

# Fifth Creek Energy Company, LLC

Well Name: **Critter Creek 278-1527H**

Surface Location: Critter Creek Pad 15-11N-63W

North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

Ground Elevation: 5228.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot

0.0 0.01578366.13 3299705.75 40.915953 -104.415617

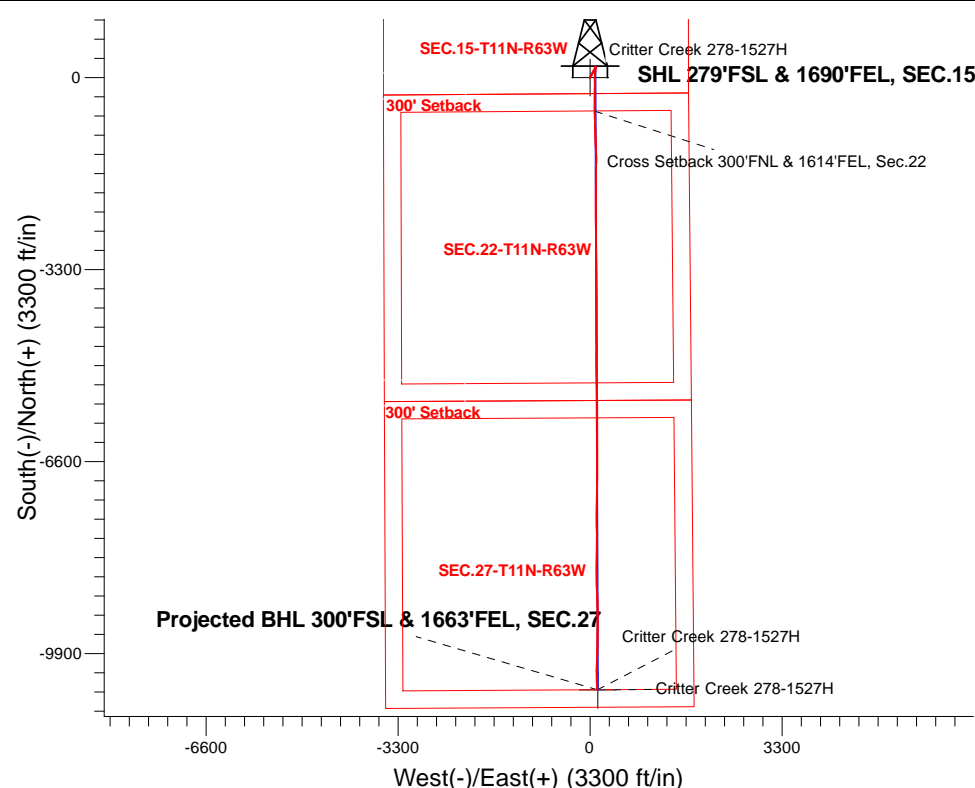
Cade 23 RKB - 16' WELL @ 5244.0ft (Cade 23 RKB - 16')

