



February 8, 2018

RECEIVED

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

AUG 13 2018

DISTRICT II-ARTESIA O.C.D.

Attn: Ian Norwalk

Re: Final Directional Report
Onyx PWU 29-28 #11H
Eddy County, NM

30-015-44372

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-180030 for the (OH) from January 19, 2018 to February 02, 2018;
Drilling start depth of 234' MD to 16,743' 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

RECEIVED

AUG 13 2018

DISTRICT II-ARTESIA O.C.D.



devon

Final Directional Report

Devon Energy

Onyx PWU 29-28 #11H

Eddy County, NM

Prepared for Ian Norwalk



Devon Energy

Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

3310.0' GE + 23.5' KB @ 3333.50usft
Ground Level: 3310.00



Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.28°
Magnetic Field
Strength: 48131.9nT
Dip Angle: 60.45°
Date: 1/8/2018
Model: HDGM

PROJECT DETAILS: Eddy County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

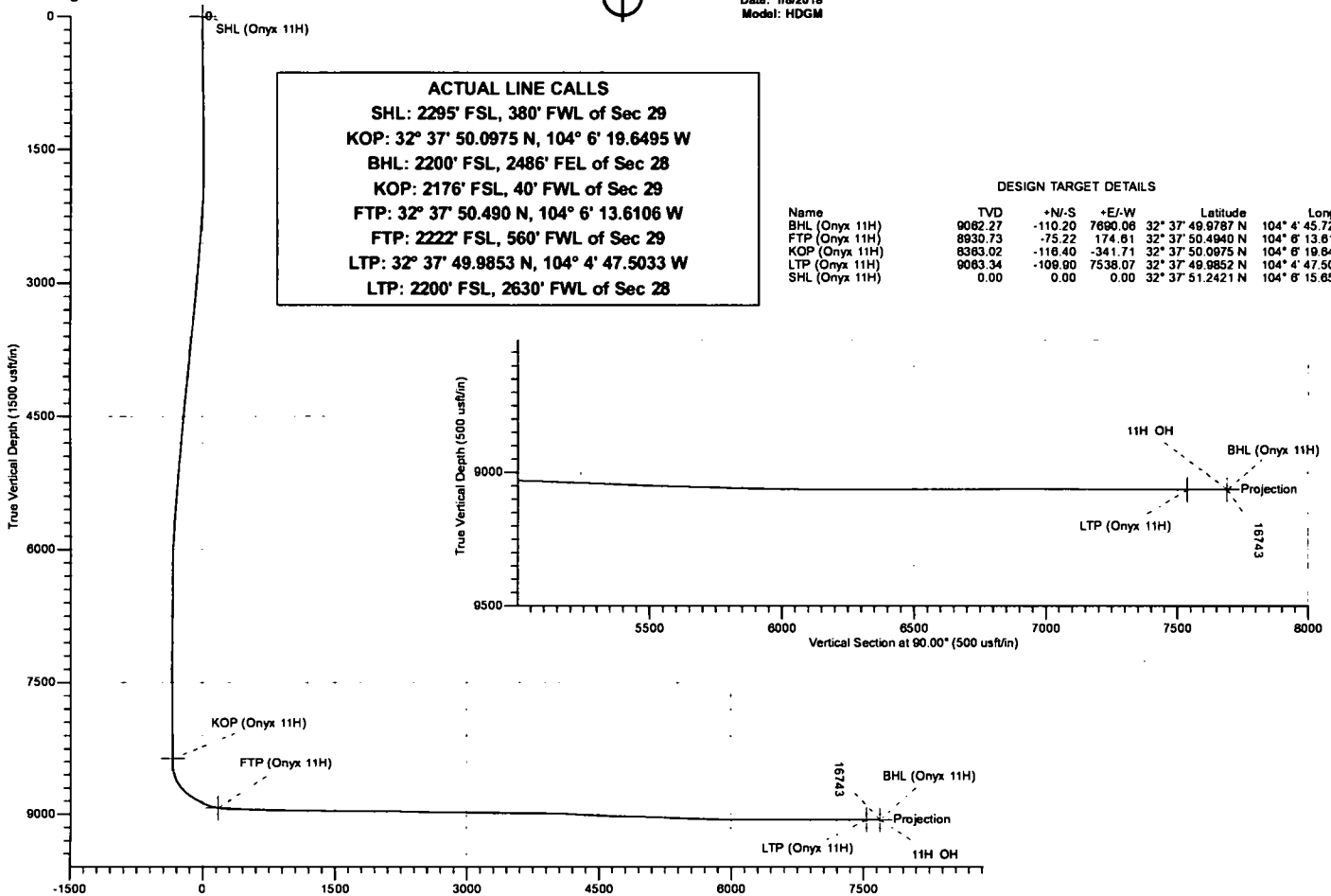


ACTUAL LINE CALLS

SHL: 2295' FSL, 380' FWL of Sec 29
KOP: 32° 37' 50.0975 N, 104° 6' 19.6495 W
BHL: 2200' FSL, 2486' FEL of Sec 28
KOP: 2176' FSL, 40' FWL of Sec 29
FTP: 32° 37' 50.490 N, 104° 6' 13.6106 W
FTP: 2222' FSL, 560' FWL of Sec 29
LTP: 32° 37' 49.9853 N, 104° 4' 47.5033 W
LTP: 2200' FSL, 2630' FWL of Sec 28

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL (Onyx 11H)	9082.27	-110.20	7690.06	32° 37' 49.9787 N	104° 4' 45.7259 W
FTP (Onyx 11H)	8930.73	-75.22	174.61	32° 37' 50.4940 N	104° 6' 13.6106 W
KOP (Onyx 11H)	8363.02	-116.40	-341.71	32° 37' 50.0975 N	104° 6' 19.6495 W
LTP (Onyx 11H)	9063.34	-109.80	7538.07	32° 37' 49.9852 N	104° 4' 47.5033 W
SHL (Onyx 11H)	0.00	0.00	0.00	32° 37' 51.2421 N	104° 6' 15.6506 W



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (11H/OH)
Onyx PWU 29-28
Created By: Dustin Ault
Date: 9/01/2018
Approved: _____
Date: _____

Devon Energy

Project: Eddy County, NM (NAD-83)

