



**NM OIL CONSERVATION
ARTESIA DISTRICT**

JUL 05 2018

RECEIVED

November 16, 2017

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

Attn: Ian Norwalk

**Re: Final Directional Report
Onyx PWU 29-28 61H
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-170849 for the (OH) from October 27, 2017 to November 15, 2017;
Drilling start depth of 1,354' MD to 19,087' 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



Final Directional Report

Devon Energy

Onyx PWU 29-28 61H

Eddy County, NM

Prepared for Ian Norwalk



TABLE OF CONTENTS

PROPOSED VS. ACTUAL PLOT.....	SECTION 1
DAILY DRILLING REPORTS	SECTION 2
BOTTOM HOLE ASSEMBLY/ MUD MOTOR RECAP	SECTION 3
BHA SUMMARY	SECTION 4
SLIDE SHEETS.....	SECTION 5
JOB CHARTS - SUMMARY	SECTION 6

SECTION 1
PROPOSED VS. ACTUAL PLOT

Devon Energy

Project: Eddy County, NM (NAD-83)
 Site: Onyx PWU 29-28
 Well: 61H
 Wellbore: OH
 Design: OH



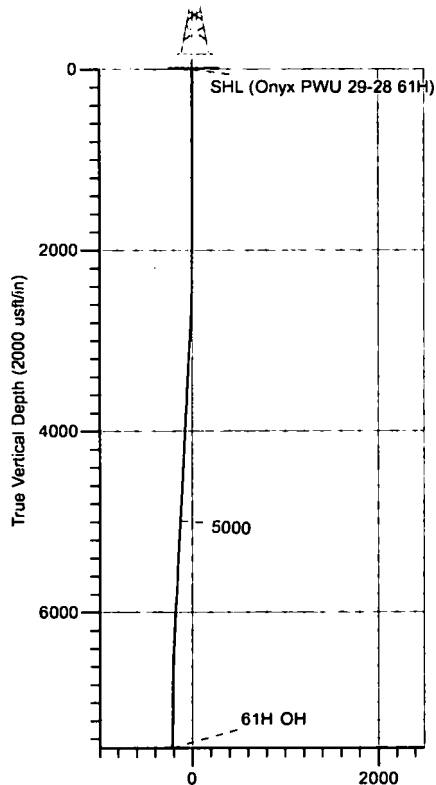
Azimuths to Grid North
 True North: -0.12°
 Magnetic North: 7.28°
 Magnetic Field
 Strength: 48164.6snT
 Dip Angle: 60.50°
 Date: 10/19/2017
 Model: HDGM

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

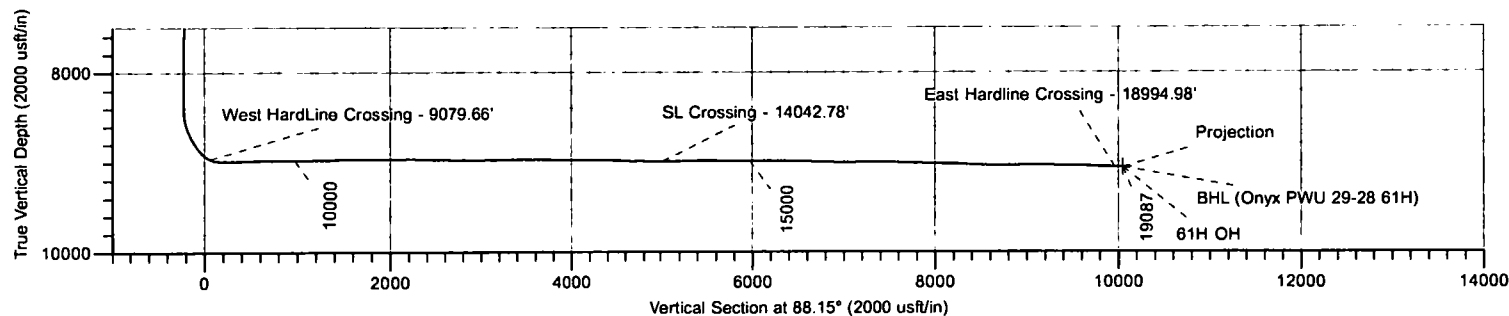
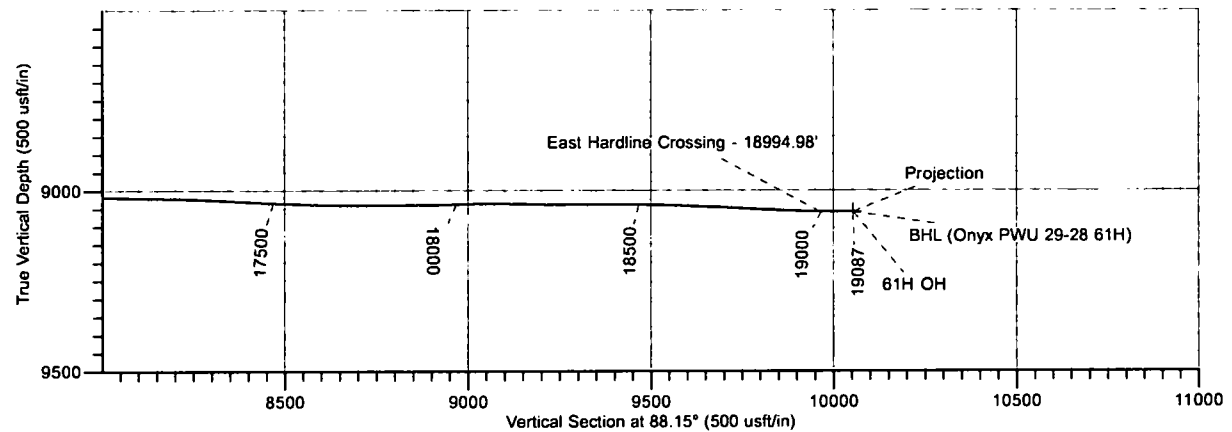