## FINAL SURVEY

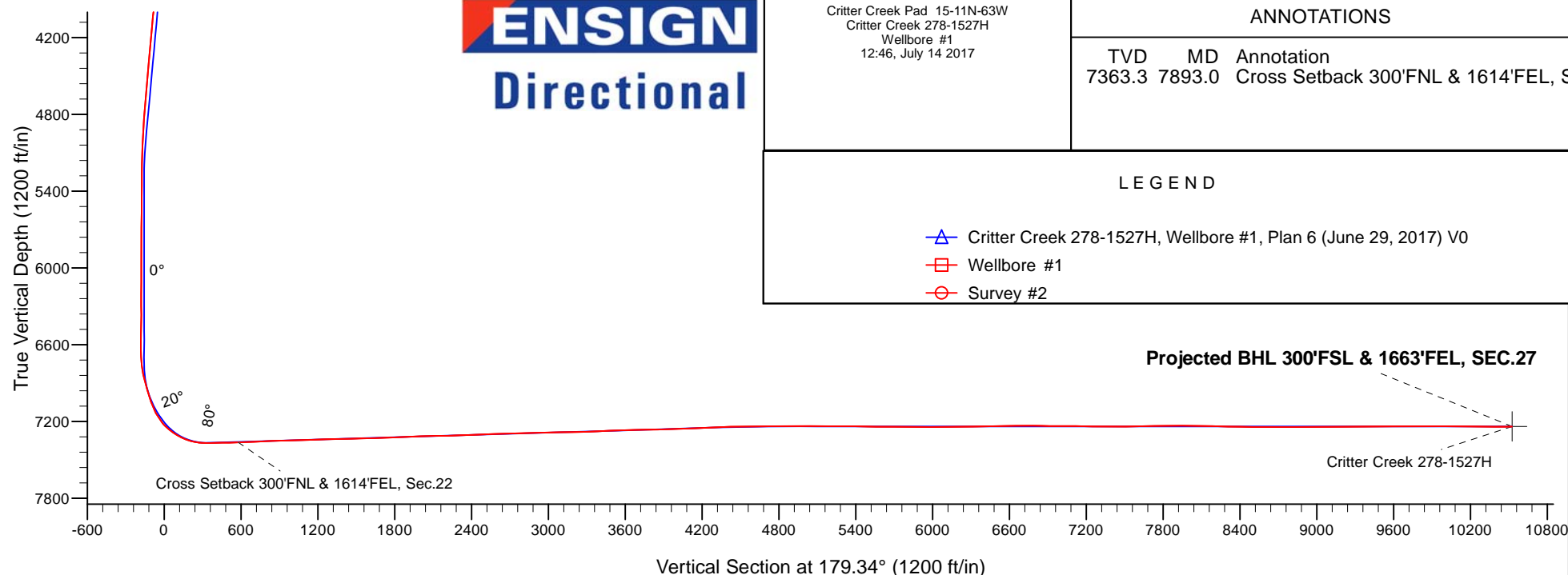
Projected Bottom Hole Location

17844'MD 7239'TVD 10524'S & 122'E of SHL

90.6 degree Incl @ 178.6 degree AZM



**ENSIGN**  
**Directional**



Critter Creek Pad 15-11N-63W  
Critter Creek 278-1527H  
Wellbore #1  
12:46, July 14 2017

### ANNOTATIONS

TVD	MD	Annotation
7363.3	7893.0	Cross Setback 300'FNL & 1614'FEL, Sec.22

### LEGEND

- △ Critter Creek 278-1527H, Wellbore #1, Plan 6 (June 29, 2017) V0
- Wellbore #1
- Survey #2



## **Fifth Creek Energy Company, LLC**

**Sec.15-T11N-R63W**

**Critter Creek Pad 15-11N-63W**

**Critter Creek 278-1527H**

**Wellbore #1**

**Survey: Survey #2**

## **Standard Survey Report**

**14 July, 2017**

<b>Company:</b>	Fifth Creek Energy Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 278-1527H
<b>Project:</b>	Sec.15-T11N-R63W	<b>TVD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Site:</b>	Critter Creek Pad 15-11N-63W	<b>MD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Well:</b>	Critter Creek 278-1527H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

<b>Project</b>	Sec.15-T11N-R63W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		Critter Creek Pad 15-11N-63W			
Site Position:		Northing:	1,578,381.47 usft	Latitude:	40.915969
From:	Lat/Long	Easting:	3,300,480.34 usft	Longitude:	-104.412814
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.70 °

Well	Critter Creek 278-1527H					
Well Position	+N/-S	0.0 ft	Northing:	1,578,366.13 usft	Latitude:	40.915953
	+E/-W	0.0 ft	Easting:	3,299,705.75 usft	Longitude:	-104.415617
Position Uncertainty		0.0 ft	Wellhead Elevation:	5,239.0 ft	Ground Level:	5,228.0 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>
	IGRF2010	6/29/2017	7.90	67.30	52,794

