



January 7, 2019

Devon Energy Production Company, LP
Well: Flagler 8 Federal 3H
County/Parish: Lea County, NM

LEAM MWD: (OH) from 0' MD – 17,150' MD
Projection: 17,198' MD

This Borehole Survey taken between 12/02/18 and 01/04/19 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: January 7, 2019



Survey Certification Form

State of New Mexico

Lea County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Services, that I did on the day(s) of 12/02/2018 through 01/04/2019, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 17,198' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy Production Company, LP for the Flagler 8 Federal 3H in Lea County, New Mexico; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Services.

A handwritten signature in black ink, appearing to read 'Randy W. Rakowitz', is written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Flagler 8 Federal 3H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3446.9' GE + 23.5' KB @ 3470.40usft
Site:	Flagler 8 Federal	MD Reference:	3446.9' GE + 23.5' KB @ 3470.40usft
Well:	Flagler 8 Federal 3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User Db

Project	Lea County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Flagler 8 Federal		
Site Position:		Northing:	414,857.70 usft
From:	Map	Easting:	770,963.69 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 8' 18.0547 N
		Longitude:	103° 35' 29.2852 W
		Grid Convergence:	0.39 °

Well	Flagler 8 Federal 3H		
Well Position	+N/-S	0.00 usft	Northing: 414,851.32 usft
	+E/-W	0.00 usft	Easting: 769,983.93 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 8' 18.0582 N
		Longitude:	103° 35' 40.6802 W
		Ground Level:	3,446.90 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	11/16/2018	6.70
			Dip Angle (°) 59.78
			Field Strength (nT) 47,869

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 359.61

Survey Program	Date 1/7/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
179.00	17,150.00	Survey #1 (OH)	LEAM MWD+HDGM
17,198.00	17,198.00	Survey #2 (OH)	Project
			Description
			MWD+HDGM
			Projection

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
179.00	0.50	68.70	179.00	0.28	0.73	0.28	0.28	0.28	0.00	
270.00	0.30	105.80	270.00	0.36	1.33	0.35	0.35	-0.22	40.77	
362.00	0.30	117.10	361.99	0.19	1.77	0.18	0.06	0.00	12.28	
453.00	0.20	64.50	452.99	0.15	2.13	0.13	0.26	-0.11	-57.80	
542.00	0.40	93.90	541.99	0.19	2.58	0.18	0.28	0.22	33.03	
634.00	0.20	49.40	633.99	0.28	3.02	0.26	0.32	-0.22	-48.37	
726.00	0.20	31.10	725.99	0.52	3.23	0.50	0.07	0.00	-19.89	
817.00	0.10	279.70	816.99	0.67	3.23	0.65	0.28	-0.11	-122.42	
909.00	0.30	279.50	908.99	0.72	2.91	0.70	0.22	0.22	-0.22	

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Well:	Flagler 8 Federal 3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User Db