Site: Onyx PWU 29-28

Well: 11H

Wellbore: OH

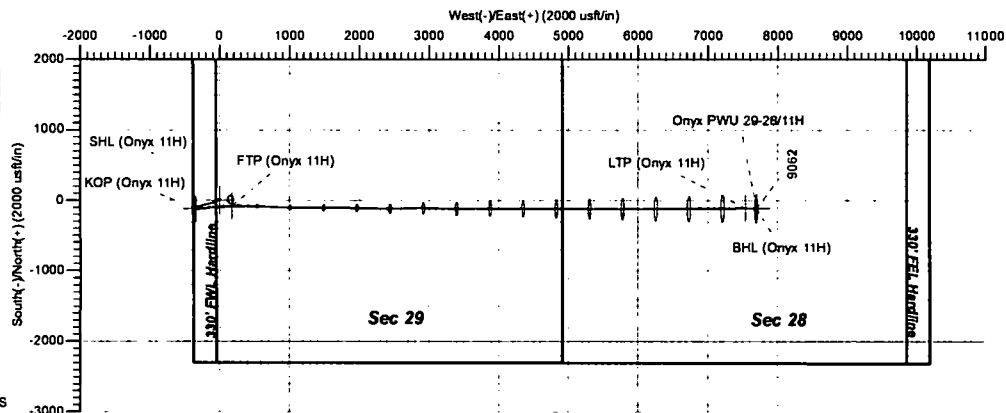
Design: OH

devon



Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.28°

Magnetic Field
Strength: 48131.9 nT
Dip Angle: 60.45°
Date: 1/8/2018
Model: HDGM



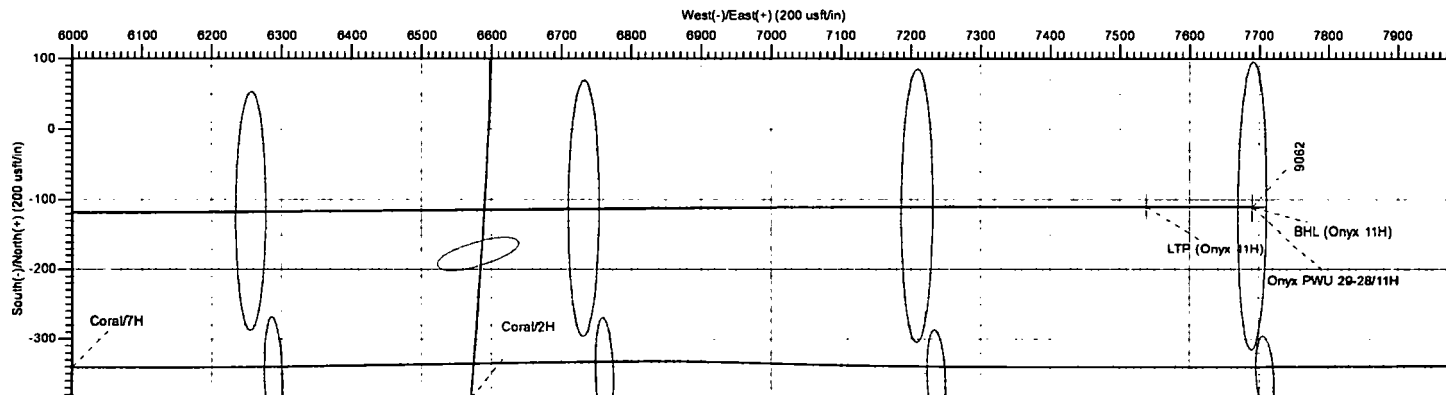
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (Onyx 11H)	0.00	0.00	0.00	593328.44	611830.14	32° 37' 51.2421 N	104° 6' 15.8508 W
KOP (Onyx 11H)	8363.02	-118.40	-341.71	593212.04	611488.43	32° 37' 50.0875 N	104° 6' 19.8495 W
FTP (Onyx 11H)	8930.73	-75.22	174.81	593253.22	612004.75	32° 37' 50.4940 N	104° 6' 13.6106 W
BHL (Onyx 11H)	9082.27	-110.20	7690.06	593218.24	619520.20	32° 37' 49.9787 N	104° 4' 45.7259 W
LTP (Onyx 11H)	9083.34	-109.90	7538.07	593218.54	619368.21	32° 37' 49.9852 N	104° 4' 47.5033 W

ACTUAL LINE CALLS

SHL: 2295' FSL, 380' FWL of Sec 29
KOP: 32° 37' 50.0875 N, 104° 6' 19.8495 W
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Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



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Phone: 936/756-7577, Fax 936/756-7595

Design: OH (11H/OH)
Onyx PWU 29-28
Created By: Dustin Aust
Date: 9/08/2018
Approved: _____
Date: _____

Devon Energy

Eddy County, NM (NAD-83)

Onyx PWU 29-28

11H

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DISTRICT II-ARTESIA O.C.D.

OH

Design: OH

Standard Survey Report

07 August, 2018

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 11H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3310.0' GE + 23.5' KB @ 3333.50usft
Site:	Onyx PWU 29-28	MD Reference:	3310.0' GE + 23.5' KB @ 3333.50usft
Well:	11H	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	11H					
Well Position	+N-S	0.00 usft	Northing:	593,328.44 usft	Latitude:	32° 37' 51.2421 N
	+E-W	0.00 usft	Easting:	611,830.14 usft	Longitude:	104° 6' 15.6506 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,310.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/8/2018	7.40	60.45	48,132

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 2/7/2018				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.00	123.00	Survey #1 (OH)	VES GyroFlex V2		
234.00	16,666.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM	
16,743.00	16,743.00	Survey #3 (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
SHL (Onyx 11H)									
50.00	0.52	35.51	50.00	0.18	0.13	0.13	1.04	1.04	0.00
100.00	0.37	26.37	100.00	0.51	0.34	0.34	0.33	-0.30	-18.28
123.00	0.53	71.21	123.00	0.61	0.47	0.47	1.63	0.70	194.96
234.00	0.70	48.60	233.99	1.23	1.46	1.46	0.26	0.15	-20.37
326.00	1.00	34.70	325.98	2.26	2.34	2.34	0.39	0.33	-15.11
423.00	1.20	25.90	422.96	3.87	3.27	3.27	0.27	0.21	-9.07
515.00	1.10	28.20	514.94	5.51	4.11	4.11	0.12	-0.11	2.50

LEAM Drilling Services

Survey Report

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Site: Onyx PWU 29-28
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Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
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MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)
606.00	1.10	26.60	605.93	7.07	4.91	4.91	0.03	0.00	-1.76
697.00	1.40	26.60	696.91	8.84	5.80	5.80	0.33	0.33	0.00
788.00	1.50	18.70	787.88	10.96	6.68	6.68	0.25	0.11	-8.68
880.00	1.60	37.90	879.84	13.12	7.85	7.85	0.57	0.11	20.87
971.00	1.80	33.10	970.80	15.32	9.41	9.41	0.27	0.22	-5.27
1,063.00	1.10	43.30	1,062.77	17.17	10.81	10.81	0.81	-0.76	11.09
1,154.00	1.10	42.40	1,153.76	18.45	12.00	12.00	0.02	0.00	-0.99
1,247.00	0.40	16.40	1,246.75	19.42	12.69	12.69	0.82	-0.75	-27.96
1,338.00	0.20	61.40	1,337.75	19.80	12.92	12.92	0.32	-0.22	49.45
1,429.00	0.40	169.20	1,428.75	19.57	13.12	13.12	0.55	0.22	118.46
1,520.00	0.50	172.70	1,519.74	18.86	13.23	13.23	0.11	0.11	3.85
1,612.00	0.10	182.00	1,611.74	18.38	13.28	13.28	0.44	-0.43	10.11
1,708.00	0.30	188.90	1,707.74	18.05	13.23	13.23	0.21	0.21	7.19
1,803.00	1.00	245.60	1,802.74	17.46	12.44	12.44	0.92	0.74	59.68
1,899.00	2.00	240.90	1,898.70	16.30	10.21	10.21	1.05	1.04	-4.90
1,995.00	2.50	240.90	1,994.63	14.47	6.92	6.92	0.52	0.52	0.00
2,090.00	3.50	244.20	2,089.50	12.20	2.50	2.50	1.07	1.05	3.47
2,186.00	4.40	242.80	2,185.27	9.24	-3.41	-3.41	0.94	0.94	-1.46
2,281.00	5.00	244.80	2,279.95	5.81	-10.40	-10.40	0.65	0.63	2.11
2,377.00	5.10	244.80	2,375.57	2.21	-18.05	-18.05	0.10	0.10	0.00
2,472.00	5.10	245.80	2,470.20	-1.32	-25.72	-25.72	0.09	0.00	1.05
2,567.00	4.80	248.60	2,564.84	-4.50	-33.27	-33.27	0.41	-0.32	2.95
2,663.00	5.30	246.90	2,660.47	-7.70	-41.09	-41.09	0.54	0.52	-1.77
2,758.00	5.20	250.40	2,755.07	-10.87	-49.18	-49.18	0.35	-0.11	3.68
2,853.00	5.00	247.00	2,849.70	-13.93	-57.05	-57.05	0.38	-0.21	-3.58
2,949.00	4.80	246.70	2,945.35	-17.15	-64.59	-64.59	0.21	-0.21	-0.31
3,044.00	5.10	249.90	3,039.99	-20.18	-72.20	-72.20	0.43	0.32	3.37
3,140.00	5.60	249.20	3,135.57	-23.31	-80.59	-80.59	0.53	0.52	-0.73
3,235.00	6.40	251.60	3,230.05	-26.62	-89.95	-89.95	0.88	0.84	2.53
3,331.00	6.20	252.00	3,325.47	-29.91	-99.95	-99.95	0.21	-0.21	0.42
3,427.00	6.00	251.80	3,420.93	-33.08	-109.65	-109.65	0.21	-0.21	-0.21
3,449.00	5.80	251.80	3,442.81	-33.79	-111.80	-111.80	0.91	-0.91	0.00
3,517.00	5.90	251.80	3,510.46	-35.95	-118.38	-118.38	0.15	0.15	0.00
3,612.00	6.20	251.80	3,604.93	-39.08	-127.89	-127.89	0.32	0.32	0.00
3,707.00	5.10	258.80	3,699.47	-41.50	-136.91	-136.91	1.36	-1.16	7.37
3,801.00	4.80	262.70	3,793.12	-42.82	-144.91	-144.91	0.48	-0.32	4.15
3,896.00	5.70	260.90	3,887.72	-44.07	-153.51	-153.51	0.96	0.95	-1.89
3,989.00	6.70	259.00	3,980.17	-45.83	-163.40	-163.40	1.10	1.08	-2.04
4,084.00	6.80	255.50	4,074.51	-48.30	-174.28	-174.28	0.45	0.11	-3.68
4,178.00	6.20	249.50	4,167.91	-51.47	-184.42	-184.42	0.96	-0.64	-6.38
4,272.00	6.20	251.10	4,261.36	-54.89	-193.98	-193.98	0.18	0.00	1.70
4,367.00	5.50	251.60	4,355.87	-57.99	-203.15	-203.15	0.74	-0.74	0.53
4,462.00	5.20	249.50	4,450.45	-60.93	-211.51	-211.51	0.38	-0.32	-2.21