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	179.34	

<b>Survey Program</b>	<b>Date</b>	7/14/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
121.0	1,539.0	Survey #1 - Surface (Wellbore #1)	MWD	MWD - Standard	
1,568.0	17,844.0	Survey #2 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</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>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
1,539.0	1.23	254.57	1,538.9	-1.9	-3.6	1.9	0.00	0.00	0.00	
1,568.0	1.10	254.30	1,567.9	-2.1	-4.2	2.0	0.45	-0.45	-0.93	
1,664.0	0.60	5.10	1,663.9	-1.8	-5.1	1.7	1.49	-0.52	115.42	
1,760.0	0.40	11.10	1,759.9	-1.0	-4.9	0.9	0.22	-0.21	6.25	
1,855.0	0.40	53.20	1,854.9	-0.5	-4.6	0.4	0.30	0.00	44.32	
1,949.0	0.80	76.60	1,948.8	-0.1	-3.7	0.1	0.49	0.43	24.89	
2,043.0	0.80	72.20	2,042.8	0.2	-2.5	-0.3	0.07	0.00	-4.68	
2,138.0	0.60	62.60	2,137.8	0.7	-1.4	-0.7	0.24	-0.21	-10.11	
2,233.0	0.70	85.10	2,232.8	1.0	-0.4	-1.0	0.29	0.11	23.68	
2,328.0	0.60	79.60	2,327.8	1.1	0.7	-1.1	0.12	-0.11	-5.79	