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)
999.00	0.20	173.10	998.99	0.60	2.70	0.59	0.45	-0.11	-118.22
1,058.00	0.30	288.80	1,057.99	0.55	2.57	0.53	0.72	0.17	196.10
1,210.00	0.50	281.80	1,209.99	0.82	1.54	0.80	0.14	0.13	-4.61
1,303.00	0.30	245.40	1,302.98	0.80	0.92	0.79	0.34	-0.22	-39.14
1,394.00	0.50	272.10	1,393.98	0.71	0.31	0.71	0.29	0.22	29.34
1,519.00	0.80	249.60	1,518.97	0.43	-1.06	0.44	0.31	0.24	-18.00
1,614.00	0.90	265.20	1,613.96	0.13	-2.42	0.15	0.26	0.11	16.42
1,709.00	1.00	247.80	1,708.95	-0.24	-3.93	-0.21	0.32	0.11	-18.32
1,803.00	1.10	265.40	1,802.93	-0.62	-5.59	-0.59	0.36	0.11	18.72
1,896.00	0.90	254.20	1,895.92	-0.89	-7.18	-0.85	0.30	-0.22	-12.04
1,991.00	1.10	249.80	1,990.91	-1.41	-8.76	-1.35	0.23	0.21	-4.63
2,086.00	1.00	250.50	2,085.89	-2.00	-10.39	-1.93	0.11	-0.11	0.74
2,180.00	0.70	262.60	2,179.88	-2.35	-11.74	-2.27	0.37	-0.32	12.87
2,275.00	0.60	244.50	2,274.87	-2.64	-12.76	-2.55	0.24	-0.11	-19.05
2,370.00	0.80	258.20	2,369.87	-2.99	-13.86	-2.90	0.27	0.21	14.42
2,464.00	0.50	245.70	2,463.86	-3.29	-14.88	-3.19	0.35	-0.32	-13.30
2,559.00	1.10	224.60	2,558.85	-4.11	-15.89	-4.00	0.69	0.63	-22.21
2,654.00	1.70	234.00	2,653.82	-5.59	-17.67	-5.47	0.67	0.63	9.89
2,749.00	3.00	236.20	2,748.74	-7.80	-20.88	-7.66	1.37	1.37	2.32
2,843.00	3.90	236.80	2,842.57	-10.92	-25.60	-10.75	0.96	0.96	0.64
2,937.00	3.70	238.20	2,936.36	-14.27	-30.85	-14.06	0.23	-0.21	1.49
3,032.00	3.50	234.30	3,031.17	-17.58	-35.81	-17.33	0.33	-0.21	-4.11
3,126.00	3.70	235.40	3,124.99	-20.97	-40.64	-20.70	0.23	0.21	1.17
3,221.00	4.70	240.50	3,219.73	-24.63	-46.55	-24.31	1.12	1.05	5.37
3,315.00	4.90	245.40	3,313.40	-28.20	-53.55	-27.83	0.49	0.21	5.21
3,410.00	4.70	244.00	3,408.07	-31.59	-60.74	-31.18	0.24	-0.21	-1.47
3,504.00	4.00	244.20	3,501.80	-34.71	-67.15	-34.25	0.74	-0.74	0.21
3,598.00	3.80	243.30	3,595.58	-37.54	-72.89	-37.04	0.22	-0.21	-0.96
3,692.00	3.90	245.70	3,689.37	-40.25	-78.58	-39.71	0.20	0.11	2.55
3,787.00	3.30	241.90	3,784.18	-42.87	-83.94	-42.30	0.68	-0.63	-4.00
3,880.00	3.10	235.00	3,877.04	-45.57	-88.36	-44.97	0.47	-0.22	-7.42
3,975.00	3.30	231.80	3,971.89	-48.74	-92.61	-48.10	0.28	0.21	-3.37
4,070.00	2.80	226.70	4,066.75	-52.02	-96.45	-51.36	0.60	-0.53	-5.37
4,164.00	2.60	232.00	4,160.65	-54.90	-99.80	-54.22	0.34	-0.21	5.64
4,260.00	3.30	229.20	4,256.52	-58.05	-103.61	-57.34	0.74	0.73	-2.92
4,353.00	4.30	228.30	4,349.32	-62.12	-108.24	-61.38	1.08	1.08	-0.97
4,448.00	4.20	222.40	4,444.06	-67.06	-113.24	-66.28	0.47	-0.11	-6.21
4,542.00	3.90	220.20	4,537.82	-72.04	-117.63	-71.24	0.36	-0.32	-2.34
4,637.00	4.60	221.50	4,632.56	-77.36	-122.24	-76.53	0.74	0.74	1.37
4,731.00	5.00	225.90	4,726.23	-83.04	-127.68	-82.16	0.58	0.43	4.68
4,826.00	5.20	241.00	4,820.86	-88.00	-134.42	-87.09	1.42	0.21	15.89
4,920.00	5.10	252.80	4,914.48	-91.30	-142.13	-90.33	1.13	-0.11	12.55
5,014.00	4.90	251.50	5,008.12	-93.81	-149.93	-92.79	0.24	-0.21	-1.38

