



**NM OIL CONSERVATION
ARTESIA DISTRICT**

MAR 15 2018

RECEIVED

30.015-44121

June 8, 2017

Devon Energy Production Company, LP
Well: Agate PWU 21-22 61H
County/Parish: Eddy County, NM

LEAM MWD: (OH) from 451' MD – 18,349' MD
Projection: 18,540'

This Borehole Survey taken between 05/15/2017 and 06/04/2017 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: June 8, 2017



Survey Certification Form

State of New Mexico

Eddy County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Services, that I did on the day(s) of 05/15/2017 through 06/04/2017, conduct or supervise the taking of MWD Survey from a depth of 451' MD to 18,540' 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 Agate PWU 21-22 61H in Eddy 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 'RWR', is written over a solid horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 61H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3314.20' GE + 25' KB @ 3339.20usft
Site:	Agate PWU 21-22	MD Reference:	3314.20' GE + 25' KB @ 3339.20usft
Well:	61H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 MULTI User DB

Project	Eddy 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		Agate PWU 21-22			
Site Position:		Northing:	601,009.77 usft	Latitude:	32° 39' 7.149 N
From:	Map	Easting:	616,495.30 usft	Longitude:	104° 5' 20.890 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.13 °

Well		61H				
Well Position	+N/-S	0.00 usft	Northing:	599,684.33 usft	Latitude:	32° 38' 54.020 N
	+E/-W	0.00 usft	Easting:	617,058.59 usft	Longitude:	104° 5' 14.337 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,314.20 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/24/2017	7.47	60.52	48,225

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)	Direction (°)	
	0.00	0.00	0.00	90.00	

Survey Program	Date 6/13/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
120.00	300.00	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
451.00	8,439.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM
8,534.00	18,349.00	Survey #3 (OH)	MWD+IFR1+MS	MWD + IFR1 + Multi-Station Correction
18,540.00	18,540.00	Survey #4 (OH)	Project	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	
120.00	0.68	66.27	120.00	0.29	0.65	0.65	0.57	0.57	0.00	
180.00	0.68	65.16	179.99	0.58	1.30	1.30	0.02	0.00	-1.85	
240.00	0.70	65.70	239.99	0.88	1.96	1.96	0.04	0.03	0.90	
300.00	0.62	62.87	299.98	1.18	2.58	2.58	0.14	-0.13	-4.72	
451.00	0.60	21.80	450.98	2.29	3.60	3.60	0.28	-0.01	-27.20	
543.00	0.80	34.40	542.97	3.26	4.14	4.14	0.27	0.22	13.70	
636.00	0.80	23.20	635.96	4.39	4.77	4.77	0.17	0.00	-12.04	