<b>Company:</b>	Fifth Creek Energy Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 278-1527H
<b>Project:</b>	Sec.15-T11N-R63W	<b>TVD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Site:</b>	Critter Creek Pad 15-11N-63W	<b>MD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Well:</b>	Critter Creek 278-1527H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,422.0	0.40	91.90	2,421.8	1.2	1.5	-1.2	0.24	-0.21	13.09
2,517.0	0.60	53.60	2,516.8	1.5	2.2	-1.4	0.40	0.21	-40.32
2,613.0	0.80	59.00	2,612.8	2.1	3.2	-2.1	0.22	0.21	5.63
2,708.0	1.00	32.90	2,707.8	3.1	4.2	-3.1	0.47	0.21	-27.47
2,803.0	1.30	17.40	2,802.8	4.9	5.0	-4.8	0.45	0.32	-16.32
2,897.0	1.30	15.40	2,896.8	6.9	5.6	-6.8	0.05	0.00	-2.13
2,991.0	1.30	16.00	2,990.7	9.0	6.2	-8.9	0.01	0.00	0.64
3,086.0	1.10	11.20	3,085.7	10.9	6.7	-10.8	0.24	-0.21	-5.05
3,180.0	2.60	14.90	3,179.7	13.8	7.4	-13.8	1.60	1.60	3.94
3,274.0	3.60	34.30	3,273.5	18.3	9.6	-18.2	1.53	1.06	20.64
3,369.0	5.20	37.40	3,368.2	24.2	13.9	-24.1	1.70	1.68	3.26
3,463.0	6.30	30.40	3,461.8	32.1	19.1	-31.8	1.39	1.17	-7.45
3,558.0	6.20	27.60	3,556.2	41.1	24.1	-40.8	0.34	-0.11	-2.95
3,653.0	6.40	27.20	3,650.6	50.4	28.9	-50.0	0.22	0.21	-0.42
3,748.0	6.60	26.70	3,745.0	59.9	33.8	-59.5	0.22	0.21	-0.53
3,843.0	6.60	26.70	3,839.4	69.7	38.7	-69.2	0.00	0.00	0.00
3,939.0	6.10	29.00	3,934.8	79.1	43.6	-78.6	0.58	-0.52	2.40
4,033.0	5.80	23.20	4,028.3	87.8	47.9	-87.3	0.71	-0.32	-6.17
4,128.0	5.30	24.20	4,122.8	96.2	51.6	-95.6	0.54	-0.53	1.05
4,222.0	5.70	29.50	4,216.4	104.3	55.7	-103.6	0.69	0.43	5.64
4,317.0	5.60	26.90	4,310.9	112.5	60.1	-111.8	0.29	-0.11	-2.74
4,412.0	6.10	28.80	4,405.5	121.1	64.7	-120.3	0.56	0.53	2.00
4,507.0	6.30	29.50	4,499.9	130.0	69.7	-129.2	0.23	0.21	0.74
4,602.0	6.20	28.10	4,594.3	139.1	74.6	-138.2	0.19	-0.11	-1.47
4,698.0	5.50	30.70	4,689.8	147.6	79.4	-146.7	0.78	-0.73	2.71
4,792.0	5.40	29.90	4,783.4	155.3	83.9	-154.3	0.13	-0.11	-0.85
4,887.0	3.70	33.00	4,878.1	161.8	87.8	-160.7	1.81	-1.79	3.26
4,983.0	3.10	30.70	4,973.9	166.6	90.8	-165.5	0.64	-0.63	-2.40
5,077.0	1.90	3.10	5,067.8	170.3	92.2	-169.3	1.77	-1.28	-29.36
5,172.0	1.90	4.20	5,162.8	173.5	92.4	-172.4	0.04	0.00	1.16
5,267.0	0.60	333.60	5,257.8	175.5	92.3	-174.4	1.49	-1.37	-32.21
5,362.0	0.60	299.70	5,352.8	176.2	91.7	-175.1	0.37	0.00	-35.68
5,457.0	0.50	321.10	5,447.8	176.7	91.0	-175.7	0.24	-0.11	22.53
5,551.0	0.40	15.60	5,541.8	177.4	90.8	-176.3	0.45	-0.11	57.98
5,646.0	0.40	34.30	5,636.8	178.0	91.1	-176.9	0.14	0.00	19.68
5,741.0	0.50	19.80	5,731.8	178.6	91.4	-177.6	0.16	0.11	-15.26
5,836.0	0.50	39.90	5,826.8	179.3	91.8	-178.3	0.18	0.00	21.16
5,930.0	0.30	181.00	5,920.8	179.4	92.1	-178.3	0.81	-0.21	150.11
6,025.0	0.00	0.00	6,015.7	179.2	92.1	-178.1	0.32	-0.32	0.00
6,120.0	0.40	2.10	6,110.7	179.5	92.1	-178.4	0.42	0.42	0.00
6,214.0	0.50	60.40	6,204.7	180.0	92.4	-179.0	0.48	0.11	62.02
6,309.0	0.40	36.90	6,299.7	180.5	93.0	-179.4	0.22	-0.11	-24.74
6,404.0	0.40	35.10	6,394.7	181.0	93.4	-179.9	0.01	0.00	-1.89