3308.7' GE + 23.5' RKB @ 3332.20usft
 Ground Level: 3308.70



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL (Onyx PWU 29-28 61H)	9059.72	327.79	10048.48	32° 38' 7.1436 N	104° 4' 19.3269 W
SHL (Onyx PWU 29-28 61H)	0.00	0.00	0.00	32° 38' 4.1292 N	104° 6' 16.8482 W



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

Design: OH (61H/OH)
 Onyx PWU 29-28
 Created By: Dustin Ault
 Date: 20:18, November 21 2017
 Approved: _____
 Date: _____

Devon Energy

Project: Eddy County, NM (NAD-83)

Site: Onyx PWU 29-28

Well: 61H

Wellbore: OH

Design: OH

devon



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

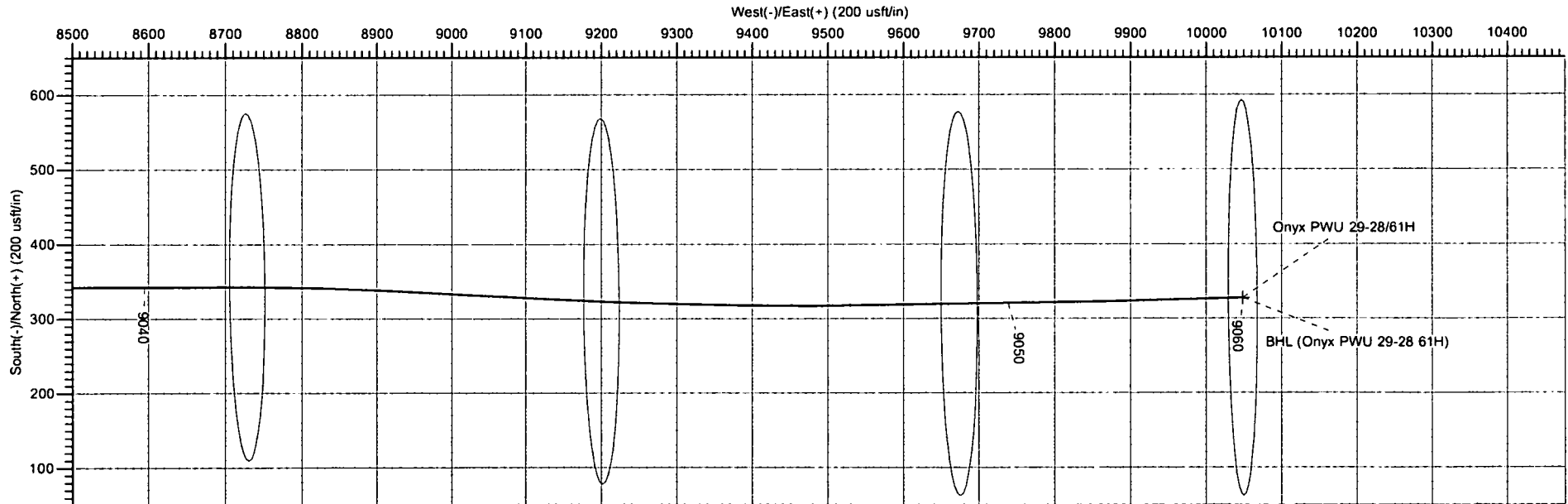
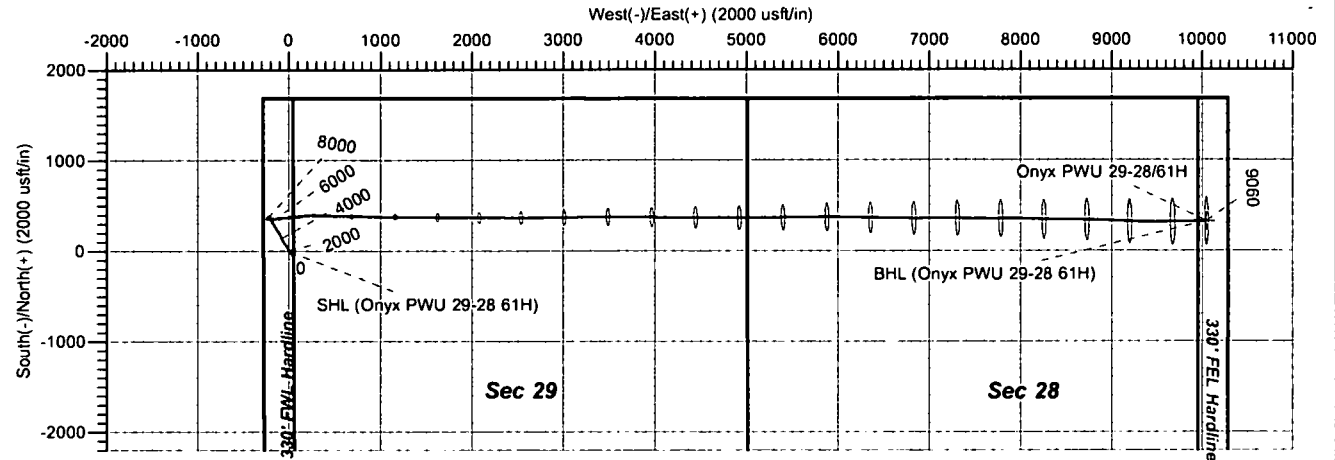
Magnetic Field
Strength: 48164.6nT
Dip Angle: 60.50°
Date: 10/19/2017
Model: HDGM