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
TVD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)
4,556.00	5.00	250.40	4,544.08	-63.80	-219.35	-219.35	0.23	-0.21	0.96
4,651.00	5.20	261.10	4,638.71	-65.85	-227.51	-227.51	1.02	0.21	11.26
4,746.00	5.00	264.30	4,733.33	-66.93	-235.88	-235.88	0.37	-0.21	3.37
4,840.00	4.70	258.80	4,826.99	-68.09	-243.73	-243.73	0.59	-0.32	-5.85
4,936.00	5.10	253.00	4,922.64	-70.10	-251.67	-251.67	0.66	0.42	-6.04
5,030.00	5.50	251.30	5,016.24	-72.76	-259.94	-259.94	0.46	0.43	-1.81
5,125.00	5.50	248.60	5,110.80	-75.89	-268.49	-268.49	0.27	0.00	-2.84
5,220.00	4.90	247.70	5,205.41	-79.09	-276.48	-276.48	0.64	-0.63	-0.95
5,315.00	4.20	250.90	5,300.11	-81.76	-283.52	-283.52	0.78	-0.74	3.37
5,411.00	4.20	253.70	5,395.85	-83.90	-290.22	-290.22	0.21	0.00	2.92
5,506.00	4.00	253.90	5,490.61	-85.80	-296.74	-296.74	0.21	-0.21	0.21
5,602.00	4.40	250.70	5,586.35	-87.94	-303.43	-303.43	0.48	0.42	-3.33
5,697.00	4.70	246.70	5,681.05	-90.69	-310.45	-310.45	0.46	0.32	-4.21
5,793.00	4.00	261.80	5,776.78	-92.72	-317.37	-317.37	1.39	-0.73	15.73
5,889.00	3.30	263.70	5,872.59	-93.50	-323.43	-323.43	0.74	-0.73	1.98
5,984.00	2.60	258.50	5,967.46	-94.23	-328.26	-328.26	0.79	-0.74	-5.47
6,080.00	2.30	236.90	6,063.37	-95.72	-332.01	-332.01	1.00	-0.31	-22.50
6,175.00	1.10	231.80	6,158.33	-97.32	-334.32	-334.32	1.27	-1.26	-5.37
6,270.00	0.60	251.30	6,253.32	-98.04	-335.51	-335.51	0.60	-0.53	20.53
6,365.00	0.40	316.80	6,348.32	-97.96	-336.21	-336.21	0.60	-0.21	68.95
6,461.00	0.50	5.00	6,444.31	-97.30	-336.40	-336.40	0.39	0.10	50.21
6,556.00	1.00	4.50	6,539.31	-96.06	-336.30	-336.30	0.53	0.53	-0.53
6,651.00	1.10	1.80	6,634.29	-94.32	-336.21	-336.21	0.12	0.11	-2.84
6,747.00	1.00	2.40	6,730.27	-92.56	-336.14	-336.14	0.10	-0.10	0.63
6,843.00	0.80	239.50	6,826.27	-92.07	-336.69	-336.69	1.65	-0.21	-128.02
6,938.00	0.80	232.10	6,921.26	-92.81	-337.78	-337.78	0.11	0.00	-7.79
7,033.00	0.60	230.90	7,016.25	-93.53	-338.69	-338.69	0.21	-0.21	-1.26
7,129.00	0.40	256.00	7,112.25	-93.93	-339.41	-339.41	0.30	-0.21	26.15
7,224.00	1.20	200.60	7,207.24	-94.94	-340.08	-340.08	1.08	0.84	-58.32
7,320.00	1.20	206.30	7,303.22	-96.78	-340.88	-340.88	0.12	0.00	5.94
7,415.00	0.90	194.50	7,398.20	-98.40	-341.50	-341.50	0.39	-0.32	-12.42
7,511.00	1.00	189.90	7,494.19	-99.95	-341.84	-341.84	0.13	0.10	-4.79
7,607.00	0.60	176.90	7,590.18	-101.28	-341.95	-341.95	0.45	-0.42	-13.54
7,702.00	1.10	179.90	7,685.17	-102.69	-341.93	-341.93	0.53	0.53	3.16
7,798.00	1.10	174.10	7,781.15	-104.53	-341.83	-341.83	0.12	0.00	-6.04
7,893.00	1.10	177.30	7,876.13	-106.35	-341.69	-341.69	0.06	0.00	3.37
7,988.00	1.20	181.70	7,971.11	-108.25	-341.68	-341.68	0.14	0.11	4.63
8,084.00	1.00	172.30	8,067.10	-110.09	-341.60	-341.60	0.28	-0.21	-9.79
8,179.00	1.10	162.80	8,162.08	-111.78	-341.22	-341.22	0.21	0.11	-10.00
8,275.00	1.50	192.40	8,258.06	-113.89	-341.21	-341.21	0.80	0.42	30.83
8,380.00	1.30	189.70	8,363.02	-116.40	-341.71	-341.71	0.20	-0.19	-2.57
KOP (Onyx 11H)									
8,477.00	5.50	98.20	8,459.87	-118.15	-337.29	-337.29	5.86	4.33	-94.33
8,525.00	12.80	88.70	8,507.23	-118.36	-329.69	-329.69	15.48	15.21	-19.79

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
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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)
8,573.00	17.90	82.50	8,553.50	-117.27	-317.05	-317.05	11.15	10.63	-12.92
8,621.00	24.00	75.80	8,598.32	-113.91	-300.25	-300.25	13.63	12.71	-13.96
8,668.00	29.40	77.10	8,640.29	-108.99	-279.73	-279.73	11.56	11.49	2.77
8,716.00	35.70	80.90	8,680.73	-104.14	-254.38	-254.38	13.79	13.13	7.92
8,763.00	41.80	84.40	8,717.37	-100.44	-225.22	-225.22	13.79	12.98	7.45
8,811.00	48.20	87.80	8,751.30	-98.19	-191.39	-191.39	14.24	13.33	7.08
8,859.00	52.60	88.70	8,781.89	-97.07	-154.43	-154.43	9.28	9.17	1.88
8,907.00	57.00	88.10	8,809.55	-95.97	-115.23	-115.23	9.22	9.17	-1.25
8,954.00	59.50	88.10	8,834.28	-94.64	-75.29	-75.29	5.32	5.32	0.00
9,002.00	62.50	87.30	8,857.55	-92.95	-33.35	-33.35	6.42	6.25	-1.67
9,050.00	66.60	85.00	8,878.18	-90.03	9.88	9.88	9.57	8.54	-4.79
9,098.00	69.50	83.20	8,896.12	-85.45	54.16	54.16	6.97	6.04	-3.75
9,145.00	71.50	84.60	8,911.81	-80.74	98.21	98.21	5.10	4.26	2.98
9,193.00	76.90	86.20	8,924.87	-77.05	144.23	144.23	11.70	11.25	3.33
9,224.00	81.30	86.90	8,930.73	-75.22	174.61	174.61	14.37	14.19	2.26
FTP (Onyx 11H)									
9,269.00	86.00	87.80	8,935.71	-73.15	219.27	219.27	10.63	10.44	2.00
9,315.00	88.10	88.80	8,938.08	-71.79	265.19	265.19	5.06	4.57	2.17
9,360.00	88.40	91.50	8,939.45	-71.91	310.16	310.16	6.03	0.67	6.00
9,405.00	88.00	92.40	8,940.87	-73.44	355.11	355.11	2.19	-0.89	2.00
9,453.00	87.80	91.80	8,942.62	-75.20	403.05	403.05	1.32	-0.42	-1.25
9,497.00	87.80	91.50	8,944.31	-76.46	447.00	447.00	0.68	0.00	-0.68
9,588.00	88.50	92.40	8,947.25	-79.56	537.90	537.90	1.25	0.77	0.99
9,679.00	88.70	92.70	8,949.47	-83.60	628.78	628.78	0.40	0.22	0.33
9,774.00	88.60	92.50	8,951.71	-87.91	723.65	723.65	0.24	-0.11	-0.21
9,869.00	88.80	92.50	8,953.87	-92.06	818.54	818.54	0.21	0.21	0.00
9,964.00	88.60	92.00	8,956.02	-95.78	913.44	913.44	0.57	-0.21	-0.53
10,059.00	89.30	90.80	8,957.76	-98.10	1,008.40	1,008.40	1.46	0.74	-1.26
10,155.00	89.20	90.20	8,959.02	-98.94	1,104.38	1,104.38	0.63	-0.10	-0.63
10,250.00	90.00	91.00	8,959.68	-99.94	1,199.37	1,199.37	1.19	0.84	0.84
10,346.00	89.30	90.80	8,960.27	-101.45	1,295.36	1,295.36	0.76	-0.73	-0.21
10,441.00	89.60	90.20	8,961.18	-102.27	1,390.35	1,390.35	0.71	0.32	-0.63
10,537.00	89.60	89.50	8,961.85	-102.02	1,486.35	1,486.35	0.73	0.00	-0.73
10,632.00	89.30	90.80	8,962.76	-102.27	1,581.34	1,581.34	1.40	-0.32	1.37
10,728.00	88.80	90.20	8,964.36	-103.11	1,677.32	1,677.32	0.81	-0.52	-0.63
10,823.00	88.90	89.70	8,966.26	-103.03	1,772.30	1,772.30	0.54	0.11	-0.53
10,919.00	89.30	90.40	8,967.77	-103.11	1,868.29	1,868.29	0.84	0.42	0.73
11,014.00	89.50	92.40	8,968.77	-105.43	1,963.25	1,963.25	2.12	0.21	2.11
11,109.00	89.70	91.80	8,969.43	-108.91	2,058.19	2,058.19	0.67	0.21	-0.63
11,205.00	90.40	91.50	8,969.34	-111.68	2,154.15	2,154.15	0.79	0.73	-0.31
11,300.00	89.80	91.30	8,969.18	-114.00	2,249.12	2,249.12	0.67	-0.63	-0.21
11,396.00	88.50	90.10	8,970.60	-115.17	2,345.09	2,345.09	1.84	-1.35	-1.25
11,491.00	88.30	89.70	8,973.26	-115.00	2,440.06	2,440.06	0.47	-0.21	-0.42