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<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,498.0	0.40	27.60	6,488.7	181.6	93.7	-180.5	0.06	0.00	-7.98
6,593.0	0.80	13.50	6,583.7	182.5	94.0	-181.4	0.45	0.42	-14.84
6,688.0	1.80	226.20	6,678.7	182.1	93.1	-181.1	2.64	1.05	-155.05
6,782.0	6.90	182.40	6,772.4	175.5	91.8	-174.4	6.10	5.43	-46.60
6,877.0	15.70	180.00	6,865.5	156.9	91.6	-155.8	9.27	9.26	-2.53
6,972.0	15.90	184.90	6,956.9	131.1	90.5	-130.0	1.42	0.21	5.16
7,066.0	18.30	183.30	7,046.8	103.5	88.5	-102.5	2.60	2.55	-1.70
7,161.0	27.60	185.40	7,134.1	66.6	85.6	-65.6	9.83	9.79	2.21
7,255.0	40.50	182.80	7,211.9	14.2	82.0	-13.3	13.81	13.72	-2.77
7,350.0	53.50	178.20	7,276.5	-55.1	81.7	56.0	14.13	13.68	-4.84
7,445.0	64.10	179.60	7,325.7	-136.2	83.2	137.1	11.23	11.16	1.47
7,539.0	77.10	181.90	7,356.8	-224.6	82.0	225.6	14.02	13.83	2.45
7,634.0	90.00	180.90	7,367.5	-318.8	79.7	319.7	13.62	13.58	-1.05
7,729.0	90.90	180.20	7,366.7	-413.8	78.8	414.7	1.20	0.95	-0.74
7,823.0	91.00	179.60	7,365.2	-507.8	79.0	508.7	0.65	0.11	-0.64
7,893.0	92.11	179.60	7,363.3	-577.8	79.4	578.6	1.58	1.58	0.00
Cross Setback 300'FNL & 1614'FEL, Sec.22									
7,918.0	92.50	179.60	7,362.3	-602.7	79.6	603.6	1.58	1.58	0.00
8,013.0	92.90	178.60	7,357.8	-697.6	81.1	698.5	1.13	0.42	-1.05
8,107.0	91.90	178.00	7,353.9	-791.5	83.9	792.4	1.24	-1.06	-0.64
8,202.0	91.90	177.30	7,350.7	-886.4	87.8	887.3	0.74	0.00	-0.74
8,297.0	91.70	178.60	7,347.7	-981.3	91.2	982.2	1.38	-0.21	1.37
8,391.0	91.30	177.70	7,345.3	-1,075.2	94.2	1,076.2	1.05	-0.43	-0.96
8,486.0	91.80	179.10	7,342.7	-1,170.1	96.9	1,171.1	1.56	0.53	1.47
8,581.0	92.10	177.50	7,339.5	-1,265.0	99.7	1,266.1	1.71	0.32	-1.68
8,676.0	91.60	178.90	7,336.4	-1,359.9	102.7	1,361.0	1.56	-0.53	1.47
8,770.0	91.30	181.20	7,334.0	-1,453.9	102.6	1,455.0	2.47	-0.32	2.45
8,865.0	91.00	180.50	7,332.1	-1,548.8	101.2	1,549.9	0.80	-0.32	-0.74
8,960.0	91.70	181.70	7,329.9	-1,643.8	99.4	1,644.8	1.46	0.74	1.26
9,054.0	92.30	181.20	7,326.6	-1,737.7	97.0	1,738.7	0.83	0.64	-0.53
9,149.0	92.60	180.20	7,322.5	-1,832.6	95.8	1,833.6	1.10	0.32	-1.05
9,244.0	93.00	179.50	7,317.9	-1,927.5	96.1	1,928.5	0.85	0.42	-0.74
9,338.0	91.20	180.50	7,314.5	-2,021.4	96.1	2,022.4	2.19	-1.91	1.06
9,433.0	90.60	179.80	7,313.0	-2,116.4	95.8	2,117.4	0.97	-0.63	-0.74
9,528.0	91.80	179.80	7,311.0	-2,211.4	96.1	2,212.4	1.26	1.26	0.00
9,623.0	91.90	179.50	7,307.9	-2,306.3	96.7	2,307.3	0.33	0.11	-0.32
9,718.0	92.20	179.10	7,304.5	-2,401.3	97.9	2,402.2	0.53	0.32	-0.42
9,813.0	92.60	178.70	7,300.5	-2,496.2	99.7	2,497.2	0.60	0.42	-0.42
9,908.0	91.30	179.60	7,297.3	-2,591.1	101.1	2,592.1	1.66	-1.37	0.95
10,003.0	92.20	179.30	7,294.4	-2,686.1	102.0	2,687.0	1.00	0.95	-0.32
10,127.0	91.20	180.20	7,290.7	-2,810.0	102.6	2,811.0	1.08	-0.81	0.73
10,222.0	92.10	179.50	7,288.0	-2,905.0	102.8	2,905.9	1.20	0.95	-0.74
10,317.0	90.60	179.50	7,285.7	-2,999.9	103.6	3,000.9	1.58	-1.58	0.00