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

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (Onyx PWU 29-28 61H)	0.00	0.00	0.00	594630.56	611724.93	32° 38' 4.1292 N	104° 6' 16.8482 W
BHL (Onyx PWU 29-28 61H)	9059.72	327.79	10048.48	594958.35	621773.41	32° 38' 7.1436 N	104° 4' 19.3269 W

Actual Lines
SHL: 1690' FNL & 280' FWL of Sec. 29
BHL: 1354' FNL & 238' FEL of Sec. 28
Section Crossing: 14042.78' MD
West HL Crossing: 9079.66' MD
East HL Crossing: 18994.98' MD



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

Design: OH (61H/OH)
Onyx PWU 29-28
Created By: Dustin Ault
Date: _____
Approved: _____
Date: 19/49, November 21 2017

Devon Energy

Eddy County, NM (NAD-83)

Onyx PWU 29-28

61H

OH

Design: OH

Standard Survey Report

21 November, 2017

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 61H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3308.7' GE + 23.5' RKB @ 3332.20usft
Site:	Onyx PWU 29-28	MD Reference:	3308.7' GE + 23.5' RKB @ 3332.20usft
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	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	61H				
Well Position	+N/-S	0.00 usft	Northing:	594,630.56 usft	Latitude: 32° 38' 4.1292 N
	+E/-W	0.00 usft	Easting:	611,724.93 usft	Longitude: 104° 6' 16.8482 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level: 3,308.70 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/19/2017	7.40	60.50	48,165

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	88.15	

Survey Program	Date 11/21/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.00	1,263.00	Survey #1 - Gyro (OH)	SDI Keeper	Keeper Standard Rate Gyro	
1,354.00	18,994.00	Survey #2 - MWD (OH)	LEAM MWD+HDGM	MWD+HDGM	
19,087.00	19,087.00	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)	
2,011.00	0.60	336.50	2,010.94	9.08	2.45	2.74	0.21	-0.21	-3.54	
2,107.00	0.70	334.80	2,106.94	10.07	2.00	2.32	0.11	0.10	-1.77	
2,202.00	0.60	330.70	2,201.93	11.03	1.51	1.86	0.12	-0.11	-4.32	
2,298.00	0.60	333.70	2,297.92	11.92	1.04	1.42	0.03	0.00	3.13	
2,393.00	1.10	322.60	2,392.91	13.09	0.26	0.68	0.55	0.53	-11.68	
2,489.00	2.10	321.90	2,488.87	15.20	-1.38	-0.89	1.04	1.04	-0.73	
2,584.00	3.20	325.30	2,583.77	18.75	-3.97	-3.36	1.17	1.16	3.58	
2,680.00	4.00	328.60	2,679.58	23.81	-7.24	-6.46	0.86	0.83	3.44	

