900.0	36.00	80.49	3,572.4	182.3	1,087.8	149.8	0.00	0.00	0.00
4,000.0	36.00	80.49	3,653.3	192.0	1,145.8	157.8	0.00	0.00	0.00
4,100.0	36.00	80.49	3,734.3	201.7	1,203.7	165.8	0.00	0.00	0.00
4,200.0	36.00	80.49	3,815.2	211.4	1,261.7	173.8	0.00	0.00	0.00
4,300.0	36.00	80.49	3,896.1	221.1	1,319.7	181.8	0.00	0.00	0.00
4,400.0	36.00	80.49	3,977.0	230.9	1,377.7	189.7	0.00	0.00	0.00

# Planning Report

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<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5202.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

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)
4,500.0	36.00	80.49	4,057.9	240.6	1,435.6	197.7	0.00	0.00	0.00
4,548.4	36.00	80.49	4,097.0	245.3	1,463.7	201.6	0.00	0.00	0.00
Terry									
4,600.0	36.00	80.49	4,138.8	250.3	1,493.6	205.7	0.00	0.00	0.00
4,700.0	36.00	80.49	4,219.7	260.0	1,551.6	213.7	0.00	0.00	0.00
4,800.0	36.00	80.49	4,300.6	269.7	1,609.5	221.7	0.00	0.00	0.00
4,900.0	36.00	80.49	4,381.5	279.4	1,667.5	229.7	0.00	0.00	0.00
5,000.0	36.00	80.49	4,462.4	289.1	1,725.5	237.6	0.00	0.00	0.00
5,100.0	36.00	80.49	4,543.3	298.9	1,783.5	245.6	0.00	0.00	0.00
5,200.0	36.00	80.49	4,624.2	308.6	1,841.4	253.6	0.00	0.00	0.00
5,227.0	36.00	80.49	4,646.0	311.2	1,857.1	255.8	0.00	0.00	0.00
Hygeine									
5,300.0	36.00	80.49	4,705.1	318.3	1,899.4	261.6	0.00	0.00	0.00
5,400.0	36.00	80.49	4,786.0	328.0	1,957.4	269.6	0.00	0.00	0.00
5,500.0	36.00	80.49	4,866.9	337.7	2,015.3	277.6	0.00	0.00	0.00
5,600.0	36.00	80.49	4,947.8	347.4	2,073.3	285.5	0.00	0.00	0.00
5,700.0	36.00	80.49	5,028.7	357.1	2,131.3	293.5	0.00	0.00	0.00
5,800.0	36.00	80.49	5,109.6	366.9	2,189.2	301.5	0.00	0.00	0.00
5,900.0	36.00	80.49	5,190.5	376.6	2,247.2	309.5	0.00	0.00	0.00
6,000.0	36.00	80.49	5,271.4	386.3	2,305.2	317.5	0.00	0.00	0.00
6,100.0	36.00	80.49	5,352.3	396.0	2,363.2	325.5	0.00	0.00	0.00
