



Survey Certification Form

30-015-44363

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 11/18/2017 through 12/02/2017, conduct or supervise the taking of MWD Survey from a depth of 242' MD to 18,818' 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 ~~Onyx PWU 29-28-10H~~ 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 'Randy W. Rakowitz', is written over a solid horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator



December 5, 2017

Devon Energy Production Company, LP
Well: Onyx PWU 29-28 10H
County/Parish: Eddy County, NM

LEAM MWD: (OH) from 242' MD – 18744' MD
Projection; 18,818' MD

This Borehole Survey taken between 11/18/2017 and 12/02/2017 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: December 5, 2017



December 5, 2017

**Devon Energy Corporation
20 N. Broadway
Oklahoma City, Oklahoma 73102**

Attn: Ian Norwalk

**Re: Final Directional Report
Onyx PWU 29-28 10H
Eddy County, NM**

Mr. Norwalk,

Included in this report are a directional comparison plot and final survey report, daily directional drilling reports, and final BHA reports.

The report covers the following:

LEAM Job #: MD-170899 for the (OH) from November 18, 2017 to December 02, 2017;
Drilling start depth of 242' MD to 18,818' total MD.

We appreciate you giving LEAM Drilling Services the opportunity of doing business with you and look forward to working with you in the future.

Regards,

Nora Tucker
Well Planner - Manager

LEAM Drilling Services

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 10H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3309.0' GE + 23.5' KB @ 3332.50usft
Site:	Onyx PWU 29-28	MD Reference:	3309.0' GE + 23.5' KB @ 3332.50usft
Well:	10H	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		Onyx PWU 29-28			
Site Position:		Northing:	596,305.26 usft	Latitude:	32° 38' 20.7014 N
From:	Map	Easting:	611,703.20 usft	Longitude:	104° 6' 17.0602 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	10H					
Well Position	+N/-S	0.00 usft	Northing:	594,630.49 usft	Latitude:	32° 38' 4.1279 N
	+E/-W	0.00 usft	Easting:	611,754.97 usft	Longitude:	104° 6' 16.4969 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,309.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/26/2017	7.43	60.50	48,199

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	12/5/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.00	140.00	Survey #1 (OH)	GYRO		
242.00	9,270.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM	
9,317.00	18,744.00	Survey #3 - 6 Axis (OH)	MWD+IFR1+MS	MWD + IFR1 + Multi-Station Correction	
18,818.00	18,818.00	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	
50.00	0.32	5.24	50.00	0.14	0.01	0.01	0.64	0.64	0.00	
100.00	0.31	37.60	100.00	0.39	0.11	0.11	0.35	-0.02	64.72	
140.00	0.57	15.12	140.00	0.66	0.23	0.23	0.77	0.65	-56.20	
242.00	1.00	306.00	241.99	1.68	-0.36	-0.36	0.94	0.42	-67.76	
341.00	1.00	290.00	340.98	2.48	-1.87	-1.87	0.28	0.00	-16.16	
439.00	0.90	284.70	438.96	2.97	-3.42	-3.42	0.14	-0.10	-5.41	
529.00	0.80	287.50	528.95	3.34	-4.70	-4.70	0.12	-0.11	3.11	

