



# **Fifth Creek Energy**

**State Line**

**Critter Creek 21-4 Pad**

**Critter Creek 243-2109H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**06 September, 2017**

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 243-2109H
<b>Company:</b>	Fifth Creek Energy	<b>TVD Reference:</b>	KB @ 5274.0usft (Original Well Elev)
<b>Project:</b>	State Line	<b>MD Reference:</b>	KB @ 5274.0usft (Original Well Elev)
<b>Site:</b>	Critter Creek 21-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 243-2109H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	State Line		
<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		Critter Creek 21-4 Pad			
Site Position: From:	Lat/Long	Northing:	1,577,656.13 usft	Latitude:	40° 54' 51.329 N
		Easting:	3,292,052.40 usft	Longitude:	104° 26' 36.010 W
		Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "

Well	Critter Creek 243-2109H					
Well Position	+N/-S	0.0 usft	Northing:	1,577,655.23 usft	Latitude:	40° 54' 51.329 N
	+E/-W	-74.6 usft	Easting:	3,291,977.78 usft	Longitude:	104° 26' 36.982 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,259.0 usft

<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>
	IGRF2015	9/6/2017	8.06	67.31	52,661.39239568

<b>Design</b>	Design #1			
<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	356.22

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/6/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	17,811.3	Design #1 (Wellbore #1)	

<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	
1,969.9	9.40	271.84	1,967.8	1.2	-38.4	2.00	2.00	0.00	271.84	
5,977.1	9.40	271.84	5,921.2	22.2	-692.5	0.00	0.00	0.00	0.00	
6,447.0	0.00	0.18	6,389.0	23.4	-730.9	2.00	-2.00	0.00	180.00	
6,947.0	0.00	0.18	6,889.0	23.4	-730.9	0.00	0.00	0.00	0.00	
7,850.0	90.30	0.18	7,462.0	599.4	-729.1	10.00	10.00	0.00	0.00	CC 243-2109H LP
17,811.3	90.30	0.18	7,410.0	10,560.5	-698.2	0.00	0.00	0.00	0.00	CC 243-2109H PBH