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
TVD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)
11,587.00	88.10	89.20	8,976.27	-114.08	2,536.01	2,536.01	0.56	-0.21	-0.52
11,683.00	88.70	88.00	8,978.95	-111.74	2,631.94	2,631.94	1.40	0.63	-1.25
11,778.00	89.60	89.00	8,980.36	-109.25	2,726.89	2,726.89	1.42	0.95	1.05
11,874.00	90.00	89.40	8,980.70	-107.91	2,822.88	2,822.88	0.59	0.42	0.42
11,969.00	90.10	90.20	8,980.61	-107.58	2,917.88	2,917.88	0.85	0.11	0.84
12,065.00	89.30	91.50	8,981.12	-109.00	3,013.87	3,013.87	1.59	-0.83	1.35
12,160.00	89.40	91.30	8,982.19	-111.33	3,108.83	3,108.83	0.24	0.11	-0.21
12,256.00	89.90	90.80	8,982.78	-113.08	3,204.81	3,204.81	0.74	0.52	-0.52
12,351.00	89.30	90.60	8,983.44	-114.25	3,299.80	3,299.80	0.67	-0.63	-0.21
12,446.00	89.30	90.60	8,984.60	-115.24	3,394.79	3,394.79	0.00	0.00	0.00
12,542.00	89.80	90.10	8,985.36	-115.83	3,490.78	3,490.78	0.74	0.52	-0.52
12,637.00	90.20	89.50	8,985.36	-115.49	3,585.78	3,585.78	0.76	0.42	-0.63
12,733.00	90.20	89.40	8,985.02	-114.57	3,681.78	3,681.78	0.10	0.00	-0.10
12,828.00	89.40	89.00	8,985.35	-113.25	3,776.77	3,776.77	0.94	-0.84	-0.42
12,924.00	88.60	89.20	8,987.03	-111.74	3,872.74	3,872.74	0.86	-0.83	0.21
13,019.00	88.70	90.20	8,989.27	-111.24	3,967.71	3,967.71	1.06	0.11	1.05
13,115.00	87.60	91.10	8,992.37	-112.33	4,063.65	4,063.65	1.48	-1.15	0.94
13,210.00	86.30	90.20	8,997.42	-113.41	4,158.51	4,158.51	1.66	-1.37	-0.95
13,306.00	86.30	89.90	9,003.62	-113.49	4,254.31	4,254.31	0.31	0.00	-0.31
13,401.00	87.00	89.20	9,009.17	-112.75	4,349.14	4,349.14	1.04	0.74	-0.74
13,496.00	87.50	88.80	9,013.73	-111.09	4,444.02	4,444.02	0.67	0.53	-0.42
13,592.00	87.40	89.50	9,018.00	-109.67	4,539.91	4,539.91	0.74	-0.10	0.73
13,687.00	87.80	91.10	9,021.98	-110.16	4,634.82	4,634.82	1.73	0.42	1.68
13,783.00	88.50	91.00	9,025.08	-111.92	4,730.76	4,730.76	0.74	0.73	-0.10
13,879.00	90.00	90.60	9,026.33	-113.26	4,826.74	4,826.74	1.62	1.56	-0.42
13,974.00	88.50	90.40	9,027.58	-114.09	4,921.72	4,921.72	1.59	-1.58	-0.21
14,070.00	89.00	90.60	9,029.67	-114.93	5,017.70	5,017.70	0.56	0.52	0.21
14,165.00	87.50	90.60	9,032.57	-115.92	5,112.64	5,112.64	1.58	-1.58	0.00
14,260.00	87.80	90.60	9,036.47	-116.92	5,207.56	5,207.56	0.32	0.32	0.00
14,356.00	87.50	90.20	9,040.40	-117.59	5,303.47	5,303.47	0.52	-0.31	-0.42
14,451.00	88.00	90.20	9,044.13	-117.92	5,398.40	5,398.40	0.53	0.53	0.00
14,546.00	88.50	90.10	9,047.03	-118.17	5,493.36	5,493.36	0.54	0.53	-0.11
14,642.00	87.30	90.20	9,050.55	-118.42	5,589.29	5,589.29	1.25	-1.25	0.10
14,737.00	88.30	89.70	9,054.20	-118.33	5,684.22	5,684.22	1.18	1.05	-0.53
14,832.00	88.80	90.10	9,056.60	-118.17	5,779.19	5,779.19	0.67	0.53	0.42
14,927.00	89.00	89.90	9,058.43	-118.17	5,874.17	5,874.17	0.30	0.21	-0.21
15,023.00	89.10	89.90	9,060.02	-118.00	5,970.16	5,970.16	0.10	0.10	0.00
15,118.00	88.90	90.20	9,061.67	-118.08	6,065.14	6,065.14	0.38	-0.21	0.32
15,214.00	89.80	89.40	9,062.76	-117.75	6,161.13	6,161.13	1.25	0.94	-0.83
15,309.00	90.00	89.40	9,062.93	-116.75	6,256.13	6,256.13	0.21	0.21	0.00
15,405.00	90.20	89.50	9,062.76	-115.83	6,352.12	6,352.12	0.23	0.21	0.10
15,500.00	90.70	89.90	9,062.02	-115.34	6,447.12	6,447.12	0.67	0.53	0.42
15,595.00	89.90	89.40	9,061.52	-114.75	6,542.11	6,542.11	0.99	-0.84	-0.53
15,690.00	90.00	89.40	9,061.60	-113.76	6,637.11	6,637.11	0.11	0.11	0.00

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
TVD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)
15,785.00	90.70	89.70	9,061.02	-113.01	6,732.10	6,732.10	0.80	0.74	0.32
15,881.00	90.00	89.40	9,060.43	-112.26	6,828.10	6,828.10	0.79	-0.73	-0.31
15,976.00	90.30	89.70	9,060.19	-111.51	6,923.09	6,923.09	0.45	0.32	0.32
16,072.00	90.00	89.40	9,059.93	-110.76	7,019.09	7,019.09	0.44	-0.31	-0.31
16,167.00	89.20	89.70	9,060.60	-110.01	7,114.08	7,114.08	0.90	-0.84	0.32
16,262.00	89.30	89.90	9,061.84	-109.68	7,209.08	7,209.08	0.24	0.11	0.21
16,358.00	89.40	89.90	9,062.93	-109.51	7,305.07	7,305.07	0.10	0.10	0.00
16,454.00	90.10	90.10	9,063.35	-109.51	7,401.07	7,401.07	0.76	0.73	0.21
16,549.00	89.90	90.20	9,063.35	-109.76	7,496.07	7,496.07	0.24	-0.21	0.11
16,591.00	90.12	90.16	9,063.34	-109.90	7,538.07	7,538.07	0.52	0.51	-0.09
LTP (Onyx 11H)									
16,591.35	90.12	90.16	9,063.34	-109.90	7,538.42	7,538.42	0.52	0.51	-0.09
PBHL (Onyx 11H)									
16,666.00	90.50	90.10	9,062.94	-110.07	7,613.07	7,613.07	0.52	0.51	-0.09
16,743.00	90.50	90.10	9,062.27	-110.20	7,690.06	7,690.06	0.00	0.00	0.00
Projection - BHL (Onyx 11H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL (Onyx 11H)	0.00	0.00	0.00	0.00	0.00	593,328.44	611,830.14	32° 37' 51.2421 N	104° 6' 15.6506 W
- actual wellpath hits target center									
- Point									
KOP (Onyx 11H)	0.00	0.00	8,363.02	-116.40	-341.71	593,212.04	611,488.43	32° 37' 50.0975 N	104° 6' 19.6495 W
- actual wellpath hits target center									
- Point									
FTP (Onyx 11H)	0.00	0.00	8,930.73	-75.22	174.61	593,253.22	612,004.75	32° 37' 50.4940 N	104° 6' 13.6106 W
- actual wellpath hits target center									
- Point									
BHL (Onyx 11H)	0.00	0.00	9,062.27	-110.20	7,690.06	593,218.24	619,520.20	32° 37' 49.9787 N	104° 4' 45.7259 W
- actual wellpath hits target center									
- Point									
LTP (Onyx 11H)	0.00	0.00	9,063.34	-109.90	7,538.07	593,218.54	619,368.21	32° 37' 49.9852 N	104° 4' 47.5033 W
- actual wellpath hits target center									
- Point									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
16,743.00	9,062.27	-110.20	7,690.06	Projection