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 10H
TVD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
MD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
622.00	0.70	289.40	621.94	3.72	-5.86	-5.86	0.11	-0.11	2.04
713.00	0.40	302.80	712.94	4.08	-6.65	-6.65	0.36	-0.33	14.73
804.00	0.20	58.70	803.94	4.34	-6.78	-6.78	0.57	-0.22	125.16
895.00	0.60	85.53	894.94	4.46	-6.18	-6.18	0.48	0.44	31.68
985.00	0.60	73.60	984.93	4.63	-5.25	-5.25	0.14	0.00	-13.26
1,076.00	0.40	62.30	1,075.93	4.91	-4.52	-4.52	0.24	-0.22	-12.42
1,168.00	0.40	56.50	1,167.93	5.24	-3.96	-3.96	0.04	0.00	-6.30
1,260.00	0.40	21.90	1,259.92	5.71	-3.58	-3.58	0.26	0.00	-37.61
1,351.00	0.40	3.60	1,350.92	6.33	-3.44	-3.44	0.14	0.00	-20.11
1,442.00	0.60	351.00	1,441.92	7.11	-3.49	-3.49	0.25	0.22	-13.85
1,534.00	0.40	284.00	1,533.92	7.67	-3.88	-3.88	0.63	-0.22	-72.83
1,626.00	1.10	237.90	1,625.91	7.27	-4.94	-4.94	0.95	0.76	-50.11
1,722.00	1.00	239.30	1,721.89	6.36	-6.44	-6.44	0.11	-0.10	1.46
1,817.00	0.60	237.80	1,816.88	5.67	-7.57	-7.57	0.42	-0.42	-1.58
1,913.00	0.70	211.90	1,912.88	4.90	-8.31	-8.31	0.32	0.10	-26.98
2,008.00	0.90	203.70	2,007.87	3.73	-8.92	-8.92	0.24	0.21	-8.63
2,104.00	1.20	190.50	2,103.85	2.05	-9.40	-9.40	0.40	0.31	-13.75
2,199.00	1.60	188.40	2,198.82	-0.24	-9.78	-9.78	0.42	0.42	-2.21
2,295.00	2.20	188.50	2,294.77	-3.39	-10.25	-10.25	0.63	0.63	0.10
2,391.00	3.20	193.60	2,390.66	-7.82	-11.15	-11.15	1.07	1.04	5.31
2,486.00	3.90	200.70	2,485.48	-13.42	-12.91	-12.91	0.87	0.74	7.47
2,582.00	4.60	204.90	2,581.21	-19.96	-15.69	-15.69	0.80	0.73	4.38
2,677.00	5.60	203.70	2,675.84	-27.66	-19.15	-19.15	1.06	1.05	-1.26
2,773.00	6.40	204.20	2,771.31	-36.83	-23.23	-23.23	0.84	0.83	0.52
2,868.00	6.60	207.00	2,865.70	-46.53	-27.88	-27.88	0.39	0.21	2.95
2,964.00	6.30	206.10	2,961.09	-56.17	-32.70	-32.70	0.33	-0.31	-0.94
3,060.00	6.30	207.00	3,056.51	-65.59	-37.41	-37.41	0.10	0.00	0.94
3,155.00	6.30	209.30	3,150.94	-74.78	-42.33	-42.33	0.27	0.00	2.42
3,251.00	6.30	210.20	3,246.36	-83.93	-47.56	-47.56	0.10	0.00	0.94
3,346.00	6.30	204.70	3,340.79	-93.17	-52.36	-52.36	0.64	0.00	-5.79
3,441.00	6.20	204.00	3,435.22	-102.59	-56.62	-56.62	0.13	-0.11	-0.74
3,452.00	6.20	205.00	3,446.16	-103.67	-57.11	-57.11	0.98	0.00	9.09
3,526.00	6.10	207.20	3,519.73	-110.79	-60.60	-60.60	0.35	-0.14	2.97
3,621.00	5.30	208.40	3,614.26	-119.14	-64.99	-64.99	0.85	-0.84	1.26
3,717.00	5.50	212.40	3,709.84	-126.93	-69.57	-69.57	0.44	0.21	4.17
3,812.00	7.00	213.00	3,804.27	-135.62	-75.16	-75.16	1.58	1.58	0.63
3,908.00	6.50	215.10	3,899.60	-144.98	-81.47	-81.47	0.58	-0.52	2.19
4,003.00	5.20	213.10	3,994.11	-152.98	-86.91	-86.91	1.38	-1.37	-2.11
4,099.00	5.30	212.80	4,089.70	-160.35	-91.69	-91.69	0.11	0.10	-0.31
4,194.00	5.70	207.00	4,184.27	-168.25	-96.21	-96.21	0.72	0.42	-6.11
4,290.00	6.40	203.30	4,279.73	-177.41	-100.49	-100.49	0.83	0.73	-3.85
4,386.00	5.20	203.00	4,375.24	-186.33	-104.31	-104.31	1.25	-1.25	-0.31
4,481.00	5.50	206.30	4,469.82	-194.37	-108.01	-108.01	0.45	0.32	3.47