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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,412.0	91.20	178.60	7,284.3	-3,094.9	105.2	3,095.9	1.14	0.63	-0.95
10,508.0	91.30	178.40	7,282.2	-3,190.8	107.7	3,191.9	0.23	0.10	-0.21
10,604.0	91.50	180.30	7,279.8	-3,286.8	108.8	3,287.8	1.99	0.21	1.98
10,699.0	92.80	180.20	7,276.2	-3,381.7	108.4	3,382.8	1.37	1.37	-0.11
10,794.0	92.80	181.00	7,271.6	-3,476.6	107.4	3,477.6	0.84	0.00	0.84
10,889.0	91.30	180.30	7,268.2	-3,571.5	106.3	3,572.5	1.74	-1.58	-0.74
10,984.0	91.90	179.60	7,265.6	-3,666.5	106.4	3,667.5	0.97	0.63	-0.74
11,078.0	90.10	179.60	7,263.9	-3,760.5	107.1	3,761.5	1.91	-1.91	0.00
11,173.0	91.30	180.30	7,262.8	-3,855.5	107.2	3,856.4	1.46	1.26	0.74
11,268.0	92.00	179.30	7,260.0	-3,950.4	107.5	3,951.4	1.28	0.74	-1.05
11,362.0	92.50	180.20	7,256.3	-4,044.4	107.9	4,045.3	1.09	0.53	0.96
11,457.0	92.30	179.30	7,252.4	-4,139.3	108.3	4,140.2	0.97	-0.21	-0.95
11,552.0	92.40	178.60	7,248.5	-4,234.2	110.1	4,235.2	0.74	0.11	-0.74
11,646.0	93.00	180.00	7,244.0	-4,328.1	111.2	4,329.1	1.62	0.64	1.49
11,741.0	91.50	180.00	7,240.3	-4,423.0	111.2	4,424.0	1.58	-1.58	0.00
11,836.0	90.20	179.80	7,238.9	-4,518.0	111.4	4,519.0	1.38	-1.37	-0.21
11,930.0	90.60	179.30	7,238.2	-4,612.0	112.1	4,612.9	0.68	0.43	-0.53
12,025.0	90.20	180.70	7,237.6	-4,707.0	112.1	4,707.9	1.53	-0.42	1.47
12,120.0	90.30	180.70	7,237.2	-4,801.9	110.9	4,802.9	0.11	0.11	0.00
12,214.0	90.50	180.50	7,236.5	-4,895.9	110.0	4,896.9	0.30	0.21	-0.21
12,309.0	90.70	179.80	7,235.5	-4,990.9	109.7	4,991.9	0.77	0.21	-0.74
12,404.0	89.30	179.80	7,235.5	-5,085.9	110.0	5,086.9	1.47	-1.47	0.00
12,498.0	89.60	178.40	7,236.4	-5,179.9	111.5	5,180.9	1.52	0.32	-1.49
12,593.0	90.30	177.70	7,236.5	-5,274.9	114.8	5,275.8	1.04	0.74	-0.74
12,687.0	89.40	178.20	7,236.7	-5,368.8	118.1	5,369.8	1.10	-0.96	0.53
12,782.0	88.60	178.70	7,238.4	-5,463.7	120.7	5,464.8	0.99	-0.84	0.53
12,876.0	89.30	179.30	7,240.1	-5,557.7	122.3	5,558.8	0.98	0.74	0.64
12,971.0	89.70	181.00	7,240.9	-5,652.7	122.1	5,653.7	1.84	0.42	1.79
13,065.0	89.60	180.00	7,241.5	-5,746.7	121.3	5,747.7	1.07	-0.11	-1.06
13,160.0	89.70	179.30	7,242.1	-5,841.7	121.8	5,842.7	0.74	0.11	-0.74
13,255.0	89.40	180.20	7,242.8	-5,936.7	122.2	5,937.7	1.00	-0.32	0.95
13,349.0	90.50	180.70	7,242.9	-6,030.7	121.5	6,031.7	1.29	1.17	0.53
13,444.0	90.60	179.50	7,242.0	-6,125.7	121.3	6,126.7	1.27	0.11	-1.26
13,538.0	90.70	180.50	7,240.9	-6,219.7	121.3	6,220.7	1.07	0.11	1.06
13,633.0	90.50	179.10	7,240.0	-6,314.7	121.7	6,315.6	1.49	-0.21	-1.47
13,728.0	91.30	181.40	7,238.5	-6,409.6	121.3	6,410.6	2.56	0.84	2.42
13,822.0	91.30	180.30	7,236.3	-6,503.6	119.9	6,504.6	1.17	0.00	-1.17
13,917.0	91.70	179.50	7,233.8	-6,598.6	120.0	6,599.5	0.94	0.42	-0.84
14,011.0	89.70	180.20	7,232.7	-6,692.6	120.3	6,693.5	2.25	-2.13	0.74
14,106.0	89.70	178.40	7,233.2	-6,787.6	121.4	6,788.5	1.89	0.00	-1.89
14,200.0	88.60	180.30	7,234.6	-6,881.5	122.5	6,882.5	2.34	-1.17	2.02
14,295.0	90.00	182.10	7,235.7	-6,976.5	120.5	6,977.4	2.40	1.47	1.89
14,389.0	90.20	181.60	7,235.6	-7,070.4	117.5	7,071.3	0.57	0.21	-0.53
14,484.0	88.80	180.70	7,236.4	-7,165.4	115.6	7,166.3	1.75	-1.47	-0.95