LEAM Drilling Systems LLC

Survey Report

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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)
2,776.00	4.90	328.60	2,775.29	30.17	-11.12	-10.14	0.94	0.94	0.00
2,871.00	5.90	326.90	2,869.87	37.72	-15.90	-14.67	1.07	1.05	-1.79
2,967.00	6.00	326.90	2,965.35	46.06	-21.33	-19.83	0.10	0.10	0.00
3,062.00	5.80	326.30	3,059.85	54.21	-26.71	-24.94	0.22	-0.21	-0.63
3,158.00	5.60	325.40	3,155.37	62.11	-32.06	-30.04	0.23	-0.21	-0.94
3,253.00	6.20	325.10	3,249.87	70.13	-37.62	-35.34	0.63	0.63	-0.32
3,349.00	6.10	325.10	3,345.32	78.56	-43.51	-40.95	0.10	-0.10	0.00
3,457.00	5.90	325.60	3,452.73	87.85	-49.93	-47.07	0.19	-0.19	0.46
3,527.00	5.50	327.70	3,522.38	93.65	-53.75	-50.70	0.64	-0.57	3.00
3,623.00	5.90	332.10	3,617.91	101.90	-58.52	-55.20	0.62	0.42	4.58
3,718.00	7.10	331.10	3,712.29	111.36	-63.64	-60.01	1.27	1.26	-1.05
3,814.00	7.40	329.80	3,807.53	121.90	-69.62	-65.65	0.36	0.31	-1.35
3,909.00	6.90	329.50	3,901.79	132.10	-75.59	-71.29	0.53	-0.53	-0.32
4,005.00	6.50	332.10	3,997.13	141.87	-81.06	-76.44	0.52	-0.42	2.71
4,100.00	6.10	335.50	4,091.56	151.22	-85.67	-80.75	0.58	-0.42	3.58
4,196.00	5.80	340.00	4,187.04	160.42	-89.45	-84.22	0.58	-0.31	4.69
4,291.00	6.20	339.90	4,281.52	169.74	-92.85	-87.32	0.42	0.42	-0.11
4,387.00	7.20	336.70	4,376.86	180.14	-97.01	-91.15	1.11	1.04	-3.33
4,483.00	7.30	330.70	4,472.10	190.98	-102.38	-96.16	0.80	0.10	-6.25
4,578.00	6.90	324.60	4,566.37	200.90	-108.64	-102.09	0.90	-0.42	-6.42
4,674.00	6.10	324.20	4,661.75	209.73	-114.96	-108.13	0.83	-0.83	-0.42
4,769.00	6.10	324.90	4,756.21	217.96	-120.82	-113.72	0.08	0.00	0.74
4,865.00	6.00	324.20	4,851.68	226.20	-126.68	-119.32	0.13	-0.10	-0.73
4,960.00	5.50	323.30	4,946.20	233.88	-132.31	-124.69	0.53	-0.53	-0.95
5,056.00	6.20	330.50	5,041.70	242.08	-137.61	-129.72	1.06	0.73	7.50
5,151.00	6.20	334.60	5,136.15	251.18	-142.34	-134.15	0.47	0.00	4.32
5,247.00	6.20	327.20	5,231.59	260.22	-147.37	-138.89	0.83	0.00	-7.71
5,342.00	6.20	328.60	5,326.03	268.91	-152.82	-144.06	0.16	0.00	1.47
5,438.00	6.00	327.20	5,421.49	277.55	-158.24	-149.20	0.26	-0.21	-1.46
5,534.00	6.00	329.30	5,516.96	286.08	-163.52	-154.20	0.23	0.00	2.19
5,629.00	6.00	329.70	5,611.44	294.64	-168.56	-158.96	0.04	0.00	0.42
5,725.00	5.70	331.60	5,706.94	303.16	-173.36	-163.48	0.37	-0.31	1.98
5,820.00	6.20	328.60	5,801.43	311.69	-178.28	-168.12	0.62	0.53	-3.16
5,916.00	5.80	327.60	5,896.90	320.21	-183.58	-173.14	0.43	-0.42	-1.04
6,011.00	6.10	328.30	5,991.39	328.56	-188.80	-178.09	0.32	0.32	0.74
6,107.00	5.70	328.40	6,086.88	336.96	-193.98	-183.00	0.42	-0.42	0.10
6,203.00	5.50	324.00	6,182.43	344.74	-199.18	-187.95	0.49	-0.21	-4.58
6,298.00	4.70	321.00	6,277.05	351.45	-204.31	-192.85	0.89	-0.84	-3.16
6,394.00	4.10	320.20	6,372.76	357.14	-208.98	-197.34	0.63	-0.63	-0.83
6,489.00	3.80	320.70	6,467.54	362.19	-213.15	-201.34	0.32	-0.32	0.53
6,585.00	3.50	324.00	6,563.34	367.02	-216.88	-204.92	0.38	-0.31	3.44
6,680.00	2.40	324.90	6,658.22	371.00	-219.73	-207.64	1.16	-1.16	0.95
6,776.00	1.00	330.20	6,754.17	373.37	-221.30	-209.13	1.47	-1.46	5.52
6,872.00	1.40	325.80	6,850.15	375.06	-222.38	-210.15	0.43	0.42	-4.58