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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)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
728.00	0.70	29.60	727.95	5.47	5.30	5.30	0.14	-0.11	6.96
820.00	1.10	37.50	819.94	6.66	6.11	6.11	0.45	0.43	8.59
912.00	1.00	52.50	911.93	7.85	7.29	7.29	0.32	-0.11	16.30
1,003.00	0.80	50.50	1,002.91	8.74	8.41	8.41	0.22	-0.22	-2.20
1,054.00	0.80	48.80	1,053.91	9.20	8.95	8.95	0.05	0.00	-3.33
1,146.00	0.70	47.70	1,145.90	10.00	9.85	9.85	0.11	-0.11	-1.20
1,238.00	0.88	48.55	1,237.89	10.85	10.79	10.79	0.20	0.20	0.92
1,330.00	0.75	42.22	1,329.88	11.76	11.73	11.73	0.17	-0.14	-6.88
1,426.00	0.70	53.21	1,425.88	12.58	12.62	12.62	0.15	-0.05	11.45
1,522.00	0.53	59.71	1,521.87	13.15	13.47	13.47	0.19	-0.18	6.77
1,617.00	0.48	61.91	1,616.87	13.56	14.20	14.20	0.06	-0.05	2.32
1,713.00	0.70	15.20	1,712.86	14.32	14.71	14.71	0.53	0.23	-48.66
1,808.00	1.30	344.90	1,807.85	15.92	14.58	14.58	0.82	0.63	-31.89
1,904.00	1.80	343.70	1,903.81	18.42	13.88	13.88	0.52	0.52	-1.25
2,000.00	2.50	338.90	1,999.74	21.82	12.70	12.70	0.75	0.73	-5.00
2,095.00	3.20	331.20	2,094.63	26.07	10.68	10.68	0.84	0.74	-8.11
2,191.00	3.60	329.30	2,190.46	31.01	7.85	7.85	0.43	0.42	-1.98
2,287.00	3.60	329.50	2,286.27	36.20	4.78	4.78	0.01	0.00	0.21
2,382.00	3.40	334.20	2,381.09	41.31	2.04	2.04	0.37	-0.21	4.95
2,477.00	3.70	334.20	2,475.91	46.60	-0.52	-0.52	0.32	0.32	0.00
2,573.00	4.10	335.00	2,571.69	52.50	-3.32	-3.32	0.42	0.42	0.83
2,669.00	3.90	334.40	2,667.45	58.56	-6.18	-6.18	0.21	-0.21	-0.63
2,764.00	3.90	330.50	2,762.23	64.28	-9.17	-9.17	0.28	0.00	-4.11
2,860.00	3.60	331.20	2,858.03	69.77	-12.23	-12.23	0.32	-0.31	0.73
2,955.00	4.00	328.20	2,952.82	75.20	-15.41	-15.41	0.47	0.42	-3.16
3,051.00	4.20	330.20	3,048.57	81.09	-18.92	-18.92	0.26	0.21	2.08
3,146.00	4.70	329.70	3,143.29	87.47	-22.62	-22.62	0.53	0.53	-0.53
3,242.00	5.70	332.20	3,238.89	95.08	-26.82	-26.82	1.07	1.04	2.60
3,337.00	6.30	334.10	3,333.37	103.95	-31.30	-31.30	0.67	0.63	2.00
3,396.00	6.40	333.90	3,392.01	109.81	-34.16	-34.16	0.17	0.17	-0.34
3,583.00	6.20	337.90	3,577.88	128.53	-42.55	-42.55	0.26	-0.11	2.14
3,679.00	5.80	336.40	3,673.35	137.77	-46.44	-46.44	0.45	-0.42	-1.56
3,774.00	6.40	336.40	3,767.81	147.03	-50.48	-50.48	0.63	0.63	0.00
3,870.00	6.00	336.00	3,863.25	156.51	-54.66	-54.66	0.42	-0.42	-0.42
3,966.00	6.30	337.50	3,958.70	165.96	-58.72	-58.72	0.35	0.31	1.56
4,061.00	7.00	341.40	4,053.06	176.26	-62.56	-62.56	0.88	0.74	4.11
4,157.00	7.30	345.10	4,148.31	187.70	-65.99	-65.99	0.57	0.31	3.85
4,253.00	7.30	345.40	4,243.54	199.50	-69.10	-69.10	0.04	0.00	0.31
4,348.00	7.30	342.70	4,337.77	211.10	-72.42	-72.42	0.36	0.00	-2.84
4,444.00	7.10	342.30	4,433.01	222.58	-76.03	-76.03	0.21	-0.21	-0.42
4,540.00	7.60	342.40	4,528.22	234.28	-79.76	-79.76	0.52	0.52	0.10
4,635.00	6.90	349.10	4,622.46	245.87	-82.74	-82.74	1.15	-0.74	7.05
4,731.00	6.40	349.40	4,717.82	256.79	-84.81	-84.81	0.52	-0.52	0.31