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<b>Company:</b>	Fifth Creek Energy	<b>TVD Reference:</b>	KB @ 5274.0usft (Original Well Elev)
<b>Project:</b>	State Line	<b>MD Reference:</b>	KB @ 5274.0usft (Original Well Elev)
<b>Site:</b>	Critter Creek 21-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 243-2109H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #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
1,600.0	2.00	271.84	1,600.0	0.1	-1.7	0.2	2.00	2.00	0.00
1,700.0	4.00	271.84	1,699.8	0.2	-7.0	0.7	2.00	2.00	0.00
1,800.0	6.00	271.84	1,799.5	0.5	-15.7	1.5	2.00	2.00	0.00
1,900.0	8.00	271.84	1,898.7	0.9	-27.9	2.7	2.00	2.00	0.00
1,969.9	9.40	271.84	1,967.8	1.2	-38.4	3.8	2.00	2.00	0.00
2,000.0	9.40	271.84	1,997.5	1.4	-43.3	4.2	0.00	0.00	0.00
2,100.0	9.40	271.84	2,096.1	1.9	-59.7	5.8	0.00	0.00	0.00
2,200.0	9.40	271.84	2,194.8	2.4	-76.0	7.4	0.00	0.00	0.00
2,300.0	9.40	271.84	2,293.5	3.0	-92.3	9.0	0.00	0.00	0.00
2,400.0	9.40	271.84	2,392.1	3.5	-108.6	10.6	0.00	0.00	0.00
2,500.0	9.40	271.84	2,490.8	4.0	-125.0	12.2	0.00	0.00	0.00
2,600.0	9.40	271.84	2,589.4	4.5	-141.3	13.8	0.00	0.00	0.00
2,700.0	9.40	271.84	2,688.1	5.1	-157.6	15.4	0.00	0.00	0.00
2,800.0	9.40	271.84	2,786.8	5.6	-173.9	17.0	0.00	0.00	0.00
2,900.0	9.40	271.84	2,885.4	6.1	-190.2	18.6	0.00	0.00	0.00
3,000.0	9.40	271.84	2,984.1	6.6	-206.6	20.2	0.00	0.00	0.00
3,100.0	9.40	271.84	3,082.7	7.1	-222.9	21.8	0.00	0.00	0.00
3,200.0	9.40	271.84	3,181.4	7.7	-239.2	23.4	0.00	0.00	0.00
3,300.0	9.40	271.84	3,280.0	8.2	-255.5	25.0	0.00	0.00	0.00
3,400.0	9.40	271.84	3,378.7	8.7	-271.8	26.6	0.00	0.00	0.00
3,500.0	9.40	271.84	3,477.4	9.2	-288.2	28.2	0.00	0.00	0.00
3,600.0	9.40	271.84	3,576.0	9.8	-304.5	29.8	0.00	0.00	0.00
3,700.0	9.40	271.84	3,674.7	10.3	-320.8	31.4	0.00	0.00	0.00
3,800.0	9.40	271.84	3,773.3	10.8	-337.1	33.0	0.00	0.00	0.00
3,900.0	9.40	271.84	3,872.0	11.3	-353.5	34.6	0.00	0.00	0.00
4,000.0	9.40	271.84	3,970.6	11.9	-369.8	36.2	0.00	0.00	0.00
4,100.0	9.40	271.84	4,069.3	12.4	-386.1	37.8	0.00	0.00	0.00
4,200.0	9.40	271.84	4,168.0	12.9	-402.4	39.4	0.00	0.00	0.00
4,300.0	9.40	271.84	4,266.6	13.4	-418.7	41.0	0.00	0.00	0.00
4,400.0	9.40	271.84	4,365.3	14.0	-435.1	42.6	0.00	0.00	0.00
4,500.0	9.40	271.84	4,463.9	14.5	-451.4	44.2	0.00	0.00	0.00
4,600.0	9.40	271.84	4,562.6	15.0	-467.7	45.8	0.00	0.00	0.00
4,700.0	9.40	271.84	4,661.2	15.5	-484.0	47.4	0.00	0.00	0.00
4,800.0	9.40	271.84	4,759.9	16.0	-500.3	49.0	0.00	0.00	0.00
4,900.0	9.40	271.84	4,858.6	16.6	-516.7	50.6	0.00	0.00	0.00
5,000.0	9.40	271.84	4,957.2	17.1	-533.0	52.2	0.00	0.00	0.00
5,100.0	9.40	271.84	5,055.9	17.6	-549.3	53.8	0.00	0.00	0.00
5,200.0	9.40	271.84	5,154.5	18.1	-565.6	55.4	0.00	0.00	0.00