LEAM Drilling Systems LLC

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 61H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3308.7' GE + 23.5' RKB @ 3332.20usft
Site:	Onyx PWU 29-28	MD Reference:	3308.7' GE + 23.5' RKB @ 3332.20usft
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)
6,967.00	0.40	278.50	6,945.14	376.07	-223.36	-211.10	1.23	-1.05	-49.79
7,063.00	0.50	243.90	7,041.14	375.94	-224.07	-211.81	0.30	0.10	-36.04
7,158.00	0.80	237.20	7,136.13	375.40	-225.00	-212.76	0.33	0.32	-7.05
7,254.00	0.60	229.30	7,232.12	374.71	-225.94	-213.73	0.23	-0.21	-8.23
7,349.00	0.80	233.20	7,327.12	373.98	-226.85	-214.66	0.22	0.21	4.11
7,444.00	1.10	246.00	7,422.10	373.22	-228.21	-216.05	0.38	0.32	13.47
7,540.00	0.80	244.10	7,518.09	372.55	-229.66	-217.51	0.31	-0.31	-1.98
7,635.00	1.80	243.50	7,613.06	371.59	-231.59	-219.47	1.05	1.05	-0.63
7,731.00	1.80	223.80	7,709.02	369.83	-233.98	-221.92	0.64	0.00	-20.52
7,826.00	1.10	198.50	7,803.99	367.89	-235.30	-223.31	0.98	-0.74	-26.63
7,922.00	0.90	156.90	7,899.97	366.32	-235.30	-223.35	0.76	-0.21	-43.33
8,017.00	1.10	189.90	7,994.96	364.74	-235.17	-223.27	0.63	0.21	34.74
8,113.00	1.30	195.90	8,090.94	362.78	-235.62	-223.79	0.25	0.21	6.25
8,208.00	1.30	201.30	8,185.91	360.74	-236.31	-224.54	0.13	0.00	5.68
8,304.00	1.00	194.00	8,281.90	358.92	-236.91	-225.20	0.35	-0.31	-7.60
8,368.00	0.80	201.00	8,345.89	357.96	-237.20	-225.52	0.36	-0.31	10.94
8,457.00	2.32	105.98	8,434.86	356.88	-235.69	-224.05	2.83	1.71	-106.76
8,505.00	7.30	95.23	8,482.68	356.33	-231.72	-220.10	10.50	10.38	-22.40
8,553.00	11.40	89.70	8,530.03	356.08	-223.94	-212.32	8.73	8.54	-11.52
8,601.00	15.21	89.87	8,576.73	356.12	-212.89	-201.28	7.94	7.94	0.35
8,648.00	18.60	89.94	8,621.70	356.14	-199.23	-187.62	7.21	7.21	0.15
8,696.00	22.26	91.25	8,666.67	355.95	-182.48	-170.89	7.68	7.63	2.73
8,744.00	25.15	88.65	8,710.62	355.99	-163.19	-151.61	6.40	6.02	-5.42
8,807.00	30.19	85.96	8,766.40	357.43	-133.98	-122.37	8.24	8.00	-4.27
8,837.00	31.35	84.98	8,792.17	358.64	-118.68	-107.04	4.21	3.87	-3.27
8,869.00	33.03	83.98	8,819.25	360.28	-101.71	-90.03	5.51	5.25	-3.13
8,901.00	36.86	83.70	8,845.48	362.25	-83.50	-71.76	11.98	11.97	-0.88
8,933.00	40.16	84.45	8,870.51	364.30	-63.68	-51.89	10.42	10.31	2.34
8,961.00	43.70	84.80	8,891.34	366.05	-45.05	-33.21	12.67	12.64	1.25
8,993.00	47.80	84.30	8,913.67	368.24	-22.24	-10.34	12.86	12.81	-1.56
9,025.00	54.20	83.90	8,933.79	370.79	2.48	14.45	20.02	20.00	-1.25
9,056.00	60.80	83.90	8,950.44	373.57	28.46	40.51	21.29	21.29	0.00
9,079.66	65.83	84.88	8,961.06	375.63	49.50	61.60	21.56	21.25	4.12
West HardLine Crossing - 9079.66'									
9,088.00	67.60	85.20	8,964.36	376.30	57.13	69.25	21.56	21.26	3.90
9,120.00	74.20	85.90	8,974.83	378.64	87.26	99.44	20.73	20.63	2.19
9,131.00	76.90	85.50	8,977.57	379.44	97.88	110.08	24.80	24.55	-3.64
9,146.00	79.50	84.43	8,980.64	380.73	112.50	124.74	18.69	17.33	-7.13
9,178.00	86.13	83.22	8,984.64	384.14	144.05	156.38	21.06	20.72	-3.78
9,210.00	87.77	82.78	8,986.34	388.03	175.77	188.20	5.31	5.13	-1.38
9,240.00	90.03	84.24	8,986.92	391.42	205.57	218.09	8.97	7.53	4.87
9,273.00	90.51	87.88	8,986.76	393.69	238.48	251.07	11.13	1.45	11.03
9,305.00	90.84	89.91	8,986.39	394.31	270.47	283.06	6.43	1.03	6.34