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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4,827.00	6.50	341.90	4,813.21	267.22	-87.48	-87.48	0.88	0.10	-7.81	
4,873.00	6.40	341.80	4,858.92	272.13	-89.09	-89.09	0.22	-0.22	-0.22	
5,018.00	6.30	345.00	5,003.03	287.49	-93.68	-93.68	0.25	-0.07	2.21	
5,113.00	6.90	341.70	5,097.40	297.94	-96.82	-96.82	0.75	0.63	-3.47	
5,209.00	6.50	342.10	5,192.74	308.59	-100.30	-100.30	0.42	-0.42	0.42	
5,305.00	5.80	341.00	5,288.19	318.35	-103.55	-103.55	0.74	-0.73	-1.15	
5,400.00	5.40	346.30	5,382.74	327.23	-106.17	-106.17	0.69	-0.42	5.58	
5,496.00	5.60	348.90	5,478.30	336.21	-108.14	-108.14	0.33	0.21	2.71	
5,542.00	5.50	348.60	5,524.08	340.58	-109.01	-109.01	0.23	-0.22	-0.65	
5,687.00	5.60	347.90	5,668.40	354.31	-111.86	-111.86	0.08	0.07	-0.48	
5,783.00	6.10	347.60	5,763.90	363.87	-113.94	-113.94	0.52	0.52	-0.31	
5,878.00	6.80	339.20	5,858.30	374.06	-117.02	-117.02	1.23	0.74	-8.84	
5,974.00	6.50	338.20	5,953.65	384.41	-121.06	-121.06	0.33	-0.31	-1.04	
6,070.00	5.60	336.20	6,049.12	393.74	-124.97	-124.97	0.96	-0.94	-2.08	
6,165.00	5.70	335.90	6,143.66	402.29	-128.76	-128.76	0.11	0.11	-0.32	
6,261.00	5.80	337.10	6,239.17	411.11	-132.60	-132.60	0.16	0.10	1.25	
6,356.00	6.50	348.70	6,333.63	420.81	-135.52	-135.52	1.50	0.74	12.21	
6,452.00	6.20	343.60	6,429.04	431.11	-138.05	-138.05	0.67	-0.31	-5.31	
6,548.00	6.30	344.40	6,524.47	441.16	-140.93	-140.93	0.14	0.10	0.83	
6,595.00	6.20	347.70	6,571.19	446.12	-142.16	-142.16	0.79	-0.21	7.02	
6,690.00	4.00	346.20	6,665.81	454.35	-144.05	-144.05	2.32	-2.32	-1.58	
6,822.00	2.30	325.50	6,797.61	461.00	-146.64	-146.64	1.53	-1.29	-15.68	
6,918.00	4.00	317.20	6,893.46	465.05	-150.01	-150.01	1.83	1.77	-8.65	
7,014.00	5.50	332.30	6,989.13	471.58	-154.42	-154.42	2.02	1.56	15.73	
7,109.00	6.50	340.10	7,083.61	480.67	-158.37	-158.37	1.36	1.05	8.21	
7,205.00	6.00	340.60	7,179.04	490.51	-161.89	-161.89	0.52	-0.52	0.52	
7,300.00	6.50	336.90	7,273.48	500.14	-165.65	-165.65	0.68	0.53	-3.89	
7,396.00	5.70	339.60	7,368.93	509.61	-169.44	-169.44	0.89	-0.83	2.81	
7,492.00	6.10	339.70	7,464.43	518.86	-172.87	-172.87	0.42	0.42	0.10	
7,587.00	4.80	341.70	7,558.99	527.37	-175.87	-175.87	1.38	-1.37	2.11	
7,683.00	4.30	341.80	7,654.69	534.60	-178.26	-178.26	0.52	-0.52	0.10	
7,778.00	3.40	338.40	7,749.48	540.60	-180.41	-180.41	0.98	-0.95	-3.58	
7,874.00	3.10	331.20	7,845.32	545.52	-182.70	-182.70	0.53	-0.31	-7.50	
7,970.00	1.90	314.90	7,941.23	548.92	-185.08	-185.08	1.44	-1.25	-16.98	
8,052.00	1.50	291.50	8,023.19	550.27	-187.04	-187.04	0.97	-0.49	-28.54	
8,104.00	1.40	305.60	8,075.18	550.89	-188.19	-188.19	0.71	-0.19	27.12	
8,200.00	0.90	281.60	8,171.16	551.73	-189.89	-189.89	0.71	-0.52	-25.00	
8,295.00	0.20	188.50	8,266.16	551.71	-190.64	-190.64	0.98	-0.74	-98.00	
8,391.00	1.10	128.10	8,362.15	550.98	-189.94	-189.94	1.06	0.94	-62.92	
8,439.00	1.70	136.70	8,410.13	550.18	-189.09	-189.09	1.32	1.25	17.92	
8,534.00	11.10	84.30	8,504.47	550.06	-179.00	-179.00	10.69	9.89	-55.16	
8,582.00	15.20	80.40	8,551.20	551.57	-168.19	-168.19	8.73	8.54	-8.13	
8,630.00	17.00	85.00	8,597.32	553.23	-154.99	-154.99	4.59	3.75	9.58	
8,677.00	21.20	80.90	8,641.73	555.17	-139.75	-139.75	9.38	8.94	-8.72	