LEAM Drilling Services

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Survey

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5,108.00	4.70	253.50	5,101.79	-96.18	-157.43	-95.11	0.28	-0.21	2.13
5,203.00	4.50	251.40	5,196.49	-98.48	-164.69	-97.35	0.28	-0.21	-2.21
5,298.00	4.40	249.60	5,291.20	-100.93	-171.64	-99.76	0.18	-0.11	-1.89
5,393.00	4.10	252.10	5,385.94	-103.25	-178.29	-102.03	0.37	-0.32	2.63
5,487.00	4.00	249.40	5,479.71	-105.44	-184.56	-104.18	0.23	-0.11	-2.87
5,582.00	3.80	250.50	5,574.49	-107.65	-190.62	-106.35	0.22	-0.21	1.16
5,677.00	4.00	248.00	5,669.27	-109.94	-196.66	-108.60	0.28	0.21	-2.63
5,771.00	3.90	251.20	5,763.04	-112.20	-202.73	-110.82	0.26	-0.11	3.40
5,866.00	3.70	252.10	5,857.83	-114.19	-208.71	-112.76	0.22	-0.21	0.95
5,960.00	3.30	250.10	5,951.66	-116.04	-214.14	-114.58	0.44	-0.43	-2.13
6,054.00	3.30	249.10	6,045.50	-117.92	-219.21	-116.43	0.06	0.00	-1.06
6,149.00	3.50	251.00	6,140.33	-119.84	-224.50	-118.31	0.24	0.21	2.00
6,244.00	3.30	253.80	6,235.17	-121.55	-229.87	-119.98	0.27	-0.21	2.95
6,339.00	3.00	251.50	6,330.02	-123.10	-234.85	-121.50	0.34	-0.32	-2.42
6,434.00	2.30	246.80	6,424.92	-124.64	-238.96	-123.01	0.77	-0.74	-4.95
6,528.00	1.50	231.30	6,518.87	-126.15	-241.66	-124.51	1.00	-0.85	-16.49
6,623.00	0.80	193.40	6,613.85	-127.58	-242.78	-125.92	1.05	-0.74	-39.89
6,718.00	0.70	204.20	6,708.84	-128.75	-243.17	-127.09	0.18	-0.11	11.37
6,812.00	0.00	309.50	6,802.84	-129.28	-243.41	-127.62	0.74	-0.74	0.00
6,907.00	0.20	210.10	6,897.84	-129.42	-243.49	-127.76	0.21	0.21	0.00
7,001.00	0.10	68.90	6,991.84	-129.53	-243.50	-127.87	0.30	-0.11	-150.21
7,096.00	0.40	205.00	7,086.84	-129.80	-243.56	-128.14	0.50	0.32	143.26
7,190.00	0.30	243.40	7,180.84	-130.21	-243.92	-128.55	0.26	-0.11	40.85
7,284.00	0.30	210.90	7,274.84	-130.53	-244.27	-128.87	0.18	0.00	-34.57
7,379.00	0.60	234.50	7,369.83	-131.03	-244.80	-129.36	0.36	0.32	24.84
7,473.00	0.90	241.00	7,463.83	-131.68	-245.85	-130.00	0.33	0.32	6.91
7,568.00	0.30	222.40	7,558.82	-132.22	-246.67	-130.54	0.66	-0.63	-19.58
7,661.00	0.00	112.50	7,651.82	-132.40	-246.83	-130.72	0.32	-0.32	0.00
7,756.00	0.40	205.30	7,746.82	-132.70	-246.97	-131.02	0.42	0.42	0.00
7,851.00	0.40	217.10	7,841.82	-133.27	-247.31	-131.58	0.09	0.00	12.42
7,946.00	0.40	204.20	7,936.81	-133.83	-247.65	-132.14	0.09	0.00	-13.58
8,040.00	0.30	176.10	8,030.81	-134.38	-247.77	-132.69	0.21	-0.11	-29.89
8,135.00	0.30	308.30	8,125.81	-134.47	-247.94	-132.78	0.58	0.00	139.16
8,230.00	0.30	278.80	8,220.81	-134.28	-248.39	-132.59	0.16	0.00	-31.05
8,325.00	0.10	309.00	8,315.81	-134.19	-248.70	-132.49	0.23	-0.21	31.79
8,419.00	0.40	249.80	8,409.81	-134.25	-249.07	-132.55	0.38	0.32	-62.98
8,514.00	0.40	247.50	8,504.81	-134.49	-249.69	-132.79	0.02	0.00	-2.42
8,608.00	0.50	248.40	8,598.80	-134.77	-250.37	-133.06	0.11	0.11	0.96
8,704.00	0.60	241.50	8,694.80	-135.16	-251.20	-133.45	0.12	0.10	-7.19
8,798.00	0.10	167.30	8,788.80	-135.48	-251.62	-133.76	0.62	-0.53	-78.94
8,893.00	0.40	106.30	8,883.80	-135.65	-251.28	-133.94	0.38	0.32	-64.21
8,986.00	0.10	320.30	8,976.80	-135.68	-251.02	-133.97	0.52	-0.32	-156.99
9,080.00	0.40	252.90	9,070.80	-135.71	-251.39	-134.00	0.40	0.32	-71.70