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
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Site: Onyx PWU 29-28
Well: 61H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 61H
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Survey

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9,337.00	91.24	91.82	8,985.80	393.83	302.46	315.02	6.10	1.25	5.97
9,433.00	91.71	91.96	8,983.33	390.66	398.38	410.78	0.51	0.49	0.15
9,528.00	91.78	92.05	8,980.44	387.34	493.27	505.52	0.12	0.07	0.09
9,624.00	91.61	91.95	8,977.60	383.99	589.17	601.26	0.21	-0.18	-0.10
9,718.00	90.28	91.08	8,976.05	381.51	683.13	695.09	1.69	-1.41	-0.93
9,814.00	88.98	90.56	8,976.67	380.13	779.11	790.98	1.46	-1.35	-0.54
9,909.00	88.23	90.34	8,978.98	379.39	874.08	885.87	0.82	-0.79	-0.23
10,004.00	88.77	90.17	8,981.47	378.96	969.05	980.77	0.60	0.57	-0.18
10,099.00	91.33	91.27	8,981.39	377.77	1,064.03	1,075.67	2.93	2.69	1.16
10,195.00	92.11	91.42	8,978.51	375.52	1,159.96	1,171.48	0.83	0.81	0.16
10,291.00	91.79	90.75	8,975.24	373.70	1,255.88	1,267.29	0.77	-0.33	-0.70
10,386.00	91.89	90.46	8,972.19	372.70	1,350.83	1,362.16	0.32	0.11	-0.31
10,477.00	91.47	90.41	8,969.52	372.01	1,441.79	1,453.05	0.46	-0.46	-0.05
10,567.00	90.66	90.35	8,967.85	371.41	1,531.77	1,542.96	0.90	-0.90	-0.07
10,660.00	90.58	90.09	8,966.84	371.05	1,624.76	1,635.90	0.29	-0.09	-0.28
10,752.00	90.16	90.53	8,966.25	370.56	1,716.76	1,727.83	0.66	-0.46	0.48
10,842.00	90.16	91.18	8,966.00	369.21	1,806.75	1,817.73	0.72	0.00	0.72
10,933.00	90.09	91.55	8,965.80	367.04	1,897.72	1,908.58	0.41	-0.08	0.41
11,023.00	89.69	90.12	8,965.97	365.73	1,987.71	1,998.48	1.65	-0.44	-1.59
11,115.00	89.44	89.46	8,966.67	366.07	2,079.71	2,090.44	0.77	-0.27	-0.72
11,206.00	88.97	89.87	8,967.93	366.60	2,170.70	2,181.40	0.69	-0.52	0.45
11,299.00	89.24	89.97	8,969.38	366.73	2,263.68	2,274.34	0.31	0.29	0.11
11,389.00	89.29	90.11	8,970.54	366.67	2,353.68	2,364.29	0.17	0.06	0.16
11,480.00	89.30	90.29	8,971.66	366.35	2,444.67	2,455.22	0.20	0.01	0.20
11,572.00	89.08	90.20	8,972.96	365.96	2,536.66	2,547.15	0.26	-0.24	-0.10
11,664.00	88.75	90.20	8,974.70	365.64	2,628.64	2,639.08	0.36	-0.36	0.00
11,760.00	88.01	89.78	8,977.41	365.65	2,724.60	2,734.99	0.89	-0.77	-0.44
11,855.00	89.02	89.19	8,979.88	366.51	2,819.57	2,829.93	1.23	1.06	-0.62
11,951.00	90.26	89.37	8,980.48	367.71	2,915.55	2,925.91	1.31	1.29	0.19
12,046.00	91.02	89.44	8,979.42	368.70	3,010.54	3,020.88	0.80	0.80	0.07
12,142.00	91.27	89.40	8,977.50	369.67	3,106.52	3,116.83	0.26	0.26	-0.04
12,237.00	91.52	89.50	8,975.19	370.58	3,201.49	3,211.78	0.28	0.26	0.11
12,333.00	90.01	89.65	8,973.91	371.30	3,297.47	3,307.74	1.58	-1.57	0.16
12,429.00	90.18	89.83	8,973.75	371.73	3,393.47	3,403.70	0.26	0.18	0.19
12,524.00	89.68	89.97	8,973.86	371.90	3,488.47	3,498.66	0.55	-0.53	0.15
12,620.00	89.59	90.15	8,974.47	371.80	3,584.47	3,594.60	0.21	-0.09	0.19
12,715.00	89.83	90.10	8,974.96	371.59	3,679.47	3,689.54	0.26	0.25	-0.05
12,811.00	90.16	90.06	8,974.96	371.46	3,775.47	3,785.49	0.35	0.34	-0.04
12,906.00	88.85	89.85	8,975.78	371.53	3,870.46	3,880.44	1.40	-1.38	-0.22
13,002.00	89.19	89.82	8,977.43	371.81	3,966.45	3,976.38	0.36	0.35	-0.03
13,098.00	90.73	90.06	8,977.49	371.91	4,062.44	4,072.33	1.62	1.60	0.25
13,193.00	89.49	90.47	8,977.31	371.47	4,157.44	4,167.26	1.37	-1.31	0.43
13,289.00	89.92	90.42	8,977.81	370.72	4,253.44	4,263.19	0.45	0.45	-0.05