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8,725.00	25.30	76.80	8,685.82	558.89	-121.19	-121.19	9.18	8.54	-8.54
8,763.00	28.29	75.33	8,719.74	563.02	-104.57	-104.57	8.06	7.87	-3.87
8,810.00	35.35	70.75	8,759.65	570.34	-80.92	-80.92	15.87	15.02	-9.74
8,858.00	41.15	71.27	8,797.33	580.00	-52.83	-52.83	12.10	12.08	1.08
8,890.00	47.10	68.22	8,820.30	587.73	-31.96	-31.96	19.74	18.59	-9.53
8,922.00	51.18	70.67	8,841.23	596.21	-9.30	-9.30	14.00	12.75	7.66
8,954.00	55.12	69.29	8,860.42	604.98	14.75	14.75	12.79	12.31	-4.31
8,986.00	61.01	69.22	8,877.34	614.60	40.14	40.14	18.41	18.41	-0.22
9,018.00	65.83	70.93	8,891.65	624.34	67.04	67.04	15.80	15.06	5.34
9,049.00	70.34	72.77	8,903.22	633.29	94.36	94.36	15.55	14.55	5.94
9,081.00	75.53	74.94	8,912.61	641.79	123.73	123.73	17.47	16.22	6.78
9,113.00	79.97	77.58	8,919.40	649.20	154.10	154.10	16.05	13.88	8.25
9,155.00	84.72	80.77	8,924.99	657.01	194.97	194.97	13.58	11.31	7.60
9,187.00	86.64	84.54	8,927.40	661.09	226.61	226.61	13.19	6.00	11.78
9,219.00	87.68	84.58	8,928.99	664.12	258.43	258.43	3.25	3.25	0.13
9,251.00	88.12	84.72	8,930.16	667.10	290.27	290.27	1.44	1.38	0.44
9,282.00	90.00	86.03	8,930.67	669.60	321.16	321.16	7.39	6.06	4.23
9,314.00	91.21	86.85	8,930.33	671.59	353.10	353.10	4.57	3.78	2.56
9,346.00	92.12	88.92	8,929.40	672.77	385.06	385.06	7.06	2.84	6.47
9,409.00	93.30	89.64	8,926.42	673.56	447.98	447.98	2.19	1.87	1.14
9,505.00	92.45	91.33	8,921.61	672.75	543.85	543.85	1.97	-0.89	1.76
9,600.00	91.95	92.55	8,917.96	669.53	638.73	638.73	1.39	-0.53	1.28
9,695.00	89.06	93.22	8,917.12	664.75	733.59	733.59	3.12	-3.04	0.71
9,790.00	89.63	93.78	8,918.21	658.95	828.41	828.41	0.84	0.60	0.59
9,886.00	88.22	93.77	8,920.01	652.63	924.18	924.18	1.47	-1.47	-0.01
9,981.00	89.16	92.33	8,922.18	647.58	1,019.02	1,019.02	1.81	0.99	-1.52
10,021.00	89.47	92.17	8,922.66	646.01	1,058.98	1,058.98	0.87	0.78	-0.40
10,116.00	90.18	92.69	8,922.95	641.98	1,153.90	1,153.90	0.93	0.75	0.55
10,211.00	90.14	91.87	8,922.68	638.20	1,248.82	1,248.82	0.86	-0.04	-0.86
10,304.00	88.40	92.53	8,923.87	634.63	1,341.74	1,341.74	2.00	-1.87	0.71
10,396.00	86.81	87.98	8,927.72	634.22	1,433.63	1,433.63	5.23	-1.73	-4.95
10,489.00	84.36	87.29	8,934.87	638.05	1,526.27	1,526.27	2.74	-2.63	-0.74
10,581.00	84.65	87.42	8,943.68	642.27	1,617.75	1,617.75	0.35	0.32	0.14
10,674.00	85.88	87.33	8,951.36	646.52	1,710.33	1,710.33	1.33	1.32	-0.10
10,765.00	87.52	88.97	8,956.60	649.45	1,801.13	1,801.13	2.55	1.80	1.80
10,856.00	88.03	89.42	8,960.13	650.73	1,892.05	1,892.05	0.75	0.56	0.49
10,947.00	88.86	89.20	8,962.60	651.82	1,983.01	1,983.01	0.94	0.91	-0.24
11,039.00	89.40	89.48	8,964.00	652.88	2,074.99	2,074.99	0.66	0.59	0.30
11,131.00	90.01	91.75	8,964.47	651.89	2,166.98	2,166.98	2.55	0.66	2.47
11,224.00	90.69	91.68	8,963.90	649.11	2,259.93	2,259.93	0.74	0.73	-0.08
11,314.00	91.33	91.93	8,962.32	646.28	2,349.87	2,349.87	0.76	0.71	0.28
11,405.00	92.11	92.04	8,959.59	643.13	2,440.78	2,440.78	0.87	0.86	0.12
11,498.00	91.89	92.59	8,956.34	639.37	2,533.65	2,533.65	0.64	-0.24	0.59