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 10H
TVD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
MD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
4,577.00	6.40	203.30	4,565.31	-203.41	-112.16	-112.16	0.99	0.94	-3.13
4,672.00	6.20	207.50	4,659.73	-212.82	-116.62	-116.62	0.53	-0.21	4.42
4,767.00	7.30	204.70	4,754.07	-222.86	-121.51	-121.51	1.21	1.16	-2.95
4,863.00	6.80	207.50	4,849.35	-233.44	-126.69	-126.69	0.63	-0.52	2.92
4,959.00	6.00	206.80	4,944.75	-242.96	-131.57	-131.57	0.84	-0.83	-0.73
5,054.00	6.30	203.30	5,039.20	-252.18	-135.87	-135.87	0.51	0.32	-3.68
5,150.00	5.80	204.00	5,134.67	-261.45	-139.93	-139.93	0.53	-0.52	0.73
5,246.00	6.40	202.80	5,230.12	-270.81	-143.98	-143.98	0.64	0.63	-1.25
5,341.00	5.80	201.90	5,324.58	-280.15	-147.82	-147.82	0.64	-0.63	-0.95
5,437.00	5.10	205.60	5,420.15	-288.49	-151.47	-151.47	0.82	-0.73	3.85
5,532.00	6.10	207.70	5,514.70	-296.77	-155.64	-155.64	1.07	1.05	2.21
5,628.00	5.30	211.20	5,610.22	-305.08	-160.31	-160.31	0.91	-0.83	3.65
5,723.00	5.10	209.80	5,704.83	-312.50	-164.68	-164.68	0.25	-0.21	-1.47
5,819.00	5.90	205.10	5,800.39	-320.67	-168.90	-168.90	0.96	0.83	-4.90
5,914.00	6.30	205.20	5,894.85	-329.81	-173.19	-173.19	0.42	0.42	0.11
6,010.00	5.50	205.20	5,990.34	-338.74	-177.39	-177.39	0.83	-0.83	0.00
6,106.00	6.10	200.70	6,085.85	-347.67	-181.15	-181.15	0.78	0.63	-4.69
6,201.00	6.00	202.80	6,180.32	-356.97	-184.86	-184.86	0.26	-0.11	2.21
6,297.00	6.10	201.20	6,275.79	-366.35	-188.65	-188.65	0.20	0.10	-1.67
6,392.00	6.30	207.00	6,370.23	-375.70	-192.84	-192.84	0.69	0.21	6.11
6,488.00	6.90	208.60	6,465.59	-385.48	-197.99	-197.99	0.65	0.63	1.67
6,583.00	7.80	208.10	6,559.81	-396.15	-203.76	-203.76	0.95	0.95	-0.53
6,679.00	5.90	210.50	6,655.12	-406.15	-209.33	-209.33	2.00	-1.98	2.50
6,774.00	6.50	205.40	6,749.57	-415.22	-214.12	-214.12	0.86	0.63	-5.37
6,870.00	5.90	206.50	6,845.01	-424.54	-218.65	-218.65	0.64	-0.63	1.15
6,966.00	6.20	202.80	6,940.47	-433.74	-222.86	-222.86	0.51	0.31	-3.85
7,061.00	5.30	198.60	7,034.99	-442.62	-226.25	-226.25	1.05	-0.95	-4.42
7,157.00	5.90	202.10	7,130.53	-451.40	-229.52	-229.52	0.72	0.63	3.65
7,252.00	5.60	206.80	7,225.06	-460.06	-233.44	-233.44	0.59	-0.32	4.95
7,349.00	5.90	204.70	7,321.57	-468.81	-237.66	-237.66	0.38	0.31	-2.16
7,444.00	5.90	203.10	7,416.07	-477.74	-241.62	-241.62	0.17	0.00	-1.68
7,539.00	4.70	203.70	7,510.66	-485.79	-245.10	-245.10	1.26	-1.26	0.63
7,634.00	4.00	205.10	7,605.38	-492.36	-248.07	-248.07	0.75	-0.74	1.47
7,730.00	3.60	207.70	7,701.17	-498.06	-250.89	-250.89	0.45	-0.42	2.71
7,825.00	2.90	200.70	7,796.02	-502.95	-253.12	-253.12	0.85	-0.74	-7.37
7,921.00	2.80	200.50	7,891.90	-507.42	-254.80	-254.80	0.10	-0.10	-0.21
8,017.00	1.70	183.10	7,987.83	-511.03	-255.70	-255.70	1.34	-1.15	-18.13
8,112.00	1.80	131.60	8,082.79	-513.43	-254.66	-254.66	1.60	0.11	-54.21
8,208.00	3.00	105.40	8,178.70	-515.10	-251.11	-251.11	1.66	1.25	-27.29
8,265.00	2.42	102.91	8,235.64	-515.77	-248.50	-248.50	1.04	-1.02	-4.37
8,360.00	9.69	83.08	8,330.05	-515.25	-238.60	-238.60	7.85	7.65	-20.87
8,455.00	20.41	84.40	8,421.66	-512.66	-214.10	-214.10	11.29	11.28	1.39
8,503.00	25.92	82.47	8,465.78	-510.47	-195.36	-195.36	11.59	11.48	-4.02
8,551.00	27.65	81.97	8,508.62	-507.54	-173.93	-173.93	3.63	3.60	-1.04