LEAM Drilling Services

Survey Report

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9,174.00	0.40	294.40	9,164.79	-135.68	-252.00	-133.96	0.30	0.00	44.15
9,269.00	0.50	245.20	9,259.79	-135.71	-252.68	-133.99	0.41	0.11	-51.79
9,363.00	0.50	261.00	9,353.79	-135.95	-253.45	-134.22	0.15	0.00	16.81
9,458.00	0.40	260.30	9,448.78	-136.07	-254.19	-134.34	0.11	-0.11	-0.74
9,553.00	0.50	279.80	9,543.78	-136.05	-254.93	-134.32	0.19	0.11	20.53
9,648.00	1.10	284.90	9,638.77	-135.75	-256.21	-134.00	0.64	0.63	5.37
9,743.00	1.00	286.20	9,733.76	-135.28	-257.89	-133.52	0.11	-0.11	1.37
9,836.00	1.00	283.50	9,826.74	-134.87	-259.46	-133.10	0.05	0.00	-2.90
9,931.00	0.90	280.20	9,921.73	-134.54	-261.00	-132.76	0.12	-0.11	-3.47
10,026.00	0.20	30.40	10,016.72	-134.27	-261.65	-132.48	1.04	-0.74	116.00
10,120.00	0.90	44.50	10,110.72	-133.60	-261.05	-131.82	0.75	0.74	15.00
10,215.00	1.20	49.60	10,205.70	-132.42	-259.77	-130.65	0.33	0.32	5.37
10,310.00	1.10	42.90	10,300.68	-131.11	-258.39	-129.35	0.18	-0.11	-7.05
10,404.00	0.80	23.40	10,394.67	-129.85	-257.52	-128.09	0.46	-0.32	-20.74
10,499.00	0.50	57.10	10,489.67	-129.01	-256.91	-127.26	0.50	-0.32	35.47
10,593.00	0.70	84.20	10,583.66	-128.73	-255.99	-126.99	0.36	0.21	28.83
10,688.00	0.80	90.50	10,678.65	-128.68	-254.75	-126.94	0.14	0.11	6.63
10,783.00	1.10	90.90	10,773.64	-128.70	-253.17	-126.97	0.32	0.32	0.42
10,877.00	0.90	80.90	10,867.63	-128.60	-251.54	-126.88	0.28	-0.21	-10.64
10,973.00	0.80	19.00	10,963.62	-127.84	-250.58	-126.13	0.92	-0.10	-64.48
11,067.00	1.80	358.60	11,057.59	-125.75	-250.40	-124.04	1.16	1.06	-21.70
11,167.00	3.00	9.30	11,157.50	-121.59	-250.02	-119.89	1.28	1.20	10.70
11,262.00	4.30	0.20	11,252.31	-115.58	-249.60	-113.88	1.49	1.37	-9.58
11,356.00	5.60	353.30	11,345.96	-107.50	-250.13	-105.79	1.52	1.38	-7.34
11,451.00	7.00	353.80	11,440.38	-97.14	-251.29	-95.43	1.47	1.47	0.53
11,546.00	8.40	355.80	11,534.52	-84.46	-252.43	-82.74	1.50	1.47	2.11
11,640.00	8.20	352.30	11,627.54	-70.97	-253.83	-69.24	0.58	-0.21	-3.72
11,734.00	8.30	358.80	11,720.57	-57.55	-254.87	-55.81	1.00	0.11	6.91
11,800.00	8.30	2.10	11,785.88	-48.02	-254.79	-46.29	0.72	0.00	5.00
11,917.00	14.20	6.50	11,900.58	-25.31	-252.86	-23.58	5.09	5.04	3.76
12,011.00	28.00	4.20	11,988.07	8.32	-249.92	10.02	14.70	14.68	-2.45
12,059.00	36.00	2.40	12,028.74	33.69	-248.50	35.38	16.78	16.67	-3.75
12,105.00	42.10	1.00	12,064.45	62.64	-247.67	64.33	13.40	13.26	-3.04
12,153.00	46.70	358.90	12,098.74	96.22	-247.72	97.90	10.06	9.58	-4.38
12,199.00	50.30	358.00	12,129.21	130.65	-248.66	132.34	7.96	7.83	-1.96
12,247.00	53.50	358.80	12,158.83	168.40	-249.71	170.10	6.79	6.67	1.67
12,293.00	55.50	359.80	12,185.54	205.84	-250.16	207.54	4.69	4.35	2.17
12,341.00	58.50	0.20	12,211.68	246.10	-250.16	247.79	6.29	6.25	0.83
12,387.00	63.50	0.30	12,233.97	286.32	-249.99	288.01	10.87	10.87	0.22
12,435.00	66.70	0.30	12,254.18	329.85	-249.76	331.54	6.67	6.67	0.00
12,482.00	70.70	0.50	12,271.25	373.63	-249.45	375.32	8.52	8.51	0.43
12,530.00	75.20	0.20	12,285.32	419.50	-249.17	421.19	9.39	9.38	-0.63
12,576.00	78.20	0.70	12,295.90	464.26	-248.82	465.95	6.61	6.52	1.09
12,624.00	80.20	0.90	12,304.89	511.41	-248.16	513.08	4.19	4.17	0.42