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 61H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3314.20' GE + 25' KB @ 3339.20usft
Site:	Agate PWU 21-22	MD Reference:	3314.20' GE + 25' KB @ 3339.20usft
Well:	61H	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)
11,590.00	91.66	91.68	8,953.49	635.95	2,625.54	2,625.54	1.02	-0.25	-0.99
11,685.00	90.33	90.99	8,951.84	633.73	2,720.49	2,720.49	1.58	-1.40	-0.73
11,780.00	89.51	92.10	8,951.97	631.17	2,815.46	2,815.46	1.45	-0.86	1.17
11,875.00	88.98	88.50	8,953.23	630.67	2,910.43	2,910.43	3.83	-0.56	-3.79
11,971.00	89.73	91.01	8,954.31	631.09	3,006.42	3,006.42	2.73	0.78	2.61
12,066.00	89.39	87.00	8,955.04	632.73	3,101.38	3,101.38	4.24	-0.36	-4.22
12,161.00	89.18	88.26	8,956.22	636.66	3,196.29	3,196.29	1.34	-0.22	1.33
12,256.00	89.90	88.77	8,956.99	639.12	3,291.25	3,291.25	0.93	0.76	0.54
12,352.00	90.81	88.62	8,956.39	641.31	3,387.23	3,387.23	0.96	0.95	-0.16
12,447.00	89.72	90.47	8,955.95	642.06	3,482.22	3,482.22	2.26	-1.15	1.95
12,542.00	88.89	91.86	8,957.10	640.13	3,577.19	3,577.19	1.70	-0.87	1.46
12,637.00	89.57	92.51	8,958.38	636.51	3,672.11	3,672.11	0.99	0.72	0.68
12,733.00	88.52	93.31	8,959.98	631.64	3,767.97	3,767.97	1.37	-1.09	0.83
12,828.00	88.61	93.72	8,962.36	625.82	3,862.76	3,862.76	0.44	0.09	0.43
12,923.00	88.51	92.95	8,964.75	620.29	3,957.57	3,957.57	0.82	-0.11	-0.81
13,018.00	89.50	92.32	8,966.40	615.93	4,052.45	4,052.45	1.24	1.04	-0.66
13,113.00	91.56	92.21	8,965.52	612.17	4,147.37	4,147.37	2.17	2.17	-0.12
13,208.00	91.97	91.17	8,962.59	609.37	4,242.28	4,242.28	1.18	0.43	-1.09
13,303.00	92.48	90.30	8,958.90	608.15	4,337.20	4,337.20	1.06	0.54	-0.92