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 10H
TVD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
MD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
8,599.00	31.34	85.10	8,550.40	-504.92	-150.45	-150.45	8.33	7.69	6.52
8,646.00	35.64	88.56	8,589.59	-503.53	-124.57	-124.57	10.01	9.15	7.36
8,694.00	40.10	91.35	8,627.47	-503.54	-95.12	-95.12	9.95	9.29	5.81
8,742.00	44.87	92.83	8,662.86	-504.74	-62.73	-62.73	10.15	9.94	3.08
8,790.00	48.65	94.25	8,695.74	-508.91	-27.84	-27.84	8.16	7.88	2.96
8,838.00	53.05	93.72	8,726.04	-509.49	9.28	9.28	9.21	9.17	-1.10
8,856.22	55.03	93.56	8,736.74	-510.43	24.00	24.00	10.87	10.85	-0.91
HL Crossing - 8856.22' MD, 8736.74' TVD									
8,885.00	58.15	93.31	8,752.58	-511.87	47.98	47.98	10.87	10.85	-0.85
8,933.00	64.41	91.38	8,775.64	-513.57	90.02	90.02	13.51	13.04	-4.02
8,981.00	69.83	90.46	8,794.29	-514.27	134.22	134.22	11.43	11.29	-1.92
9,029.00	72.21	90.24	8,809.80	-514.55	179.60	179.60	4.98	4.86	-0.46
9,077.00	75.43	89.53	8,823.28	-514.45	225.69	225.69	6.86	6.71	-1.48
9,127.00	78.95	88.79	8,834.36	-513.73	274.44	274.44	7.19	7.04	-1.48
9,175.00	82.45	89.28	8,842.12	-512.94	321.79	321.79	7.36	7.29	1.02
9,222.00	84.01	89.36	8,847.66	-512.38	368.46	368.46	3.32	3.32	0.17
9,270.00	87.41	89.78	8,851.25	-512.02	416.32	416.32	7.14	7.08	0.88
9,317.00	89.49	89.96	8,852.52	-511.82	463.30	463.30	4.44	4.43	0.38
9,365.00	88.40	89.57	8,853.40	-511.72	511.29	511.29	2.41	-2.27	-0.81
9,412.00	88.62	89.35	8,854.63	-511.28	558.27	558.27	0.66	0.47	-0.47
9,507.00	88.82	88.94	8,856.75	-509.86	653.23	653.23	0.48	0.21	-0.43
9,603.00	88.96	89.51	8,858.61	-508.56	749.21	749.21	0.61	0.15	0.59
9,698.00	89.09	89.80	8,860.22	-507.99	844.19	844.19	0.33	0.14	0.31
9,794.00	88.93	89.27	8,861.88	-507.21	940.17	940.17	0.58	-0.17	-0.55
9,890.00	88.56	90.63	8,863.99	-507.13	1,036.15	1,036.15	1.47	-0.39	1.42
9,985.00	88.72	91.04	8,866.24	-508.51	1,131.11	1,131.11	0.46	0.17	0.43
10,081.00	88.49	90.67	8,868.58	-509.94	1,227.07	1,227.07	0.45	-0.24	-0.39
10,176.00	88.29	90.41	8,871.25	-510.84	1,322.03	1,322.03	0.35	-0.21	-0.27
10,272.00	87.82	89.90	8,874.51	-511.10	1,417.97	1,417.97	0.72	-0.49	-0.53
10,367.00	89.30	90.68	8,876.89	-511.58	1,512.94	1,512.94	1.76	1.56	0.82
10,463.00	89.80	91.21	8,877.65	-513.16	1,608.92	1,608.92	0.76	0.52	0.55
10,558.00	89.93	91.49	8,877.87	-515.40	1,703.90	1,703.90	0.32	0.14	0.29
10,654.00	90.20	91.95	8,877.76	-518.28	1,799.85	1,799.85	0.56	0.28	0.48
10,745.00	89.09	91.08	8,878.33	-520.69	1,890.82	1,890.82	1.55	-1.22	-0.96
10,835.00	88.12	90.66	8,880.52	-522.05	1,980.78	1,980.78	1.17	-1.08	-0.47
10,927.00	87.75	90.46	8,883.83	-522.95	2,072.71	2,072.71	0.46	-0.40	-0.22
11,019.00	87.95	90.48	8,887.28	-523.71	2,164.65	2,164.65	0.22	0.22	0.02
11,110.00	88.36	89.95	8,890.21	-524.05	2,255.60	2,255.60	0.74	0.45	-0.58
11,201.00	88.72	90.60	8,892.53	-524.49	2,346.57	2,346.57	0.82	0.40	0.71
11,291.00	89.13	91.19	8,894.22	-525.89	2,436.54	2,436.54	0.80	0.46	0.66
11,382.00	89.23	91.42	8,895.52	-527.96	2,527.51	2,527.51	0.28	0.11	0.25
11,474.00	88.86	91.29	8,897.06	-530.14	2,619.47	2,619.47	0.43	-0.40	-0.14
11,566.00	89.56	89.39	8,898.32	-530.68	2,711.45	2,711.45	2.20	0.76	-2.07