<b>Company:</b>	Fifth Creek Energy Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 278-1527H
<b>Project:</b>	Sec.15-T11N-R63W	<b>TVD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Site:</b>	Critter Creek Pad 15-11N-63W	<b>MD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Well:</b>	Critter Creek 278-1527H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,578.0	89.00	179.60	7,238.2	-7,259.4	115.3	7,260.2	1.19	0.21	-1.17
14,673.0	89.40	181.20	7,239.5	-7,354.4	114.7	7,355.2	1.74	0.42	1.68
14,767.0	90.60	180.50	7,239.5	-7,448.4	113.3	7,449.2	1.48	1.28	-0.74
14,862.0	90.60	179.10	7,238.5	-7,543.4	113.6	7,544.2	1.47	0.00	-1.47
14,957.0	91.30	180.00	7,237.0	-7,638.3	114.3	7,639.2	1.20	0.74	0.95
15,051.0	91.50	178.90	7,234.7	-7,732.3	115.3	7,733.1	1.19	0.21	-1.17
15,146.0	90.50	178.60	7,233.0	-7,827.3	117.3	7,828.1	1.10	-1.05	-0.32
15,242.0	90.00	179.60	7,232.6	-7,923.3	118.8	7,924.1	1.16	-0.52	1.04
15,341.0	89.30	181.40	7,233.2	-8,022.3	118.0	8,023.1	1.95	-0.71	1.82
15,435.0	89.10	181.60	7,234.5	-8,116.2	115.5	8,117.0	0.30	-0.21	0.21
15,530.0	88.10	180.70	7,236.8	-8,211.2	113.6	8,211.9	1.42	-1.05	-0.95
15,625.0	89.10	180.70	7,239.2	-8,306.1	112.4	8,306.9	1.05	1.05	0.00
15,720.0	88.70	180.30	7,241.0	-8,401.1	111.6	8,401.8	0.60	-0.42	-0.42
15,815.0	89.50	178.90	7,242.5	-8,496.1	112.3	8,496.8	1.70	0.84	-1.47
15,909.0	89.80	179.60	7,243.0	-8,590.1	113.5	8,590.8	0.81	0.32	0.74
16,003.0	89.90	178.60	7,243.3	-8,684.1	115.0	8,684.8	1.07	0.11	-1.06
16,098.0	90.50	177.90	7,243.0	-8,779.0	117.9	8,779.8	0.97	0.63	-0.74
16,192.0	90.70	179.30	7,242.0	-8,873.0	120.2	8,873.8	1.50	0.21	1.49
16,287.0	89.70	177.70	7,241.6	-8,967.9	122.7	8,968.8	1.99	-1.05	-1.68
16,380.0	90.00	178.00	7,241.9	-9,060.9	126.2	9,061.7	0.46	0.32	0.32
16,475.0	90.00	179.50	7,241.9	-9,155.8	128.2	9,156.7	1.58	0.00	1.58
16,570.0	90.20	179.60	7,241.7	-9,250.8	129.0	9,251.7	0.24	0.21	0.11
16,665.0	91.50	180.20	7,240.3	-9,345.8	129.1	9,346.7	1.51	1.37	0.63