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Onyx PVU 29-28
Well: 61H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 61H
TVD Reference: 3308.7' GE + 23.5' RKB @ 3332.20usft
MD Reference: 3308.7' GE + 23.5' RKB @ 3332.20usft
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)
13,384.00	90.16	90.20	8,977.74	370.21	4,348.43	4,358.12	0.34	0.25	-0.23
13,480.00	88.26	90.95	8,979.06	369.24	4,444.41	4,454.02	2.13	-1.98	0.78
13,575.00	88.12	90.76	8,982.06	367.83	4,539.36	4,548.87	0.25	-0.15	-0.20
13,671.00	88.26	90.39	8,985.10	366.86	4,635.30	4,644.73	0.41	0.15	-0.39
13,766.00	88.45	90.17	8,987.82	366.40	4,730.26	4,739.63	0.31	0.20	-0.23
13,862.00	88.91	90.27	8,990.03	366.03	4,826.24	4,835.54	0.49	0.48	0.10
13,957.00	89.34	90.13	8,991.48	365.70	4,921.23	4,930.47	0.48	0.45	-0.15
14,042.78	89.81	89.80	8,992.12	365.75	5,007.00	5,016.20	0.67	0.55	-0.39
SL Crossing - 14042.78'									
14,053.00	89.87	89.76	8,992.15	365.79	5,017.22	5,026.42	0.67	0.55	-0.39
14,148.00	90.21	89.73	8,992.08	366.22	5,112.22	5,121.38	0.36	0.36	-0.03
14,244.00	90.76	89.47	8,991.27	366.89	5,208.21	5,217.34	0.63	0.57	-0.27
14,339.00	91.05	89.36	8,989.77	367.86	5,303.20	5,312.31	0.33	0.31	-0.12
14,435.00	91.61	89.08	8,987.54	369.16	5,399.16	5,408.27	0.65	0.58	-0.29
14,530.00	90.52	89.15	8,985.77	370.63	5,494.13	5,503.23	1.15	-1.15	0.07
14,626.00	89.98	89.17	8,985.35	372.04	5,590.12	5,599.22	0.56	-0.56	0.02
14,722.00	89.44	89.72	8,985.84	372.97	5,686.12	5,695.19	0.80	-0.56	0.57
14,817.00	89.62	90.34	8,986.62	372.92	5,781.11	5,790.14	0.68	0.19	0.65
14,912.00	89.59	90.14	8,987.27	372.52	5,876.11	5,885.07	0.21	-0.03	-0.21
15,008.00	90.03	90.42	8,987.59	372.05	5,972.11	5,981.00	0.54	0.46	0.29
15,104.00	90.51	90.68	8,987.14	371.13	6,068.10	6,076.92	0.57	0.50	0.27
15,199.00	89.19	90.88	8,987.39	369.83	6,163.09	6,171.82	1.41	-1.39	0.21
15,295.00	89.34	91.19	8,988.62	368.10	6,259.07	6,267.69	0.36	0.16	0.32
15,390.00	89.51	90.69	8,989.57	366.54	6,354.05	6,362.57	0.56	0.18	-0.53
15,486.00	88.11	90.97	8,991.57	365.15	6,450.01	6,458.44	1.49	-1.46	0.29
15,581.00	88.31	90.92	8,994.54	363.59	6,544.96	6,553.28	0.22	0.21	-0.05
15,677.00	88.59	90.92	8,997.13	362.05	6,640.91	6,649.13	0.29	0.29	0.00
15,773.00	88.98	91.18	8,999.17	360.29	6,736.87	6,744.99	0.49	0.41	0.27
15,868.00	89.26	90.10	9,000.63	359.23	6,831.85	6,839.89	1.17	0.29	-1.14
15,964.00	89.54	89.19	9,001.63	359.82	6,927.84	6,935.85	0.99	0.29	-0.95
16,060.00	89.30	89.40	9,002.60	361.00	7,023.83	7,031.82	0.33	-0.25	0.22
16,155.00	91.23	89.70	9,002.16	361.75	7,118.82	7,126.79	2.06	2.03	0.32
16,251.00	91.20	90.00	9,000.13	362.00	7,214.80	7,222.73	0.31	-0.03	0.31
16,346.00	91.09	90.92	8,998.23	361.24	7,309.78	7,317.63	0.98	-0.12	0.97
16,442.00	89.01	91.94	8,998.15	358.84	7,405.74	7,413.46	2.41	-2.17	1.06
16,537.00	87.13	91.33	9,001.35	356.13	7,500.64	7,508.23	2.08	-1.98	-0.64
16,631.00	87.38	90.68	9,005.85	354.48	7,594.52	7,602.01	0.74	0.27	-0.69
16,726.00	87.73	88.62	9,009.90	355.06	7,689.43	7,696.88	2.20	0.37	-2.17
16,820.00	88.82	89.32	9,012.73	356.75	7,783.37	7,790.83	1.38	1.16	0.74
16,915.00	87.60	89.87	9,015.70	357.42	7,878.32	7,885.75	1.41	-1.28	0.58
17,010.00	88.91	91.42	9,018.59	356.36	7,973.26	7,980.61	2.14	1.38	1.63
17,104.00	88.73	91.87	9,020.53	353.66	8,067.20	8,074.41	0.52	-0.19	0.48
17,199.00	89.07	92.52	9,022.35	350.02	8,162.11	8,169.16	0.77	0.36	0.68
17,293.00	87.61	92.05	9,025.07	346.27	8,256.00	8,262.87	1.63	-1.55	-0.50