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 28-28
Well: 10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 10H
TVD Reference: 3308.0' GE + 23.5' KB @ 3332.50usft
MD Reference: 3308.0' GE + 23.5' KB @ 3332.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
11,657.00	89.73	89.17	8,898.89	-529.54	2,802.44	2,802.44	0.31	0.19	-0.24
11,748.00	89.26	89.09	8,899.69	-528.16	2,893.43	2,893.43	0.52	-0.52	-0.09
11,839.00	88.96	88.89	8,901.10	-526.55	2,984.40	2,984.40	0.40	-0.33	-0.22
11,932.00	89.90	89.32	8,902.03	-525.10	3,077.39	3,077.39	1.11	1.01	0.46
12,027.00	89.90	89.61	8,902.19	-524.22	3,172.38	3,172.38	0.31	0.00	0.31
12,123.00	89.56	89.17	8,902.65	-523.19	3,268.37	3,268.37	0.58	-0.35	-0.46
12,219.00	89.13	89.00	8,903.74	-521.66	3,364.36	3,364.36	0.48	-0.45	-0.18
12,314.00	89.40	89.72	8,904.96	-520.60	3,459.34	3,459.34	0.81	0.28	0.76
12,410.00	91.14	91.07	8,904.51	-521.26	3,555.33	3,555.33	2.29	1.81	1.41
12,505.00	90.81	90.82	8,902.89	-522.83	3,650.31	3,650.31	0.44	-0.35	-0.26
12,601.00	91.01	90.64	8,901.37	-524.05	3,746.29	3,746.29	0.28	0.21	-0.19
12,697.00	90.94	90.51	8,899.74	-525.01	3,842.27	3,842.27	0.15	-0.07	-0.14
12,792.00	91.14	90.82	8,898.01	-526.12	3,937.24	3,937.24	0.39	0.21	0.33
12,888.00	91.71	91.33	8,895.62	-527.92	4,033.20	4,033.20	0.80	0.59	0.53
12,983.00	89.87	89.06	8,894.31	-528.24	4,128.18	4,128.18	3.08	-1.94	-2.39
13,079.00	90.34	89.60	8,894.14	-527.12	4,224.17	4,224.17	0.75	0.49	0.56
13,174.00	88.32	88.92	8,895.25	-525.89	4,319.15	4,319.15	2.24	-2.13	-0.72
13,270.00	87.51	88.82	8,898.74	-524.00	4,415.07	4,415.07	0.85	-0.84	-0.10
13,365.00	87.11	89.07	8,903.20	-522.25	4,509.95	4,509.95	0.50	-0.42	0.26
13,461.00	86.94	88.42	8,908.18	-520.15	4,605.79	4,605.79	0.70	-0.18	-0.68