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Flagler 8 Federal 3H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3446.9' GE + 23.5' KB @ 3470.40usft
Site:	Flagler 8 Federal	MD Reference:	3446.9' GE + 23.5' KB @ 3470.40usft
Well:	Flagler 8 Federal 3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User Db

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)
12,669.00	81.90	0.30	12,311.89	555.85	-247.70	557.53	4.00	3.78	-1.33
12,717.00	84.20	359.60	12,317.70	603.50	-247.74	605.17	5.01	4.79	-1.46
12,763.00	86.70	358.60	12,321.35	649.34	-248.46	651.02	5.85	5.43	-2.17
12,811.00	87.80	358.00	12,323.65	697.27	-249.88	698.95	2.61	2.29	-1.25
12,857.00	91.00	359.10	12,324.13	743.24	-251.04	744.93	7.36	6.96	2.39
12,951.00	91.40	358.40	12,322.17	837.20	-253.09	838.90	0.86	0.43	-0.74
13,045.00	87.10	356.30	12,323.40	931.06	-257.44	932.79	5.09	-4.57	-2.23
13,139.00	91.50	357.30	12,324.54	1,024.89	-262.68	1,026.65	4.80	4.68	1.06
13,233.00	93.70	357.30	12,320.28	1,118.68	-267.11	1,120.47	2.34	2.34	0.00
13,327.00	88.80	356.60	12,318.23	1,212.49	-272.11	1,214.32	5.27	-5.21	-0.74
13,421.00	90.50	359.50	12,318.81	1,306.42	-275.30	1,308.27	3.58	1.81	3.09
13,516.00	92.90	3.30	12,315.99	1,401.33	-272.99	1,403.16	4.73	2.53	4.00
13,610.00	91.10	6.00	12,312.71	1,494.95	-265.37	1,496.72	3.45	-1.91	2.87
13,704.00	88.40	4.90	12,313.12	1,588.51	-256.44	1,590.22	3.10	-2.87	-1.17
13,798.00	90.80	6.50	12,313.77	1,682.04	-247.11	1,683.68	3.07	2.55	1.70
13,892.00	90.50	3.30	12,312.70	1,775.68	-239.08	1,777.26	3.42	-0.32	-3.40
13,986.00	90.90	2.30	12,311.56	1,869.56	-234.49	1,871.11	1.15	0.43	-1.06
14,080.00	89.40	1.60	12,311.31	1,963.50	-231.29	1,965.03	1.76	-1.60	-0.74
14,174.00	87.90	359.10	12,313.53	2,057.46	-230.72	2,058.98	3.10	-1.60	-2.66
14,267.00	90.30	359.10	12,314.99	2,150.43	-232.18	2,151.96	2.58	2.58	0.00
14,362.00	93.80	359.80	12,311.59	2,245.35	-233.09	2,246.88	3.76	3.68	0.74
14,456.00	88.50	356.80	12,309.70	2,339.24	-235.88	2,340.80	6.48	-5.64	-3.19
14,549.00	87.80	355.60	12,312.70	2,431.99	-242.04	2,433.58	1.49	-0.75	-1.29
14,643.00	88.70	355.80	12,315.57	2,525.68	-249.08	2,527.32	0.98	0.96	0.21
14,737.00	88.90	355.10	12,317.54	2,619.36	-256.54	2,621.05	0.77	0.21	-0.74
14,832.00	91.10	355.80	12,317.54	2,714.06	-264.07	2,715.79	2.43	2.32	0.74