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<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #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)
5,300.0	9.40	271.84	5,253.2	18.7	-582.0	57.0	0.00	0.00	0.00
5,400.0	9.40	271.84	5,351.9	19.2	-598.3	58.6	0.00	0.00	0.00
5,500.0	9.40	271.84	5,450.5	19.7	-614.6	60.2	0.00	0.00	0.00
5,600.0	9.40	271.84	5,549.2	20.2	-630.9	61.8	0.00	0.00	0.00
5,700.0	9.40	271.84	5,647.8	20.8	-647.2	63.4	0.00	0.00	0.00
5,800.0	9.40	271.84	5,746.5	21.3	-663.6	65.0	0.00	0.00	0.00
5,900.0	9.40	271.84	5,845.1	21.8	-679.9	66.6	0.00	0.00	0.00
5,977.1	9.40	271.84	5,921.2	22.2	-692.5	67.8	0.00	0.00	0.00
6,000.0	8.94	271.84	5,943.8	22.3	-696.1	68.2	2.00	-2.00	0.00
6,100.0	6.94	271.84	6,042.8	22.8	-709.9	69.5	2.00	-2.00	0.00
6,200.0	4.94	271.84	6,142.3	23.1	-720.3	70.6	2.00	-2.00	0.00
6,300.0	2.94	271.84	6,242.1	23.3	-727.1	71.2	2.00	-2.00	0.00
6,400.0	0.94	271.84	6,342.0	23.4	-730.5	71.6	2.00	-2.00	0.00
6,447.0	0.00	0.18	6,389.0	23.4	-730.9	71.6	2.00	-2.00	0.00
6,500.0	0.00	0.00	6,442.0	23.4	-730.9	71.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,542.0	23.4	-730.9	71.6	0.00	0.00	0.00
6,700.0	0.00	0.00	6,642.0	23.4	-730.9	71.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,742.0	23.4	-730.9	71.6	0.00	0.00	0.00
6,900.0	0.00	0.00	6,842.0	23.4	-730.9	71.6	0.00	0.00	0.00
6,947.0	0.00	0.18	6,889.0	23.4	-730.9	71.6	0.00	0.00	0.00
7,000.0	5.30	0.18	6,941.9	25.9	-730.9	74.0	10.00	10.00	0.00
7,100.0	15.30	0.18	7,040.2	43.7	-730.8	91.8	10.00	10.00	0.00
7,200.0	25.30	0.18	7,133.9	78.4	-730.7	126.4	10.00	10.00	0.00
7,300.0	35.30	0.18	7,220.1	128.8	-730.6	176.7	10.00	10.00	0.00
7,400.0	45.30	0.18	7,296.3	193.3	-730.4	241.1	10.00	10.00	0.00
7,500.0	55.30	0.18	7,360.1	270.2	-730.1	317.8	10.00	10.00	0.00
7,600.0	65.30	0.18	7,409.6	356.9	-729.9	404.3	10.00	10.00	0.00
7,700.0	75.30	0.18	7,443.2	451.0	-729.6	498.1	10.00	10.00	0.00
7,800.0	85.30	0.18	7,460.1	549.4	-729.3	596.3	10.00	10.00	0.00
7,850.0	90.30	0.18	7,462.0	599.4	-729.1	646.2	10.00	10.00	0.00
7,900.0	90.30	0.18	7,461.7	649.3	-729.0	696.0	0.00	0.00	0.00
8,000.0	90.30	0.18	7,461.2	749.3	-728.7	795.8	0.00	0.00	0.00
8,100.0	90.30	0.18	7,460.7	849.3	-728.3	895.5	0.00	0.00	0.00
8,200.0	90.30	0.18	7,460.2	949.3	-728.0	995.3	0.00	0.00	0.00
8,300.0	90.30	0.18	7,459.7	1,049.3	-727.7	1,095.1	0.00	0.00	0.00
8,400.0	90.30	0.18	7,459.1	1,149.3	-727.4	1,194.8	0.00	0.00	0.00
8,500.0	90.30	0.18	7,458.6	1,249.3	-727.1	1,294.6	0.00	0.00	0.00
8,600.0	90.30	0.18	7,458.1	1,349.3	-726.8	1,394.3	0.00	0.00	0.00
8,700.0	90.30	0.18	7,457.6	1,449.3	-726.5	1,494.1	0.00	0.00	0.00
8,800.0	90.30	0.18	7,457.0	1,549.3	-726.2	1,593.9	0.00	0.00	0.00
8,900.0	90.30	0.18	7,456.5	1,649.3	-725.9	1,693.6	0.00	0.00	0.00
9,000.0	90.30	0.18	7,456.0	1,749.3	-725.5	1,793.4	0.00	0.00	0.00
9,100.0	90.30	0.18	7,455.5	1,849.3	-725.2	1,893.1	0.00	0.00	0.00
9,200.0	90.30	0.18	7,455.0	1,949.3	-724.9	1,992.9	0.00	0.00	0.00
9,300.0	90.30	0.18	7,454.4	2,049.3	-724.6	2,092.7	0.00	0.00	0.00
9,400.0	90.30	0.18	7,453.9	2,149.3	-724.3	2,192.4	0.00	0.00	0.00
9,500.0	90.30	0.18	7,453.4	2,249.3	-724.0	2,292.2	0.00	0.00	0.00
9,600.0	90.30	0.18	7,452.9	2,349.3	-723.7	2,391.9	0.00	0.00	0.00
9,700.0	90.30	0.18	7,452.3	2,449.3	-723.4	2,491.7	0.00	0.00	0.00
9,800.0	90.30	0.18	7,451.8	2,549.3	-723.1	2,591.5	0.00	0.00	0.00
9,900.0	90.30	0.18	7,451.3	2,649.3	-722.7	2,691.2	0.00	0.00	0.00
10,000.0	90.30	0.18	7,450.8	2,749.3	-722.4	2,791.0	0.00	0.00	0.00
10,100.0	90.30	0.18	7,450.3	2,849.3	-722.1	2,890.7	0.00	0.00	0.00
10,200.0	90.30	0.18	7,449.7	2,949.3	-721.8	2,990.5	0.00	0.00	0.00