13,556.00	88.93	88.61	8,911.61	-517.69	4,700.69	4,700.69	2.10	2.09	0.20
13,652.00	89.19	89.03	8,913.18	-515.71	4,796.66	4,796.66	0.51	0.27	0.44
13,747.00	88.45	88.87	8,915.14	-513.97	4,891.62	4,891.62	0.80	-0.78	-0.17
13,843.00	87.75	88.17	8,918.32	-511.50	4,987.54	4,987.54	1.03	-0.73	-0.73
13,845.46	87.78	88.20	8,918.42	-511.42	4,990.00	4,990.00	1.69	1.13	1.28
SL Crossing - 13845.46' MD, 8918.42' TVD									
13,938.00	88.82	89.37	8,921.16	-509.46	5,082.47	5,082.47	1.69	1.13	1.26
14,034.00	89.16	89.35	8,922.86	-508.39	5,178.45	5,178.45	0.35	0.35	-0.02
14,129.00	89.63	89.56	8,923.86	-507.48	5,273.44	5,273.44	0.54	0.49	0.22
14,225.00	89.49	90.87	8,924.60	-507.84	5,369.43	5,369.43	1.37	-0.15	1.36
14,320.00	89.80	90.65	8,925.18	-509.10	5,464.42	5,464.42	0.40	0.33	-0.23
14,416.00	89.86	90.30	8,925.47	-509.90	5,560.42	5,560.42	0.37	0.06	-0.36
14,512.00	90.23	90.48	8,925.39	-510.55	5,656.42	5,656.42	0.43	0.39	0.19
14,607.00	89.93	89.95	8,925.26	-510.91	5,751.42	5,751.42	0.64	-0.32	-0.56
14,703.00	90.43	91.25	8,924.96	-511.91	5,847.41	5,847.41	1.45	0.52	1.35
14,798.00	90.37	90.78	8,924.30	-513.60	5,942.39	5,942.39	0.50	-0.06	-0.49
14,894.00	90.16	91.55	8,923.85	-515.55	6,038.37	6,038.37	0.83	-0.22	0.80
14,989.00	88.25	90.61	8,925.17	-517.34	6,133.34	6,133.34	2.24	-2.01	-0.99
15,085.00	88.05	90.69	8,928.27	-518.43	6,229.28	6,229.28	0.22	-0.21	0.08
15,181.00	87.18	90.33	8,932.26	-519.28	6,325.19	6,325.19	0.98	-0.91	-0.38
15,276.00	87.45	90.24	8,936.71	-519.75	6,420.09	6,420.09	0.30	0.28	-0.09
15,372.00	87.58	90.66	8,940.88	-520.51	6,515.99	6,515.99	0.46	0.14	0.44
15,467.00	87.48	90.55	8,944.97	-521.51	6,610.90	6,610.90	0.16	-0.11	-0.12
15,563.00	87.62	89.96	8,949.07	-521.94	6,706.81	6,706.81	0.63	0.15	-0.61