13,398.00	91.11	90.20	8,955.93	607.74	4,432.15	4,432.15	1.45	-1.44	-0.11
13,493.00	89.55	90.62	8,955.38	607.06	4,527.14	4,527.14	1.70	-1.64	0.44
13,588.00	90.08	90.78	8,955.69	605.90	4,622.13	4,622.13	0.58	0.56	0.17
13,684.00	90.87	91.10	8,954.89	604.32	4,718.12	4,718.12	0.89	0.82	0.33
13,779.00	91.69	91.56	8,952.77	602.12	4,813.07	4,813.07	0.99	0.86	0.48
13,874.00	90.73	90.89	8,950.76	600.09	4,908.02	4,908.02	1.23	-1.01	-0.71
13,910.00	90.36	90.87	8,950.42	599.54	4,944.02	4,944.02	1.02	-1.02	-0.06
SL Crossing - 13910' MD									
13,969.00	89.76	90.83	8,950.36	598.66	5,003.01	5,003.01	1.02	-1.02	-0.06
14,065.00	90.61	91.19	8,950.05	596.97	5,098.99	5,098.99	0.96	0.89	0.38
14,160.00	91.27	91.57	8,948.49	594.68	5,193.95	5,193.95	0.80	0.69	0.40
14,255.00	90.12	91.23	8,947.34	592.36	5,288.92	5,288.92	1.26	-1.21	-0.36
14,350.00	90.89	91.54	8,946.50	590.07	5,383.88	5,383.88	0.87	0.81	0.33
14,446.00	91.83	91.71	8,944.22	587.34	5,479.82	5,479.82	1.00	0.98	0.18
14,541.00	90.70	92.78	8,942.12	583.62	5,574.72	5,574.72	1.64	-1.19	1.13
14,636.00	91.78	92.19	8,940.07	579.51	5,669.60	5,669.60	1.30	1.14	-0.62
14,732.00	91.21	91.78	8,937.56	576.18	5,765.51	5,765.51	0.73	-0.59	-0.43
14,827.00	90.51	91.83	8,936.14	573.19	5,860.45	5,860.45	0.74	-0.74	0.05
14,922.00	89.32	92.09	8,936.28	569.94	5,955.40	5,955.40	1.28	-1.25	0.27
15,017.00	87.84	91.33	8,938.63	567.11	6,050.32	6,050.32	1.75	-1.56	-0.80
15,112.00	87.84	90.16	8,942.21	565.87	6,145.24	6,145.24	1.23	0.00	-1.23
15,207.00	88.43	90.14	8,945.30	565.62	6,240.19	6,240.19	0.62	0.62	-0.02
15,302.00	88.86	93.86	8,947.55	562.31	6,335.09	6,335.09	3.94	0.45	3.92
15,398.00	89.58	90.11	8,948.86	558.99	6,431.01	6,431.01	3.98	0.75	-3.91