6,166.4	36.00	80.49	5,406.0	402.4	2,401.6	330.8	0.00	0.00	0.00
Lower Pierre zero									
6,200.0	36.00	80.49	5,433.2	405.7	2,421.1	333.4	0.00	0.00	0.00
6,300.0	36.00	80.49	5,514.1	415.4	2,479.1	341.4	0.00	0.00	0.00
6,400.0	36.00	80.49	5,595.0	425.1	2,537.1	349.4	0.00	0.00	0.00
6,500.0	36.00	80.49	5,675.9	434.9	2,595.0	357.4	0.00	0.00	0.00
6,600.0	36.00	80.49	5,756.8	444.6	2,653.0	365.4	0.00	0.00	0.00
6,700.0	36.00	80.49	5,837.7	454.3	2,711.0	373.4	0.00	0.00	0.00
6,735.1	36.00	80.49	5,866.1	457.7	2,731.3	376.2	0.00	0.00	0.00
Begin Nudge Back to Vertical									
6,758.3	35.07	80.49	5,885.0	459.9	2,744.6	378.0	4.01	-4.01	0.00
Lower Pierre 1									
6,800.0	33.40	80.49	5,919.4	463.8	2,767.8	381.2	4.00	-4.00	0.00
6,900.0	29.40	80.49	6,004.8	472.4	2,819.1	388.3	4.00	-4.00	0.00
7,000.0	25.40	80.49	6,093.5	480.0	2,864.5	394.5	4.00	-4.00	0.00
7,100.0	21.40	80.49	6,185.3	486.6	2,903.7	399.9	4.00	-4.00	0.00
7,200.0	17.40	80.49	6,279.6	492.1	2,936.4	404.4	4.00	-4.00	0.00
7,300.0	13.40	80.49	6,376.0	496.5	2,962.6	408.0	4.00	-4.00	0.00
7,400.0	9.40	80.49	6,474.0	499.7	2,982.1	410.7	4.00	-4.00	0.00
7,425.3	8.39	80.49	6,499.0	500.4	2,986.0	411.2	4.00	-4.00	0.00
Lower Pierre 2									
7,500.0	5.40	80.49	6,573.1	501.8	2,994.8	412.5	4.00	-4.00	0.00
7,600.0	1.40	80.49	6,672.9	502.8	3,000.7	413.3	4.00	-4.00	0.00
7,635.1	0.00	0.00	6,708.0	502.9	3,001.1	413.3	4.00	-4.00	0.00
KOP - Start 10°/100' Build									
7,700.0	6.49	180.20	6,772.8	499.2	3,001.1	416.8	10.01	10.01	0.00
7,758.0	12.29	180.20	6,830.0	489.8	3,001.1	425.8	10.00	10.00	0.00
Lower Pierre 3									
7,800.0	16.49	180.20	6,870.7	479.3	3,001.0	435.8	10.00	10.00	0.00
7,867.4	23.23	180.20	6,934.0	456.4	3,000.9	457.6	10.00	10.00	0.00
Sharon Springs									
7,900.0	26.49	180.20	6,963.6	442.7	3,000.9	470.7	10.00	10.00	0.00