16,760.0	90.40	180.20	7,238.7	-9,440.8	128.8	9,441.7	1.16	-1.16	0.00
16,855.0	90.30	178.90	7,238.2	-9,535.8	129.6	9,536.7	1.37	-0.11	-1.37
16,950.0	90.20	181.40	7,237.7	-9,630.8	129.3	9,631.7	2.63	-0.11	2.63
17,044.0	90.30	181.90	7,237.3	-9,724.8	126.6	9,725.6	0.54	0.11	0.53
17,139.0	90.30	182.30	7,236.8	-9,819.7	123.1	9,820.5	0.42	0.00	0.42
17,234.0	89.90	181.60	7,236.7	-9,914.6	119.9	9,915.4	0.85	-0.42	-0.74
17,328.0	89.70	181.20	7,237.0	-10,008.6	117.6	10,009.3	0.48	-0.21	-0.43
17,422.0	89.50	181.60	7,237.7	-10,102.6	115.3	10,103.2	0.48	-0.21	0.43
17,516.0	89.70	179.60	7,238.3	-10,196.6	114.3	10,197.2	2.14	0.21	-2.13
17,610.0	89.20	178.60	7,239.2	-10,290.6	115.8	10,291.2	1.19	-0.53	-1.06
17,703.0	89.60	178.60	7,240.2	-10,383.5	118.1	10,384.2	0.43	0.43	0.00
17,789.0	90.60	178.60	7,240.0	-10,469.5	120.2	10,470.2	1.16	1.16	0.00
17,844.0	90.60	178.60	7,239.5	-10,524.5	121.5	10,525.2	0.00	0.00	0.00

<b>Company:</b>	Fifth Creek Energy Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 278-1527H
<b>Project:</b>	Sec.15-T11N-R63W	<b>TVD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Site:</b>	Critter Creek Pad 15-11N-63W	<b>MD Reference:</b>	WELL @ 5244.0ft (Cade 23 RKB - 16')
<b>Well:</b>	Critter Creek 278-1527H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 279'FSL & 1690'FE - survey misses target center by 1536.9ft at 1539.0ft MD (1538.9 TVD, -1.9 N, -3.6 E) - Point	0.00	0.00	2.0	0.0	0.0	1,578,366.16	3,299,705.75	40.915953	-104.415617
BHL 300'FSL & 1650'FE - survey misses target center by 13.0ft at 17844.0ft MD (7239.5 TVD, -10524.5 N, 121.5 E) - Point	0.00	0.00	7,238.0	-10,524.4	134.4	1,567,843.95	3,299,968.82	40.887067	-104.415131

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
+N/-S (ft)	+E/-W (ft)			
7,893.0	7,363.3	-577.8	79.4	Cross Setback 300'FNL & 1614'FEL, Sec.22

Checked By: _____	Approved By: _____	Date: _____
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