14,926.00	91.10	358.00	12,315.74	2,807.90	-269.16	2,809.66	2.34	0.00	2.34
15,020.00	90.60	0.50	12,314.34	2,901.87	-270.39	2,903.64	2.71	-0.53	2.66
15,115.00	87.00	0.50	12,316.33	2,996.83	-269.56	2,998.60	3.79	-3.79	0.00
15,210.00	89.10	0.70	12,319.57	3,091.76	-268.56	3,093.52	2.22	2.21	0.21
15,304.00	88.00	0.50	12,321.94	3,185.73	-267.58	3,187.48	1.19	-1.17	-0.21
15,398.00	85.90	359.80	12,326.95	3,279.59	-267.33	3,281.33	2.35	-2.23	-0.74
15,492.00	88.50	359.60	12,331.54	3,373.47	-267.82	3,375.21	2.77	2.77	-0.21
15,586.00	90.50	359.30	12,332.36	3,467.45	-268.73	3,469.20	2.15	2.13	-0.32
15,681.00	93.30	358.80	12,329.21	3,562.38	-270.30	3,564.14	2.99	2.95	-0.53
15,774.00	91.30	357.30	12,325.48	3,655.24	-273.46	3,657.02	2.69	-2.15	-1.61
15,869.00	90.00	0.00	12,324.40	3,750.20	-275.70	3,751.99	3.15	-1.37	2.84
15,964.00	90.60	358.90	12,323.90	3,845.19	-276.61	3,846.99	1.32	0.63	-1.16
16,059.00	92.10	358.00	12,321.66	3,940.13	-279.18	3,941.94	1.84	1.58	-0.95
16,152.00	90.60	356.50	12,319.47	4,032.99	-283.64	4,034.83	2.28	-1.61	-1.61
16,247.00	90.50	358.40	12,318.56	4,127.89	-287.87	4,129.75	2.00	-0.11	2.00
16,340.00	91.40	359.80	12,317.02	4,220.86	-289.33	4,222.73	1.79	0.97	1.51
16,434.00	91.10	3.00	12,314.97	4,314.80	-287.03	4,316.65	3.42	-0.32	3.40

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Flagler 8 Federal 3H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3446.9' GE + 23.5' KB @ 3470.40usft
Site:	Flagler 8 Federal	MD Reference:	3446.9' GE + 23.5' KB @ 3470.40usft
Well:	Flagler 8 Federal 3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User Db

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)
16,528.00	90.20	4.40	12,313.90	4,408.59	-280.97	4,410.40	1.77	-0.96	1.49
16,623.00	92.20	4.40	12,311.91	4,503.28	-273.68	4,505.04	2.11	2.11	0.00
16,717.00	89.40	4.70	12,310.60	4,596.97	-266.22	4,598.68	3.00	-2.98	0.32
16,811.00	86.50	4.70	12,313.96	4,690.58	-258.53	4,692.24	3.09	-3.09	0.00
16,905.00	87.90	3.80	12,318.55	4,784.21	-251.57	4,785.81	1.77	1.49	-0.96
17,000.00	91.70	2.30	12,318.88	4,879.06	-246.52	4,880.62	4.30	4.00	-1.58
17,094.00	90.40	1.20	12,317.16	4,972.99	-243.65	4,974.54	1.81	-1.38	-1.17
17,150.00	89.30	0.30	12,317.31	5,028.99	-242.91	5,030.52	2.54	-1.96	-1.61
17,198.00	89.30	0.30	12,317.89	5,076.98	-242.66	5,078.52	0.00	0.00	0.00
Projection									