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 10H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 10H
TVD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
MD Reference: 3309.0' GE + 23.5' KB @ 3332.50usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
15,658.00	87.45	89.71	8,953.16	-521.66	6,801.72	6,801.72	0.32	-0.18	-0.26
15,754.00	87.69	90.40	8,957.23	-521.75	6,897.64	6,897.64	0.76	0.25	0.72
15,849.00	88.22	90.59	8,960.62	-522.57	6,992.57	6,992.57	0.59	0.56	0.20
15,944.00	88.08	90.23	8,963.69	-523.25	7,087.52	7,087.52	0.41	-0.15	-0.38
16,038.00	87.72	90.70	8,967.13	-524.02	7,181.45	7,181.45	0.63	-0.38	0.50
16,133.00	88.49	91.13	8,970.27	-525.53	7,276.39	7,276.39	0.93	0.81	0.45
16,227.00	88.83	90.87	8,972.47	-527.01	7,370.35	7,370.35	0.61	0.36	-0.49
16,322.00	89.17	91.46	8,974.13	-528.77	7,465.32	7,465.32	0.91	0.36	0.83
16,416.00	89.26	91.69	8,975.42	-531.36	7,559.27	7,559.27	0.26	0.10	0.24
16,511.00	88.69	89.84	8,977.12	-532.63	7,654.25	7,654.25	2.04	-0.60	-1.95
16,606.00	87.96	89.01	8,979.89	-531.67	7,749.20	7,749.20	1.16	-0.77	-0.87
16,701.00	88.56	89.51	8,982.78	-530.45	7,844.15	7,844.15	0.82	0.63	0.53
16,795.00	89.90	88.39	8,984.04	-528.72	7,938.12	7,938.12	1.86	1.43	-1.19
16,889.00	89.87	88.07	8,984.23	-525.82	8,032.07	8,032.07	0.34	-0.03	-0.34
16,984.00	90.04	88.76	8,984.31	-523.19	8,127.04	8,127.04	0.75	0.18	0.73
17,078.00	90.17	88.61	8,984.13	-521.04	8,221.01	8,221.01	0.21	0.14	-0.16
17,173.00	90.24	89.02	8,983.79	-519.07	8,315.99	8,315.99	0.44	0.07	0.43
17,267.00	89.53	89.38	8,983.98	-517.76	8,409.98	8,409.98	0.85	-0.76	0.38
17,361.00	89.63	89.32	8,984.67	-516.69	8,503.97	8,503.97	0.12	0.11	-0.06
17,456.00	90.00	89.91	8,984.98	-516.05	8,598.97	8,598.97	0.73	0.39	0.62
17,550.00	90.27	90.50	8,984.76	-516.39	8,692.97	8,692.97	0.69	0.29	0.63
17,645.00	90.17	90.30	8,984.39	-517.05	8,787.96	8,787.96	0.24	-0.11	-0.21
17,739.00	90.71	90.14	8,983.67	-517.41	8,881.96	8,881.96	0.60	0.57	-0.17
17,834.00	89.13	90.39	8,983.80	-517.85	8,976.96	8,976.96	1.68	-1.66	0.26
17,929.00	88.90	90.58	8,985.44	-518.66	9,071.94	9,071.94	0.31	-0.24	0.20
18,024.00	88.63	90.38	8,987.48	-519.45	9,166.91	9,166.91	0.35	-0.28	-0.21
18,118.00	89.84	90.57	8,988.74	-520.23	9,260.90	9,260.90	1.30	1.29	0.20
18,212.00	88.39	91.28	8,990.19	-521.75	9,354.87	9,354.87	1.72	-1.54	0.76
18,306.00	87.31	90.75	8,993.72	-523.41	9,448.79	9,448.79	1.28	-1.15	-0.56
18,402.00	86.81	90.23	8,998.64	-524.23	9,544.66	9,544.66	0.75	-0.52	-0.54
18,496.00	86.94	89.27	9,003.76	-523.82	9,638.52	9,638.52	1.03	0.14	-1.02
18,590.00	86.64	90.62	9,009.03	-523.73	9,732.37	9,732.37	1.47	-0.32	1.44
18,685.00	86.10	89.96	9,015.04	-524.21	9,827.18	9,827.18	0.90	-0.57	-0.69
18,744.00	85.66	90.83	9,019.28	-524.62	9,886.02	9,886.02	1.65	-0.75	1.47
18,786.10	85.66	90.83	9,022.47	-525.23	9,928.00	9,928.00	0.00	0.00	0.00
HL Crossing - 18786.10' MD, 9022.47' TVD									
18,818.00	85.66	90.83	9,024.88	-525.69	9,959.80	9,959.80	0.00	0.00	0.00
Projection									