Checked By: _____ Approved By: _____ Date: _____

Devon Energy

Eddy County, NM (NAD-83)

Onyx PWU 29-28

11H

OH

Design: OH

Survey Report - Geographic

07 August, 2018

LEAM Drilling Services

Survey Report - Geographic

Company:	Devon Energy	Local Co-ordinate Reference:	Well 11H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3310.0' GE + 23.5' KB @ 3333.50usft
Site:	Onyx PWU 29-28	MD Reference:	3310.0' GE + 23.5' KB @ 3333.50usft
Well:	11H	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
From:	Map	Easting:	611,703.20 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 38' 20.7014 N
		Longitude:	104° 6' 17.0602 W
		Grid Convergence:	0.12 °

Well	11H		
Well Position	+N/-S	0.00 usft	Northing: 593,328.44 usft
	+E/-W	0.00 usft	Easting: 611,830.14 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 37' 51.2421 N
		Longitude:	104° 6' 15.6506 W
		Ground Level:	3,310.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	1/8/2018	7.40
		Dip Angle (°)	60.45
		Field Strength (nT)	48,132

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
		Direction (°)	90.00

Survey Program	Date 2/7/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
50.00	123.00	Survey #1 (OH)	VES GyroFlex V2
234.00	16,666.00	Survey #2 (OH)	LEAM MWD+HDGM
16,743.00	16,743.00	Survey #3 (OH)	Project
			Description
			MWD+HDGM
			Projection

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	593,328.44	611,830.14	32° 37' 51.2421 N	104° 6' 15.6506 W
SHL (Onyx 11H)									
50.00	0.52	35.51	50.00	0.18	0.13	593,328.63	611,830.28	32° 37' 51.2439 N	104° 6' 15.6491 W
100.00	0.37	26.37	100.00	0.51	0.34	593,328.96	611,830.48	32° 37' 51.2472 N	104° 6' 15.6467 W
123.00	0.53	71.21	123.00	0.61	0.47	593,329.06	611,830.61	32° 37' 51.2482 N	104° 6' 15.6451 W
234.00	0.70	48.60	233.99	1.23	1.46	593,329.67	611,831.61	32° 37' 51.2542 N	104° 6' 15.6335 W
326.00	1.00	34.70	325.98	2.26	2.34	593,330.70	611,832.49	32° 37' 51.2644 N	104° 6' 15.6232 W
423.00	1.20	25.90	422.96	3.87	3.27	593,332.31	611,833.41	32° 37' 51.2803 N	104° 6' 15.6123 W
515.00	1.10	28.20	514.94	5.51	4.11	593,333.96	611,834.25	32° 37' 51.2966 N	104° 6' 15.6025 W
606.00	1.10	26.60	605.93	7.07	4.91	593,335.51	611,835.05	32° 37' 51.3119 N	104° 6' 15.5930 W

LEAM Drilling Services

Survey Report - Geographic

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
TVD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
697.00	1.40	26.60	696.91	8.84	5.80	593,337.28	611,835.94	32° 37' 51.3294 N	104° 6' 15.5826 W
788.00	1.50	18.70	787.88	10.96	6.68	593,339.41	611,836.82	32° 37' 51.3504 N	104° 6' 15.5722 W
880.00	1.60	37.90	879.84	13.12	7.85	593,341.56	611,838.00	32° 37' 51.3717 N	104° 6' 15.5585 W
971.00	1.80	33.10	970.80	15.32	9.41	593,343.76	611,839.56	32° 37' 51.3934 N	104° 6' 15.5401 W
1,063.00	1.10	43.30	1,062.77	17.17	10.81	593,345.61	611,840.95	32° 37' 51.4118 N	104° 6' 15.5238 W
1,154.00	1.10	42.40	1,153.76	18.45	12.00	593,346.89	611,842.14	32° 37' 51.4244 N	104° 6' 15.5099 W
1,247.00	0.40	16.40	1,246.75	19.42	12.69	593,347.86	611,842.83	32° 37' 51.4340 N	104° 6' 15.5017 W
1,338.00	0.20	61.40	1,337.75	19.80	12.92	593,348.25	611,843.06	32° 37' 51.4378 N	104° 6' 15.4990 W
1,429.00	0.40	169.20	1,428.75	19.57	13.12	593,348.01	611,843.26	32° 37' 51.4354 N	104° 6' 15.4967 W
1,520.00	0.50	172.70	1,519.74	18.86	13.23	593,347.30	611,843.37	32° 37' 51.4284 N	104° 6' 15.4954 W
1,612.00	0.10	182.00	1,611.74	18.38	13.28	593,346.82	611,843.42	32° 37' 51.4237 N	104° 6' 15.4949 W
1,708.00	0.30	188.90	1,707.74	18.05	13.23	593,346.49	611,843.38	32° 37' 51.4204 N	104° 6' 15.4954 W
1,803.00	1.00	245.60	1,802.74	17.46	12.44	593,345.90	611,842.59	32° 37' 51.4146 N	104° 6' 15.5047 W
1,899.00	2.00	240.90	1,898.70	16.30	10.21	593,344.74	611,840.36	32° 37' 51.4032 N	104° 6' 15.5308 W
1,995.00	2.50	240.90	1,994.63	14.47	6.92	593,342.91	611,837.07	32° 37' 51.3851 N	104° 6' 15.5693 W
2,090.00	3.50	244.20	2,089.50	12.20	2.50	593,340.64	611,832.64	32° 37' 51.3627 N	104° 6' 15.6211 W
2,186.00	4.40	242.80	2,185.27	9.24	-3.41	593,337.68	611,826.73	32° 37' 51.3336 N	104° 6' 15.6903 W
2,281.00	5.00	244.80	2,279.95	5.81	-10.40	593,334.25	611,819.74	32° 37' 51.2998 N	104° 6' 15.7721 W
2,377.00	5.10	244.80	2,375.57	2.21	-18.05	593,330.66	611,812.10	32° 37' 51.2644 N	104° 6' 15.8616 W
2,472.00	5.10	245.80	2,470.20	-1.32	-25.72	593,327.13	611,804.43	32° 37' 51.2296 N	104° 6' 15.9514 W
2,567.00	4.80	248.60	2,564.84	-4.50	-33.27	593,323.95	611,796.87	32° 37' 51.1983 N	104° 6' 16.0398 W
2,663.00	5.30	246.90	2,660.47	-7.70	-41.09	593,320.74	611,789.06	32° 37' 51.1667 N	104° 6' 16.1313 W
2,758.00	5.20	250.40	2,755.07	-10.87	-49.18	593,317.58	611,780.96	32° 37' 51.1356 N	104° 6' 16.2260 W
2,853.00	5.00	247.00	2,849.70	-13.93	-57.05	593,314.51	611,773.10	32° 37' 51.1055 N	104° 6' 16.3181 W
2,949.00	4.80	246.70	2,945.35	-17.15	-64.59	593,311.29	611,765.56	32° 37' 51.0737 N	104° 6' 16.4063 W
3,044.00	5.10	249.90	3,039.99	-20.18	-72.20	593,308.27	611,757.94	32° 37' 51.0440 N	104° 6' 16.4955 W
3,140.00	5.60	249.20	3,135.57	-23.31	-80.59	593,305.14	611,749.56	32° 37' 51.0132 N	104° 6' 16.5936 W
3,235.00	6.40	251.60	3,230.05	-26.62	-89.95	593,301.82	611,740.20	32° 37' 50.9806 N	104° 6' 16.7031 W
3,331.00	6.20	252.00	3,325.47	-29.91	-99.95	593,298.53	611,730.19	32° 37' 50.9482 N	104° 6' 16.8202 W
3,427.00	6.00	251.80	3,420.93	-33.08	-109.65	593,295.36	611,720.49	32° 37' 50.9171 N	104° 6' 16.9337 W
3,449.00	5.80	251.80	3,442.81	-33.79	-111.80	593,294.65	611,718.35	32° 37' 50.9101 N	104° 6' 16.9588 W
3,517.00	5.90	251.80	3,510.46	-35.95	-118.38	593,292.49	611,711.76	32° 37' 50.8888 N	104° 6' 17.0359 W
3,612.00	6.20	251.80	3,604.93	-39.08	-127.89	593,289.36	611,702.25	32° 37' 50.8581 N	104° 6' 17.1472 W
3,707.00	5.10	258.80	3,699.47	-41.50	-136.91	593,286.94	611,693.23	32° 37' 50.8343 N	104° 6' 17.2527 W
3,801.00	4.80	262.70	3,793.12	-42.82	-144.91	593,285.63	611,685.24	32° 37' 50.8215 N	104° 6' 17.3463 W
3,896.00	5.70	260.90	3,887.72	-44.07	-153.51	593,284.38	611,676.63	32° 37' 50.8093 N	104° 6' 17.4469 W
3,989.00	6.70	259.00	3,980.17	-45.83	-163.40	593,282.61	611,666.75	32° 37' 50.7920 N	104° 6' 17.5625 W
4,084.00	6.80	255.50	4,074.51	-48.30	-174.28	593,280.15	611,655.86	32° 37' 50.7679 N	104° 6' 17.6899 W
4,178.00	6.20	249.50	4,167.91	-51.47	-184.42	593,276.97	611,645.72	32° 37' 50.7367 N	104° 6' 17.8086 W
4,272.00	6.20	251.10	4,261.36	-54.89	-193.98	593,273.55	611,636.16	32° 37' 50.7031 N	104° 6' 17.9204 W
4,367.00	5.50	251.60	4,355.87	-57.99	-203.15	593,270.45	611,626.99	32° 37' 50.6726 N	104° 6' 18.0278 W
4,462.00	5.20	249.50	4,450.45	-60.93	-211.51	593,267.51	611,618.64	32° 37' 50.6436 N	104° 6' 18.1255 W
4,556.00	5.00	250.40	4,544.08	-63.80	-219.35	593,264.64	611,610.79	32° 37' 50.6154 N	104° 6' 18.2174 W
4,651.00	5.20	261.10	4,638.71	-65.85	-227.51	593,262.59	611,602.64	32° 37' 50.5953 N	104° 6' 18.3128 W
4,746.00	5.00	264.30	4,733.33	-66.93	-235.88	593,261.51	611,594.26	32° 37' 50.5848 N	104° 6' 18.4107 W
4,840.00	4.70	258.80	4,826.99	-68.09	-243.73	593,260.36	611,586.41	32° 37' 50.5735 N	104° 6' 18.5026 W
4,936.00	5.10	253.00	4,922.64	-70.10	-251.67	593,258.34	611,578.47	32° 37' 50.5538 N	104° 6' 18.5955 W
5,030.00	5.50	251.30	5,016.24	-72.76	-259.94	593,255.68	611,570.21	32° 37' 50.5276 N	104° 6' 18.6921 W
5,125.00	5.50	248.60	5,110.80	-75.89	-268.49	593,252.56	611,561.66	32° 37' 50.4969 N	104° 6' 18.7922 W
5,220.00	4.90	247.70	5,205.41	-79.09	-276.48	593,249.36	611,553.66	32° 37' 50.4654 N	104° 6' 18.8858 W
5,315.00	4.20	250.90	5,300.11	-81.76	-283.52	593,246.68	611,546.62	32° 37' 50.4390 N	104° 6' 18.9682 W
5,411.00	4.20	253.70	5,395.85	-83.90	-290.22	593,244.54	611,539.93	32° 37' 50.4180 N	104° 6' 19.0465 W
5,506.00	4.00	253.90	5,490.61	-85.80	-296.74	593,242.65	611,533.40	32° 37' 50.3994 N	104° 6' 19.1229 W
5,602.00	4.40	250.70	5,586.35	-87.94	-303.43	593,240.50	611,526.71	32° 37' 50.3783 N	104° 6' 19.2012 W
5,697.00	4.70	246.70	5,681.05	-90.69	-310.45	593,237.76	611,519.70	32° 37' 50.3513 N	104° 6' 19.2833 W