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<b>Site:</b>	Critter Creek 21-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 243-2109H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #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)	
10,300.0	90.30	0.18	7,449.2	3,049.3	-721.5	3,090.3	0.00	0.00	0.00	
10,400.0	90.30	0.18	7,448.7	3,149.3	-721.2	3,190.0	0.00	0.00	0.00	
10,500.0	90.30	0.18	7,448.2	3,249.3	-720.9	3,289.8	0.00	0.00	0.00	
10,600.0	90.30	0.18	7,447.6	3,349.3	-720.6	3,389.5	0.00	0.00	0.00	
10,700.0	90.30	0.18	7,447.1	3,449.3	-720.3	3,489.3	0.00	0.00	0.00	
10,800.0	90.30	0.18	7,446.6	3,549.3	-719.9	3,589.0	0.00	0.00	0.00	
10,900.0	90.30	0.18	7,446.1	3,649.3	-719.6	3,688.8	0.00	0.00	0.00	
11,000.0	90.30	0.18	7,445.6	3,749.3	-719.3	3,788.6	0.00	0.00	0.00	
11,100.0	90.30	0.18	7,445.0	3,849.3	-719.0	3,888.3	0.00	0.00	0.00	
11,200.0	90.30	0.18	7,444.5	3,949.3	-718.7	3,988.1	0.00	0.00	0.00	
11,300.0	90.30	0.18	7,444.0	4,049.3	-718.4	4,087.8	0.00	0.00	0.00	
11,400.0	90.30	0.18	7,443.5	4,149.3	-718.1	4,187.6	0.00	0.00	0.00	
11,500.0	90.30	0.18	7,442.9	4,249.3	-717.8	4,287.4	0.00	0.00	0.00	
11,600.0	90.30	0.18	7,442.4	4,349.3	-717.5	4,387.1	0.00	0.00	0.00	
11,700.0	90.30	0.18	7,441.9	4,449.3	-717.2	4,486.9	0.00	0.00	0.00	
11,800.0	90.30	0.18	7,441.4	4,549.3	-716.8	4,586.6	0.00	0.00	0.00	
11,900.0	90.30	0.18	7,440.9	4,649.3	-716.5	4,686.4	0.00	0.00	0.00	
12,000.0	90.30	0.18	7,440.3	4,749.3	-716.2	4,786.2	0.00	0.00	0.00	
12,100.0	90.30	0.18	7,439.8	4,849.3	-715.9	4,885.9	0.00	0.00	0.00	
12,200.0	90.30	0.18	7,439.3	4,949.3	-715.6	4,985.7	0.00	0.00	0.00	
12,300.0	90.30	0.18	7,438.8	5,049.3	-715.3	5,085.4	0.00	0.00	0.00	
12,400.0	90.30	0.18	7,438.2	5,149.3	-715.0	5,185.2	0.00	0.00	0.00	
12,500.0	90.30	0.18	7,437.7	5,249.3	-714.7	5,285.0	0.00	0.00	0.00	
12,600.0	90.30	0.18	7,437.2	5,349.3	-714.4	5,384.7	0.00	0.00	0.00	
12,700.0	90.30	0.18	7,436.7	5,449.3	-714.0	5,484.5	0.00	0.00	0.00	