# Planning Report

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<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5202.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

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)
7,915.1	28.00	180.20	6,977.0	435.8	3,000.9	477.3	10.00	10.00	0.00
Nio A Chalk									
7,934.5	29.94	180.20	6,994.0	426.4	3,000.8	486.3	10.00	10.00	0.00
Nio A Marl									
7,973.4	33.83	180.20	7,027.0	405.9	3,000.8	505.8	10.00	10.00	0.00
Nio B upper									
8,000.0	36.49	180.20	7,048.8	390.6	3,000.7	520.5	10.00	10.00	0.00
8,033.4	39.83	180.20	7,075.0	369.9	3,000.6	540.1	10.00	10.00	0.00
Nio B chalk									
8,100.0	46.49	180.20	7,123.6	324.4	3,000.5	583.6	10.00	10.00	0.00
8,112.4	47.73	180.20	7,132.0	315.3	3,000.4	592.2	10.00	10.00	0.00
Nio B marl									
8,130.6	49.55	180.20	7,144.0	301.7	3,000.4	605.2	10.00	10.00	0.00
Nio C Chalk									
8,200.0	56.49	180.20	7,185.7	246.2	3,000.2	658.1	10.00	10.00	0.00
8,211.5	57.64	180.20	7,192.0	236.6	3,000.2	667.3	10.00	10.00	0.00
Nio C Marl									
8,266.1	63.11	180.20	7,219.0	189.1	3,000.0	712.6	10.00	10.00	0.00
Nio D chalk									
8,300.0	66.49	180.20	7,233.4	158.5	2,999.9	741.8	10.00	10.00	0.00
8,375.9	74.09	180.20	7,259.0	87.0	2,999.6	809.9	10.00	10.00	0.00
Fort Hays									
8,400.0	76.49	180.20	7,265.1	63.8	2,999.6	832.1	10.00	10.00	0.00
8,459.6	82.46	180.20	7,276.0	5.2	2,999.4	888.0	10.00	10.00	0.00
Codell									
8,500.0	86.49	180.20	7,279.9	-35.0	2,999.2	926.3	10.00	10.00	0.00
8,535.1	90.00	180.20	7,281.0	-70.1	2,999.1	959.7	9.99	9.99	0.00
LP - 650' FNL & 1215' FEL									
8,535.8	90.00	180.22	7,281.0	-70.8	2,999.1	960.4	2.11	-0.03	2.11
8,600.0	90.00	180.22	7,281.0	-135.0	2,998.9	1,021.6	0.00	0.00	0.00
8,700.0	90.00	180.22	7,281.0	-235.0	2,998.5	1,117.0	0.00	0.00	0.00
8,800.0	90.00	180.22	7,281.0	-335.0	2,998.1	1,212.3	0.00	0.00	0.00
8,900.0	90.00	180.22	7,281.0	-435.0	2,997.7	1,307.7	0.00	0.00	0.00
9,000.0	90.00	180.22	7,281.0	-535.0	2,997.4	1,403.0	0.00	0.00	0.00
9,100.0	90.00	180.22	7,281.0	-635.0	2,997.0	1,498.4	0.00	0.00	0.00
9,200.0	90.00	180.22	7,281.0	-735.0	2,996.6	1,593.7	0.00	0.00	0.00
9,300.0	90.00	180.22	7,281.0	-835.0	2,996.2	1,689.1	0.00	0.00	0.00
9,400.0	90.00	180.22	7,281.0	-935.0	2,995.8	1,784.4	0.00	0.00	0.00
9,500.0	90.00	180.22	7,281.0	-1,035.0	2,995.5	1,879.8	0.00	0.00	0.00
9,600.0	90.00	180.22	7,281.0	-1,135.0	2,995.1	1,975.2	0.00	0.00	0.00
9,700.0	90.00	180.22	7,281.0	-1,235.0	2,994.7	2,070.5	0.00	0.00	0.00
9,800.0	90.00	180.22	7,281.0	-1,335.0	2,994.3	2,165.9	0.00	0.00	0.00
9,900.0	90.00	180.22	7,281.0	-1,435.0	2,994.0	2,261.2	0.00	0.00	0.00
10,000.0	90.00	180.22	7,281.0	-1,535.0	2,993.6	2,356.6	0.00	0.00	0.00
10,100.0	90.00	180.22	7,281.0	-1,635.0	2,993.2	2,451.9	0.00	0.00	0.00
10,200.0	90.00	180.22	7,281.0	-1,735.0	2,992.8	2,547.3	0.00	0.00	0.00
10,300.0	90.00	180.22	7,281.0	-1,835.0	2,992.5	2,642.6	0.00	0.00	0.00
10,400.0	90.00	180.22	7,281.0	-1,935.0	2,992.1	2,738.0	0.00	0.00	0.00
10,500.0	90.00	180.22	7,281.0	-2,035.0	2,991.7	2,833.3	0.00	0.00	0.00
10,600.0	90.00	180.22	7,281.0	-2,135.0	2,991.3	2,928.7	0.00	0.00	0.00
10,700.0	90.00	180.22	7,281.0	-2,235.0	2,991.0	3,024.0	0.00	0.00	0.00
10,800.0	90.00	180.22	7,281.0	-2,335.0	2,990.6	3,119.4	0.00	0.00	0.00
10,900.0	90.00	180.22	7,281.0	-2,435.0	2,990.2	3,214.7	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well SAN JUAN 8-67-33-4
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5202.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