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 61H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3314.20' GE + 25' KB @ 3339.20usft
Site:	Agate PWU 21-22	MD Reference:	3314.20' GE + 25' KB @ 3339.20usft
Well:	61H	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)
15,493.00	88.97	88.52	8,950.06	560.12	6,525.99	6,525.99	1.79	-0.64	-1.67
15,588.00	90.15	88.71	8,950.79	562.42	6,620.96	6,620.96	1.26	1.24	0.20
15,683.00	88.18	88.07	8,952.17	565.09	6,715.91	6,715.91	2.18	-2.07	-0.67
15,778.00	87.82	88.35	8,955.49	568.05	6,810.80	6,810.80	0.48	-0.38	0.29
15,873.00	88.48	88.46	8,958.56	570.69	6,905.71	6,905.71	0.70	0.69	0.12
15,969.00	87.69	89.59	8,961.77	572.33	7,001.64	7,001.64	1.44	-0.82	1.18
16,064.00	87.30	90.22	8,965.92	572.48	7,096.55	7,096.55	0.78	-0.41	0.66
16,159.00	87.95	90.21	8,969.85	572.13	7,191.47	7,191.47	0.68	0.68	-0.01
16,254.00	88.00	90.88	8,973.21	571.23	7,286.41	7,286.41	0.71	0.05	0.71
16,349.00	88.61	90.78	8,976.02	569.85	7,381.35	7,381.35	0.65	0.64	-0.11
16,444.00	89.60	91.11	8,977.51	568.28	7,476.33	7,476.33	1.10	1.04	0.35
16,539.00	90.68	91.20	8,977.27	566.37	7,571.31	7,571.31	1.14	1.14	0.09
16,634.00	90.20	92.63	8,976.54	563.19	7,666.25	7,666.25	1.59	-0.51	1.51
16,729.00	89.01	92.78	8,977.20	558.71	7,761.14	7,761.14	1.26	-1.25	0.16
16,825.00	87.30	93.46	8,980.29	553.49	7,856.94	7,856.94	1.92	-1.78	0.71
16,920.00	88.26	94.07	8,983.97	547.26	7,951.66	7,951.66	1.20	1.01	0.64
17,015.00	88.19	92.23	8,986.91	542.04	8,046.47	8,046.47	1.94	-0.07	-1.94
17,110.00	88.69	90.84	8,989.50	539.49	8,141.40	8,141.40	1.55	0.53	-1.46
17,205.00	88.13	89.57	8,992.13	539.15	8,236.36	8,236.36	1.46	-0.59	-1.34
17,301.00	86.11	89.21	8,996.96	540.17	8,332.23	8,332.23	2.14	-2.10	-0.38
17,396.00	86.42	89.06	9,003.15	541.61	8,427.02	8,427.02	0.36	0.33	-0.16
17,491.00	86.77	88.95	9,008.79	543.25	8,521.83	8,521.83	0.39	0.37	-0.12
17,586.00	87.03	88.69	9,013.93	545.21	8,616.67	8,616.67	0.39	0.27	-0.27
17,681.00	87.16	88.85	9,018.74	547.24	8,711.53	8,711.53	0.22	0.14	0.17
17,776.00	87.60	88.98	9,023.08	549.04	8,806.41	8,806.41	0.48	0.46	0.14
17,871.00	88.57	90.28	9,026.26	549.65	8,901.36	8,901.36	1.71	1.02	1.37
17,966.00	89.04	89.15	9,028.24	550.13	8,996.33	8,996.33	1.29	0.49	-1.19
18,117.00	88.87	91.22	9,030.99	549.64	9,147.30	9,147.30	1.38	-0.11	1.37
18,212.00	89.41	88.04	9,032.42	550.25	9,242.27	9,242.27	3.39	0.57	-3.35
18,308.00	90.17	87.72	9,032.77	553.80	9,338.21	9,338.21	0.86	0.79	-0.33
18,349.00	90.40	88.41	9,032.57	555.19	9,379.18	9,379.18	1.77	0.56	1.68
18,540.00	90.40	88.41	9,031.23	560.49	9,570.10	9,570.10	0.00	0.00	0.00
Projection									