LEAM Drilling Services

Survey Report - Geographic

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
TVD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,793.00	4.00	261.80	5,776.78	-92.72	-317.37	593,235.72	611,512.77	32° 37' 50.3313 N	104° 6' 19.3643 W
5,889.00	3.30	263.70	5,872.59	-93.50	-323.43	593,234.94	611,506.71	32° 37' 50.3238 N	104° 6' 19.4352 W
5,984.00	2.60	258.50	5,967.46	-94.23	-328.26	593,234.21	611,501.88	32° 37' 50.3166 N	104° 6' 19.4917 W
6,080.00	2.30	236.90	6,063.37	-95.72	-332.01	593,232.73	611,498.13	32° 37' 50.3020 N	104° 6' 19.5356 W
6,175.00	1.10	231.80	6,158.33	-97.32	-334.32	593,231.12	611,495.82	32° 37' 50.2862 N	104° 6' 19.5627 W
6,270.00	0.60	251.30	6,253.32	-98.04	-335.51	593,230.40	611,494.63	32° 37' 50.2790 N	104° 6' 19.5766 W
6,365.00	0.40	316.80	6,348.32	-97.96	-336.21	593,230.48	611,493.93	32° 37' 50.2799 N	104° 6' 19.5847 W
6,461.00	0.50	5.00	6,444.31	-97.30	-336.40	593,231.14	611,493.74	32° 37' 50.2864 N	104° 6' 19.5870 W
6,556.00	1.00	4.50	6,539.31	-96.06	-336.30	593,232.38	611,493.84	32° 37' 50.2987 N	104° 6' 19.5858 W
6,651.00	1.10	1.80	6,634.29	-94.32	-336.21	593,234.12	611,493.94	32° 37' 50.3159 N	104° 6' 19.5846 W
6,747.00	1.00	2.40	6,730.27	-92.56	-336.14	593,235.88	611,494.00	32° 37' 50.3333 N	104° 6' 19.5838 W
6,843.00	0.80	239.50	6,826.27	-92.07	-336.69	593,236.38	611,493.46	32° 37' 50.3382 N	104° 6' 19.5901 W
6,938.00	0.80	232.10	6,921.26	-92.81	-337.78	593,235.63	611,492.36	32° 37' 50.3309 N	104° 6' 19.6030 W
7,033.00	0.60	230.90	7,016.25	-93.53	-338.69	593,234.91	611,491.45	32° 37' 50.3237 N	104° 6' 19.6136 W
7,129.00	0.40	256.00	7,112.25	-93.93	-339.41	593,234.51	611,490.74	32° 37' 50.3198 N	104° 6' 19.6220 W
7,224.00	1.20	200.60	7,207.24	-94.94	-340.08	593,233.50	611,490.07	32° 37' 50.3098 N	104° 6' 19.6299 W
7,320.00	1.20	206.30	7,303.22	-96.78	-340.88	593,231.66	611,489.27	32° 37' 50.2916 N	104° 6' 19.6393 W
7,415.00	0.90	194.50	7,398.20	-98.40	-341.50	593,230.04	611,488.64	32° 37' 50.2757 N	104° 6' 19.6466 W
7,511.00	1.00	189.90	7,494.19	-99.95	-341.84	593,228.49	611,488.31	32° 37' 50.2603 N	104° 6' 19.6506 W
7,607.00	0.60	176.90	7,590.18	-101.28	-341.95	593,227.16	611,488.19	32° 37' 50.2471 N	104° 6' 19.6520 W
7,702.00	1.10	179.90	7,685.17	-102.69	-341.93	593,225.75	611,488.22	32° 37' 50.2332 N	104° 6' 19.6517 W
7,798.00	1.10	174.10	7,781.15	-104.53	-341.83	593,223.92	611,488.31	32° 37' 50.2150 N	104° 6' 19.6506 W
7,893.00	1.10	177.30	7,876.13	-106.35	-341.69	593,222.10	611,488.45	32° 37' 50.1970 N	104° 6' 19.6490 W
7,988.00	1.20	181.70	7,971.11	-108.25	-341.68	593,220.19	611,488.46	32° 37' 50.1782 N	104° 6' 19.6489 W
8,084.00	1.00	172.30	8,067.10	-110.09	-341.60	593,218.36	611,488.55	32° 37' 50.1600 N	104° 6' 19.6480 W
8,179.00	1.10	162.80	8,162.08	-111.78	-341.22	593,216.66	611,488.93	32° 37' 50.1433 N	104° 6' 19.6436 W
8,275.00	1.50	192.40	8,258.06	-113.89	-341.21	593,214.56	611,488.93	32° 37' 50.1224 N	104° 6' 19.6436 W
8,380.00	1.30	189.70	8,363.02	-116.40	-341.71	593,212.04	611,488.44	32° 37' 50.0975 N	104° 6' 19.6495 W
KOP (Onyx 11H)									
8,477.00	5.50	98.20	8,459.87	-118.15	-337.29	593,210.29	611,492.85	32° 37' 50.0801 N	104° 6' 19.5979 W
8,525.00	12.80	88.70	8,507.23	-118.36	-329.69	593,210.08	611,500.46	32° 37' 50.0779 N	104° 6' 19.5090 W
8,573.00	17.90	82.50	8,553.50	-117.27	-317.05	593,211.17	611,513.10	32° 37' 50.0884 N	104° 6' 19.3611 W
8,621.00	24.00	75.80	8,598.32	-113.91	-300.25	593,214.53	611,529.89	32° 37' 50.1213 N	104° 6' 19.1646 W
8,668.00	29.40	77.10	8,640.29	-108.99	-279.73	593,219.45	611,550.42	32° 37' 50.1695 N	104° 6' 18.9245 W
8,716.00	35.70	80.90	8,680.73	-104.14	-254.38	593,224.30	611,575.76	32° 37' 50.2170 N	104° 6' 18.6280 W
8,763.00	41.80	84.40	8,717.37	-100.44	-225.22	593,228.01	611,604.92	32° 37' 50.2530 N	104° 6' 18.2869 W
8,811.00	48.20	87.80	8,751.30	-98.19	-191.39	593,230.26	611,638.76	32° 37' 50.2746 N	104° 6' 17.8912 W
8,859.00	52.60	88.70	8,781.89	-97.07	-154.43	593,231.38	611,675.72	32° 37' 50.2849 N	104° 6' 17.4589 W
8,907.00	57.00	88.10	8,809.55	-95.97	-115.23	593,232.48	611,714.91	32° 37' 50.2949 N	104° 6' 17.0005 W
8,954.00	59.50	88.10	8,834.28	-94.64	-75.29	593,233.80	611,754.86	32° 37' 50.3072 N	104° 6' 16.5334 W
9,002.00	62.50	87.30	8,857.55	-92.95	-33.35	593,235.49	611,796.80	32° 37' 50.3230 N	104° 6' 16.0429 W
9,050.00	66.60	85.00	8,878.18	-90.03	9.88	593,238.41	611,840.03	32° 37' 50.3510 N	104° 6' 15.5373 W
9,098.00	69.50	83.20	8,896.12	-85.45	54.16	593,243.00	611,884.30	32° 37' 50.3954 N	104° 6' 15.0194 W
9,145.00	71.50	84.60	8,911.81	-80.74	98.21	593,247.70	611,928.35	32° 37' 50.4410 N	104° 6' 14.5042 W
9,193.00	76.90	86.20	8,924.87	-77.05	144.23	593,251.40	611,974.37	32° 37' 50.4766 N	104° 6' 13.9659 W
9,224.00	81.30	86.90	8,930.73	-75.22	174.61	593,253.23	612,004.75	32° 37' 50.4940 N	104° 6' 13.6106 W
FTP (Onyx 11H)									
9,269.00	86.00	87.80	8,935.71	-73.15	219.27	593,255.29	612,049.42	32° 37' 50.5135 N	104° 6' 13.0883 W
9,315.00	88.10	88.80	8,938.08	-71.79	265.19	593,256.65	612,095.33	32° 37' 50.5260 N	104° 6' 12.5513 W
9,360.00	88.40	91.50	8,939.45	-71.91	310.16	593,256.54	612,140.31	32° 37' 50.5239 N	104° 6' 12.0254 W
9,405.00	88.00	92.40	8,940.87	-73.44	355.11	593,255.00	612,185.26	32° 37' 50.5078 N	104° 6' 11.4998 W
9,453.00	87.80	91.80	8,942.62	-75.20	403.05	593,253.25	612,233.19	32° 37' 50.4894 N	104° 6' 10.9393 W
9,497.00	87.80	91.50	8,944.31	-76.46	447.00	593,251.98	612,277.14	32° 37' 50.4759 N	104° 6' 10.4253 W
9,588.00	88.50	92.40	8,947.25	-79.56	537.90	593,248.89	612,368.04	32° 37' 50.4433 N	104° 6' 9.3625 W
9,679.00	88.70	92.70	8,949.47	-83.60	628.78	593,244.84	612,458.92	32° 37' 50.4013 N	104° 6' 8.2998 W