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)
11,000.0	90.00	180.22	7,281.0	-2,535.0	2,989.8	3,310.1	0.00	0.00	0.00
11,100.0	90.00	180.22	7,281.0	-2,635.0	2,989.4	3,405.5	0.00	0.00	0.00
11,200.0	90.00	180.22	7,281.0	-2,735.0	2,989.1	3,500.8	0.00	0.00	0.00
11,300.0	90.00	180.22	7,281.0	-2,835.0	2,988.7	3,596.2	0.00	0.00	0.00
11,400.0	90.00	180.22	7,281.0	-2,935.0	2,988.3	3,691.5	0.00	0.00	0.00
11,500.0	90.00	180.22	7,281.0	-3,035.0	2,987.9	3,786.9	0.00	0.00	0.00
11,600.0	90.00	180.22	7,281.0	-3,135.0	2,987.6	3,882.2	0.00	0.00	0.00
11,700.0	90.00	180.22	7,281.0	-3,235.0	2,987.2	3,977.6	0.00	0.00	0.00
11,800.0	90.00	180.22	7,281.0	-3,335.0	2,986.8	4,072.9	0.00	0.00	0.00
11,900.0	90.00	180.22	7,281.0	-3,435.0	2,986.4	4,168.3	0.00	0.00	0.00
12,000.0	90.00	180.22	7,281.0	-3,535.0	2,986.1	4,263.6	0.00	0.00	0.00
12,100.0	90.00	180.22	7,281.0	-3,635.0	2,985.7	4,359.0	0.00	0.00	0.00
12,200.0	90.00	180.22	7,281.0	-3,735.0	2,985.3	4,454.3	0.00	0.00	0.00
12,300.0	90.00	180.22	7,281.0	-3,835.0	2,984.9	4,549.7	0.00	0.00	0.00
12,400.0	90.00	180.22	7,281.0	-3,935.0	2,984.6	4,645.0	0.00	0.00	0.00
12,500.0	90.00	180.22	7,281.0	-4,035.0	2,984.2	4,740.4	0.00	0.00	0.00
12,600.0	90.00	180.22	7,281.0	-4,135.0	2,983.8	4,835.8	0.00	0.00	0.00
12,700.0	90.00	180.22	7,281.0	-4,235.0	2,983.4	4,931.1	0.00	0.00	0.00
12,800.0	90.00	180.22	7,281.0	-4,335.0	2,983.0	5,026.5	0.00	0.00	0.00
12,900.0	90.00	180.22	7,281.0	-4,435.0	2,982.7	5,121.8	0.00	0.00	0.00
13,000.0	90.00	180.22	7,281.0	-4,535.0	2,982.3	5,217.2	0.00	0.00	0.00
13,100.0	90.00	180.22	7,281.0	-4,635.0	2,981.9	5,312.5	0.00	0.00	0.00
13,200.0	90.00	180.22	7,281.0	-4,735.0	2,981.5	5,407.9	0.00	0.00	0.00
13,300.0	90.00	180.22	7,281.0	-4,835.0	2,981.2	5,503.2	0.00	0.00	0.00
13,400.0	90.00	180.22	7,281.0	-4,935.0	2,980.8	5,598.6	0.00	0.00	0.00
13,500.0	90.00	180.22	7,281.0	-5,035.0	2,980.4	5,693.9	0.00	0.00	0.00
13,600.0	90.00	180.22	7,281.0	-5,135.0	2,980.0	5,789.3	0.00	0.00	0.00