12,800.0	90.30	0.18	7,436.2	5,549.3	-713.7	5,584.2	0.00	0.00	0.00	
12,900.0	90.30	0.18	7,435.6	5,649.2	-713.4	5,684.0	0.00	0.00	0.00	
13,000.0	90.30	0.18	7,435.1	5,749.2	-713.1	5,783.8	0.00	0.00	0.00	
13,100.0	90.30	0.18	7,434.6	5,849.2	-712.8	5,883.5	0.00	0.00	0.00	
13,200.0	90.30	0.18	7,434.1	5,949.2	-712.5	5,983.3	0.00	0.00	0.00	
13,300.0	90.30	0.18	7,433.5	6,049.2	-712.2	6,083.0	0.00	0.00	0.00	
13,400.0	90.30	0.18	7,433.0	6,149.2	-711.9	6,182.8	0.00	0.00	0.00	
13,500.0	90.30	0.18	7,432.5	6,249.2	-711.6	6,282.6	0.00	0.00	0.00	
13,600.0	90.30	0.18	7,432.0	6,349.2	-711.2	6,382.3	0.00	0.00	0.00	
13,700.0	90.30	0.18	7,431.5	6,449.2	-710.9	6,482.1	0.00	0.00	0.00	
13,800.0	90.30	0.18	7,430.9	6,549.2	-710.6	6,581.8	0.00	0.00	0.00	
13,900.0	90.30	0.18	7,430.4	6,649.2	-710.3	6,681.6	0.00	0.00	0.00	
14,000.0	90.30	0.18	7,429.9	6,749.2	-710.0	6,781.4	0.00	0.00	0.00	
14,100.0	90.30	0.18	7,429.4	6,849.2	-709.7	6,881.1	0.00	0.00	0.00	
14,200.0	90.30	0.18	7,428.9	6,949.2	-709.4	6,980.9	0.00	0.00	0.00	
14,300.0	90.30	0.18	7,428.3	7,049.2	-709.1	7,080.6	0.00	0.00	0.00	
14,400.0	90.30	0.18	7,427.8	7,149.2	-708.8	7,180.4	0.00	0.00	0.00	
14,500.0	90.30	0.18	7,427.3	7,249.2	-708.4	7,280.2	0.00	0.00	0.00	
14,600.0	90.30	0.18	7,426.8	7,349.2	-708.1	7,379.9	0.00	0.00	0.00	
14,700.0	90.30	0.18	7,426.2	7,449.2	-707.8	7,479.7	0.00	0.00	0.00	
14,800.0	90.30	0.18	7,425.7	7,549.2	-707.5	7,579.4	0.00	0.00	0.00	
14,900.0	90.30	0.18	7,425.2	7,649.2	-707.2	7,679.2	0.00	0.00	0.00	
15,000.0	90.30	0.18	7,424.7	7,749.2	-706.9	7,779.0	0.00	0.00	0.00	
15,100.0	90.30	0.18	7,424.2	7,849.2	-706.6	7,878.7	0.00	0.00	0.00	
15,200.0	90.30	0.18	7,423.6	7,949.2	-706.3	7,978.5	0.00	0.00	0.00	
15,300.0	90.30	0.18	7,423.1	8,049.2	-706.0	8,078.2	0.00	0.00	0.00	
15,400.0	90.30	0.18	7,422.6	8,149.2	-705.7	8,178.0	0.00	0.00	0.00	
15,500.0	90.30	0.18	7,422.1	8,249.2	-705.3	8,277.8	0.00	0.00	0.00	
15,600.0	90.30	0.18	7,421.5	8,349.2	-705.0	8,377.5	0.00	0.00	0.00	