LEAM Drilling Services

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Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
TVD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,774.00	88.60	92.50	8,951.71	-87.91	723.65	593,240.53	612,553.80	32° 37' 50.3566 N	104° 6' 7.1904 W
9,869.00	88.80	92.50	8,953.87	-92.06	818.54	593,236.39	612,648.68	32° 37' 50.3136 N	104° 6' 6.0809 W
9,964.00	88.60	92.00	8,956.02	-95.78	913.44	593,232.66	612,743.59	32° 37' 50.2747 N	104° 6' 4.9712 W
10,059.00	89.30	90.80	8,957.76	-98.10	1,008.40	593,230.34	612,838.54	32° 37' 50.2496 N	104° 6' 3.8609 W
10,155.00	89.20	90.20	8,959.02	-98.94	1,104.38	593,229.50	612,934.53	32° 37' 50.2393 N	104° 6' 2.7385 W
10,250.00	90.00	91.00	8,959.68	-99.94	1,199.37	593,228.51	613,029.52	32° 37' 50.2274 N	104° 6' 1.6277 W
10,346.00	89.30	90.80	8,960.27	-101.45	1,295.36	593,227.00	613,125.50	32° 37' 50.2104 N	104° 6' 0.5052 W
10,441.00	89.60	90.20	8,961.18	-102.27	1,390.35	593,226.17	613,220.49	32° 37' 50.2001 N	104° 5' 59.3944 W
10,537.00	89.60	89.50	8,961.85	-102.02	1,486.35	593,226.42	613,316.49	32° 37' 50.2005 N	104° 5' 58.2718 W
10,632.00	89.30	90.80	8,962.76	-102.27	1,581.34	593,226.17	613,411.48	32° 37' 50.1960 N	104° 5' 57.1610 W
10,728.00	88.80	90.20	8,964.36	-103.11	1,677.32	593,225.33	613,507.47	32° 37' 50.1856 N	104° 5' 56.0386 W
10,823.00	88.90	89.70	8,966.26	-103.03	1,772.30	593,225.42	613,602.45	32° 37' 50.1843 N	104° 5' 54.9279 W
10,919.00	89.30	90.40	8,967.77	-103.11	1,868.29	593,225.33	613,698.43	32° 37' 50.1814 N	104° 5' 53.8054 W
11,014.00	89.50	92.40	8,968.77	-105.43	1,963.25	593,223.01	613,793.40	32° 37' 50.1564 N	104° 5' 52.6950 W
11,109.00	89.70	91.80	8,969.43	-108.91	2,058.19	593,219.53	613,888.33	32° 37' 50.1198 N	104° 5' 51.5849 W
11,205.00	90.40	91.50	8,969.34	-111.68	2,154.15	593,216.77	613,984.29	32° 37' 50.0904 N	104° 5' 50.4629 W
11,300.00	89.80	91.30	8,969.18	-114.00	2,249.12	593,214.45	614,079.26	32° 37' 50.0653 N	104° 5' 49.3523 W
11,396.00	88.50	90.10	8,970.60	-115.17	2,345.09	593,213.27	614,175.24	32° 37' 50.0516 N	104° 5' 48.2300 W
11,491.00	88.30	89.70	8,973.26	-115.00	2,440.06	593,213.44	614,270.20	32° 37' 50.0511 N	104° 5' 47.1195 W
11,587.00	88.10	89.20	8,976.27	-114.08	2,536.01	593,214.36	614,366.15	32° 37' 50.0581 N	104° 5' 45.9975 W
11,683.00	88.70	88.00	8,978.95	-111.74	2,631.94	593,216.70	614,462.08	32° 37' 50.0792 N	104° 5' 44.8756 W
11,778.00	89.60	89.00	8,980.36	-109.25	2,726.89	593,219.19	614,557.04	32° 37' 50.1017 N	104° 5' 43.7651 W
11,874.00	90.00	89.40	8,980.70	-107.91	2,822.88	593,220.53	614,653.03	32° 37' 50.1129 N	104° 5' 42.6426 W
11,969.00	90.10	90.20	8,980.61	-107.58	2,917.88	593,220.86	614,748.02	32° 37' 50.1140 N	104° 5' 41.5317 W
12,065.00	89.30	91.50	8,981.12	-109.00	3,013.87	593,219.44	614,844.01	32° 37' 50.0978 N	104° 5' 40.4092 W
12,160.00	89.40	91.30	8,982.19	-111.33	3,108.83	593,217.12	614,938.97	32° 37' 50.0727 N	104° 5' 39.2988 W
12,256.00	89.90	90.80	8,982.78	-113.08	3,204.81	593,215.36	615,034.96	32° 37' 50.0532 N	104° 5' 38.1764 W
12,351.00	89.30	90.60	8,983.44	-114.25	3,299.80	593,214.20	615,129.95	32° 37' 50.0396 N	104° 5' 37.0656 W
12,446.00	89.30	90.60	8,984.60	-115.24	3,394.79	593,213.20	615,224.93	32° 37' 50.0276 N	104° 5' 35.9549 W
12,542.00	89.80	90.10	8,985.36	-115.83	3,490.78	593,212.62	615,320.93	32° 37' 50.0197 N	104° 5' 34.8323 W
12,637.00	90.20	89.50	8,985.36	-115.49	3,585.78	593,212.95	615,415.93	32° 37' 50.0208 N	104° 5' 33.7214 W
12,733.00	90.20	89.40	8,985.02	-114.57	3,681.78	593,213.87	615,511.92	32° 37' 50.0278 N	104° 5' 32.5988 W
12,828.00	89.40	89.00	8,985.35	-113.25	3,776.77	593,215.20	615,606.91	32° 37' 50.0388 N	104° 5' 31.4880 W
12,924.00	88.60	89.20	8,987.03	-111.74	3,872.74	593,216.70	615,702.88	32° 37' 50.0515 N	104° 5' 30.3656 W
13,019.00	88.70	90.20	8,989.27	-111.24	3,967.71	593,217.20	615,797.86	32° 37' 50.0543 N	104° 5' 29.2550 W
13,115.00	87.60	91.10	8,992.37	-112.33	4,063.65	593,216.11	615,893.80	32° 37' 50.0414 N	104° 5' 28.1331 W
13,210.00	86.30	90.20	8,997.42	-113.41	4,158.51	593,215.04	615,988.65	32° 37' 50.0286 N	104° 5' 27.0239 W
13,306.00	86.30	89.90	9,003.62	-113.49	4,254.31	593,214.95	616,084.45	32° 37' 50.0256 N	104° 5' 25.9036 W
13,401.00	87.00	89.20	9,009.17	-112.75	4,349.14	593,215.70	616,179.29	32° 37' 50.0308 N	104° 5' 24.7946 W
13,496.00	87.50	88.80	9,013.73	-111.09	4,444.02	593,217.35	616,274.16	32° 37' 50.0451 N	104° 5' 23.6851 W
13,592.00	87.40	89.50	9,018.00	-109.67	4,539.91	593,218.78	616,370.06	32° 37' 50.0570 N	104° 5' 22.5637 W
13,687.00	87.80	91.10	9,021.98	-110.16	4,634.82	593,218.28	616,464.97	32° 37' 50.0499 N	104° 5' 21.4538 W
13,783.00	88.50	91.00	9,025.08	-111.92	4,730.76	593,216.52	616,560.90	32° 37' 50.0303 N	104° 5' 20.3320 W
13,879.00	90.00	90.60	9,026.33	-113.26	4,826.74	593,215.18	616,656.88	32° 37' 50.0149 N	104° 5' 19.2097 W
13,974.00	88.50	90.40	9,027.58	-114.09	4,921.72	593,214.35	616,751.87	32° 37' 50.0045 N	104° 5' 18.0989 W
14,070.00	89.00	90.60	9,029.67	-114.93	5,017.70	593,213.51	616,847.84	32° 37' 49.9940 N	104° 5' 16.9766 W
14,165.00	87.50	90.60	9,032.57	-115.92	5,112.64	593,212.52	616,942.79	32° 37' 49.9820 N	104° 5' 15.8663 W
14,260.00	87.80	90.60	9,036.47	-116.92	5,207.56	593,211.53	617,037.70	32° 37' 49.9700 N	104° 5' 14.7564 W
14,356.00	87.50	90.20	9,040.40	-117.59	5,303.47	593,210.86	617,133.62	32° 37' 49.9612 N	104° 5' 13.6348 W
14,451.00	88.00	90.20	9,044.13	-117.92	5,398.40	593,210.53	617,228.54	32° 37' 49.9557 N	104° 5' 12.5248 W
14,546.00	88.50	90.10	9,047.03	-118.17	5,493.36	593,210.28	617,323.50	32° 37' 49.9511 N	104° 5' 11.4144 W
14,642.00	87.30	90.20	9,050.55	-118.42	5,589.29	593,210.03	617,419.43	32° 37' 49.9464 N	104° 5' 10.2925 W
14,737.00	88.30	89.70	9,054.20	-118.33	5,684.22	593,210.11	617,514.36	32° 37' 49.9450 N	104° 5' 9.1824 W
14,832.00	88.80	90.10	9,056.60	-118.17	5,779.19	593,210.27	617,609.33	32° 37' 49.9445 N	104° 5' 8.0719 W
14,927.00	89.00	89.90	9,058.43	-118.17	5,874.17	593,210.27	617,704.31	32° 37' 49.9423 N	104° 5' 6.9611 W