13,700.0	90.00	180.22	7,281.0	-5,235.0	2,979.7	5,884.6	0.00	0.00	0.00
13,800.0	90.00	180.22	7,281.0	-5,335.0	2,979.3	5,980.0	0.00	0.00	0.00
13,900.0	90.00	180.22	7,281.0	-5,435.0	2,978.9	6,075.3	0.00	0.00	0.00
14,000.0	90.00	180.22	7,281.0	-5,535.0	2,978.5	6,170.7	0.00	0.00	0.00
14,100.0	90.00	180.22	7,281.0	-5,635.0	2,978.2	6,266.1	0.00	0.00	0.00
14,200.0	90.00	180.22	7,281.0	-5,735.0	2,977.8	6,361.4	0.00	0.00	0.00
14,300.0	90.00	180.22	7,281.0	-5,835.0	2,977.4	6,456.8	0.00	0.00	0.00
14,400.0	90.00	180.22	7,281.0	-5,935.0	2,977.0	6,552.1	0.00	0.00	0.00
14,500.0	90.00	180.22	7,281.0	-6,035.0	2,976.6	6,647.5	0.00	0.00	0.00
14,600.0	90.00	180.22	7,281.0	-6,135.0	2,976.3	6,742.8	0.00	0.00	0.00
14,700.0	90.00	180.22	7,281.0	-6,235.0	2,975.9	6,838.2	0.00	0.00	0.00
14,800.0	90.00	180.22	7,281.0	-6,335.0	2,975.5	6,933.5	0.00	0.00	0.00
14,900.0	90.00	180.22	7,281.0	-6,434.9	2,975.1	7,028.9	0.00	0.00	0.00
15,000.0	90.00	180.22	7,281.0	-6,534.9	2,974.8	7,124.2	0.00	0.00	0.00
15,100.0	90.00	180.22	7,281.0	-6,634.9	2,974.4	7,219.6	0.00	0.00	0.00
15,200.0	90.00	180.22	7,281.0	-6,734.9	2,974.0	7,314.9	0.00	0.00	0.00
15,300.0	90.00	180.22	7,281.0	-6,834.9	2,973.6	7,410.3	0.00	0.00	0.00
15,400.0	90.00	180.22	7,281.0	-6,934.9	2,973.3	7,505.6	0.00	0.00	0.00
15,500.0	90.00	180.22	7,281.0	-7,034.9	2,972.9	7,601.0	0.00	0.00	0.00
15,600.0	90.00	180.22	7,281.0	-7,134.9	2,972.5	7,696.4	0.00	0.00	0.00
15,700.0	90.00	180.22	7,281.0	-7,234.9	2,972.1	7,791.7	0.00	0.00	0.00
15,800.0	90.00	180.22	7,281.0	-7,334.9	2,971.8	7,887.1	0.00	0.00	0.00
15,900.0	90.00	180.22	7,281.0	-7,434.9	2,971.4	7,982.4	0.00	0.00	0.00
16,000.0	90.00	180.22	7,281.0	-7,534.9	2,971.0	8,077.8	0.00	0.00	0.00
16,100.0	90.00	180.22	7,281.0	-7,634.9	2,970.6	8,173.1	0.00	0.00	0.00
16,200.0	90.00	180.22	7,281.0	-7,734.9	2,970.2	8,268.5	0.00	0.00	0.00
16,300.0	90.00	180.22	7,281.0	-7,834.9	2,969.9	8,363.8	0.00	0.00	0.00



## Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well SAN JUAN 8-67-33-4
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5202.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

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)	
16,400.0	90.00	180.22	7,281.0	-7,934.9	2,969.5	8,459.2	0.00	0.00	0.00	
16,500.0	90.00	180.22	7,281.0	-8,034.9	2,969.1	8,554.5	0.00	0.00	0.00	
16,600.0	90.00	180.22	7,281.0	-8,134.9	2,968.7	8,649.9	0.00	0.00	0.00	
16,700.0	90.00	180.22	7,281.0	-8,234.9	2,968.4	8,745.2	0.00	0.00	0.00	
16,800.0	90.00	180.22	7,281.0	-8,334.9	2,968.0	8,840.6	0.00	0.00	0.00	
16,900.0	90.00	180.22	7,281.0	-8,434.9	2,967.6	8,935.9	0.00	0.00	0.00	
17,000.0	90.00	180.22	7,281.0	-8,534.9	2,967.2	9,031.3	0.00	0.00	0.00	
17,100.0	90.00	180.22	7,281.0	-8,634.9	2,966.9	9,126.7	0.00	0.00	0.00	
17,200.0	90.00	180.22	7,281.0	-8,734.9	2,966.5	9,222.0	0.00	0.00	0.00	
17,300.0	90.00	180.22	7,281.0	-8,834.9	2,966.1	9,317.4	0.00	0.00	0.00	
17,400.0	90.00	180.22	7,281.0	-8,934.9	2,965.7	9,412.7	0.00	0.00	0.00	
17,500.0	90.00	180.22	7,281.0	-9,034.9	2,965.4	9,508.1	0.00	0.00	0.00	
17,600.0	90.00	180.22	7,281.0	-9,134.9	2,965.0	9,603.4	0.00	0.00	0.00	
17,700.0	90.00	180.22	7,281.0	-9,234.9	2,964.6	9,698.8	0.00	0.00	0.00	
17,800.0	90.00	180.22	7,281.0	-9,334.9	2,964.2	9,794.1	0.00	0.00	0.00	
17,900.0	90.00	180.22	7,281.0	-9,434.9	2,963.9	9,889.5	0.00	0.00	0.00	
17,968.8	90.00	180.22	7,281.0	-9,503.7	2,963.6	9,955.1	0.00	0.00	0.00	
5-1/2" Production - BHL - Production										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
San Juan 8-67-33-4 LP	0.00	0.00	7,281.0	-70.1	2,999.1	1,470,613.51	3,168,540.88	40° 37' 25.129 N	104° 53' 34.228 W	
- plan hits target center										
- Point										
San Juan 8-67-33-4 BHL	0.00	0.00	7,281.0	-9,503.7	2,963.6	1,461,179.87	3,168,568.82	40° 35' 51.911 N	104° 53' 34.703 W	
- 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	13-1/2	
17,968.8	7,281.0	Production	5-1/2	8-1/2	

## Planning Report

<b>Database:</b>	EDM Server Database	<b>Local Co-ordinate Reference:</b>	Well SAN JUAN 8-67-33-4
<b>Company:</b>	Enerplus Resources (USA) Corporation	<b>TVD Reference:</b>	Well @ 5202.0usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	Well @ 5202.0usft
<b>Site:</b>	SEC 33 T8N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	SAN JUAN 8-67-33-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	Plan 4		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,357.0	1,357.0	Pierre				
3,754.8	3,455.0	Richards				
4,548.4	4,097.0	Terry				
5,227.0	4,646.0	Hygeine				
6,166.4	5,406.0	Lower Pierre zero				
6,758.3	5,885.0	Lower Pierre 1				
7,425.3	6,499.0	Lower Pierre 2				
7,758.0	6,830.0	Lower Pierre 3				
7,867.4	6,934.0	Sharon Springs				
7,915.1	6,977.0	Nio A Chalk				
7,934.5	6,994.0	Nio A Marl				
7,973.4	7,027.0	Nio B upper				
8,033.4	7,075.0	Nio B chalk				
8,112.4	7,132.0	Nio B marl				
8,130.6	7,144.0	Nio C Chalk				
8,211.5	7,192.0	Nio C Marl				
8,266.1	7,219.0	Nio D chalk				
8,375.9	7,259.0	Fort Hays				
8,459.6	7,276.0	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,500.0	1,500.0	0.0	0.0	9-5/8"	
1,588.9	1,588.9	0.0	0.0	Begin 4° Nudge	
2,488.9	2,430.8	45.2	269.8	Begin 36° Tangent	
6,735.1	5,866.1	457.7	2,731.3	Begin Nudge Back to Vertical	
7,635.1	6,708.0	502.9	3,001.1	KOP - Start 10°/100' Build	
8,535.1	7,281.0	-70.1	2,999.1	LP - 650' FNL & 1215' FEL	
17,968.8	7,281.0	-9,503.7	2,963.6	5-1/2" Production - BHL	