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 243-2109H
<b>Company:</b>	Fifth Creek Energy	<b>TVD Reference:</b>	KB @ 5274.0usft (Original Well Elev)
<b>Project:</b>	State Line	<b>MD Reference:</b>	KB @ 5274.0usft (Original Well Elev)
<b>Site:</b>	Critter Creek 21-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 243-2109H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #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)	
15,700.0	90.30	0.18	7,421.0	8,449.2	-704.7	8,477.3	0.00	0.00	0.00	
15,800.0	90.30	0.18	7,420.5	8,549.2	-704.4	8,577.0	0.00	0.00	0.00	
15,900.0	90.30	0.18	7,420.0	8,649.2	-704.1	8,676.8	0.00	0.00	0.00	
16,000.0	90.30	0.18	7,419.5	8,749.2	-703.8	8,776.6	0.00	0.00	0.00	
16,100.0	90.30	0.18	7,418.9	8,849.2	-703.5	8,876.3	0.00	0.00	0.00	
16,200.0	90.30	0.18	7,418.4	8,949.2	-703.2	8,976.1	0.00	0.00	0.00	
16,300.0	90.30	0.18	7,417.9	9,049.2	-702.9	9,075.8	0.00	0.00	0.00	
16,400.0	90.30	0.18	7,417.4	9,149.2	-702.5	9,175.6	0.00	0.00	0.00	
16,500.0	90.30	0.18	7,416.8	9,249.2	-702.2	9,275.4	0.00	0.00	0.00	
16,600.0	90.30	0.18	7,416.3	9,349.2	-701.9	9,375.1	0.00	0.00	0.00	
16,700.0	90.30	0.18	7,415.8	9,449.2	-701.6	9,474.9	0.00	0.00	0.00	
16,800.0	90.30	0.18	7,415.3	9,549.2	-701.3	9,574.6	0.00	0.00	0.00	
16,900.0	90.30	0.18	7,414.8	9,649.2	-701.0	9,674.4	0.00	0.00	0.00	
17,000.0	90.30	0.18	7,414.2	9,749.2	-700.7	9,774.2	0.00	0.00	0.00	
17,100.0	90.30	0.18	7,413.7	9,849.2	-700.4	9,873.9	0.00	0.00	0.00	
17,200.0	90.30	0.18	7,413.2	9,949.2	-700.1	9,973.7	0.00	0.00	0.00	
17,300.0	90.30	0.18	7,412.7	10,049.2	-699.7	10,073.4	0.00	0.00	0.00	
17,400.0	90.30	0.18	7,412.1	10,149.2	-699.4	10,173.2	0.00	0.00	0.00	
17,500.0	90.30	0.18	7,411.6	10,249.2	-699.1	10,273.0	0.00	0.00	0.00	
17,600.0	90.30	0.18	7,411.1	10,349.2	-698.8	10,372.7	0.00	0.00	0.00	
17,700.0	90.30	0.18	7,410.6	10,449.2	-698.5	10,472.5	0.00	0.00	0.00	
17,800.0	90.30	0.18	7,410.1	10,549.2	-698.2	10,572.2	0.00	0.00	0.00	
17,811.3	90.30	0.18	7,410.0	10,560.5	-698.2	10,583.5	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
CC 243-2109H PBHL - hit/miss target - Shape - Point	0.00	0.00	7,410.0	10,560.5	-698.2	1,588,206.64	3,291,153.87	40° 56' 35.671 N	104° 26' 46.079 W	
CC 243-2109H LP - plan hits target center - Point	0.00	0.00	7,462.0	599.4	-729.1	1,578,245.89	3,291,241.57	40° 54' 57.251 N	104° 26' 46.478 W	