LEAM Drilling Services

Survey Report - Geographic

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PWU 29-28
Well: 11H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 11H
TVD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
MD Reference: 3310.0' GE + 23.5' KB @ 3333.50usft
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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,023.00	89.10	89.90	9,060.02	-118.00	5,970.16	593,210.44	617,800.30	32° 37' 49.9417 N	104° 5' 5.8387 W
15,118.00	88.90	90.20	9,061.67	-118.08	6,065.14	593,210.36	617,895.28	32° 37' 49.9387 N	104° 5' 4.7279 W
15,214.00	89.80	89.40	9,062.76	-117.75	6,161.13	593,210.69	617,991.28	32° 37' 49.9398 N	104° 5' 3.6054 W
15,309.00	90.00	89.40	9,062.93	-116.75	6,256.13	593,211.69	618,086.27	32° 37' 49.9474 N	104° 5' 2.4945 W
15,405.00	90.20	89.50	9,062.76	-115.83	6,352.12	593,212.61	618,182.27	32° 37' 49.9543 N	104° 5' 1.3719 W
15,500.00	90.70	89.90	9,062.02	-115.34	6,447.12	593,213.11	618,277.26	32° 37' 49.9570 N	104° 5' 0.2610 W
15,595.00	89.90	89.40	9,061.52	-114.75	6,542.11	593,213.69	618,372.26	32° 37' 49.9606 N	104° 4' 59.1501 W
15,690.00	90.00	89.40	9,061.60	-113.76	6,637.11	593,214.68	618,467.25	32° 37' 49.9682 N	104° 4' 58.0392 W
15,785.00	90.70	89.70	9,061.02	-113.01	6,732.10	593,215.43	618,562.25	32° 37' 49.9734 N	104° 4' 56.9283 W
15,881.00	90.00	89.40	9,060.43	-112.26	6,828.10	593,216.18	618,658.24	32° 37' 49.9786 N	104° 4' 55.8058 W
15,976.00	90.30	89.70	9,060.19	-111.51	6,923.09	593,216.93	618,753.24	32° 37' 49.9837 N	104° 4' 54.6949 W
16,072.00	90.00	89.40	9,059.93	-110.76	7,019.09	593,217.68	618,849.23	32° 37' 49.9889 N	104° 4' 53.5723 W
16,167.00	89.20	89.70	9,060.60	-110.01	7,114.08	593,218.43	618,944.23	32° 37' 49.9941 N	104° 4' 52.4614 W
16,262.00	89.30	89.90	9,061.84	-109.68	7,209.08	593,218.76	619,039.22	32° 37' 49.9951 N	104° 4' 51.3505 W
16,358.00	89.40	89.90	9,062.93	-109.51	7,305.07	593,218.93	619,135.21	32° 37' 49.9945 N	104° 4' 50.2280 W
16,454.00	90.10	90.10	9,063.35	-109.51	7,401.07	593,218.93	619,231.21	32° 37' 49.9923 N	104° 4' 49.1054 W
16,549.00	89.90	90.20	9,063.35	-109.76	7,496.07	593,218.68	619,326.21	32° 37' 49.9876 N	104° 4' 47.9945 W
16,591.00	90.12	90.16	9,063.34	-109.90	7,538.07	593,218.55	619,368.21	32° 37' 49.9853 N	104° 4' 47.5033 W
LTP (Onyx 11H)									
16,591.35	90.12	90.16	9,063.34	-109.90	7,538.42	593,218.55	619,368.56	32° 37' 49.9853 N	104° 4' 47.4992 W
PBHL (Onyx 11H)									
16,666.00	90.50	90.10	9,062.94	-110.07	7,613.07	593,218.37	619,443.21	32° 37' 49.9818 N	104° 4' 46.6263 W
16,743.00	90.50	90.10	9,062.27	-110.20	7,690.06	593,218.24	619,520.20	32° 37' 49.9786 N	104° 4' 45.7259 W
Projection - BHL (Onyx 11H)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (Onyx 11H)									
- actual wellpath hits target center	0.00	0.00	0.00	0.00	0.00	593,328.44	611,830.14	32° 37' 51.2421 N	104° 6' 15.6506 W
- Point									
KOP (Onyx 11H)									
- actual wellpath hits target center	0.00	0.00	8,363.02	-116.40	-341.71	593,212.04	611,488.43	32° 37' 50.0975 N	104° 6' 19.6495 W
- Point									
FTP (Onyx 11H)									
- actual wellpath hits target center	0.00	0.00	8,930.73	-75.22	174.61	593,253.22	612,004.75	32° 37' 50.4940 N	104° 6' 13.6106 W
- Point									
BHL (Onyx 11H)									
- actual wellpath hits target center	0.00	0.00	9,062.27	-110.20	7,690.06	593,218.24	619,520.20	32° 37' 49.9787 N	104° 4' 45.7259 W
- Point									
LTP (Onyx 11H)									
- actual wellpath hits target center	0.00	0.00	9,063.34	-109.90	7,538.07	593,218.54	619,368.21	32° 37' 49.9852 N	104° 4' 47.5033 W
- Point									

LEAM Drilling Services

Survey Report - Geographic

Company:	Devon Energy	Local Co-ordinate Reference:	Well 11H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3310.0' GE + 23.5' KB @ 3333.50usft
Site:	Onyx PWU 29-28	MD Reference:	3310.0' GE + 23.5' KB @ 3333.50usft
Well:	11H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
16,743.00	9,062.27	-110.20	7,690.06	Projection

Checked By: _____	Approved By: _____	Date: _____
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