LEAM Drilling Systems LLC

Survey Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Onyx PWU 29-28
 Well: 61H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 61H
 TVD Reference: 3308.7' GE + 23.5' RKB @ 3332.20usft
 MD Reference: 3308.7' GE + 23.5' RKB @ 3332.20usft
 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)
17,389.00	87.20	91.09	9,029.42	343.65	8,351.86	8,358.60	1.09	-0.43	-1.00
17,483.00	87.11	89.75	9,034.09	342.96	8,445.74	8,452.41	1.43	-0.10	-1.43
17,577.00	87.82	90.69	9,038.24	342.60	8,539.65	8,546.26	1.25	0.76	1.00
17,672.00	89.06	89.36	9,040.83	342.56	8,634.61	8,641.17	1.91	1.31	-1.40
17,766.00	90.02	90.15	9,041.58	342.96	8,728.60	8,735.12	1.32	1.02	0.84
17,861.00	90.54	91.70	9,041.12	341.42	8,823.59	8,830.01	1.72	0.55	1.63
17,955.00	91.33	92.75	9,039.59	337.78	8,917.50	8,923.76	1.40	0.84	1.12
18,049.00	90.87	93.39	9,037.78	332.74	9,011.35	9,017.39	0.84	-0.49	0.68
18,144.00	89.29	93.00	9,037.65	327.45	9,106.20	9,112.02	1.71	-1.66	-0.41
18,238.00	88.96	92.20	9,039.08	323.18	9,200.09	9,205.73	0.92	-0.35	-0.85
18,332.00	89.83	91.65	9,040.08	320.03	9,294.03	9,299.51	1.09	0.93	-0.59
18,427.00	90.17	91.05	9,040.08	317.79	9,389.00	9,394.37	0.73	0.36	-0.63
18,522.00	89.32	89.72	9,040.50	317.15	9,483.99	9,489.29	1.66	-0.89	-1.40
18,617.00	88.30	88.79	9,042.47	318.38	9,578.96	9,584.25	1.45	-1.07	-0.98
18,712.00	86.99	89.13	9,046.38	320.11	9,673.87	9,679.16	1.42	-1.38	0.36
18,806.00	86.45	89.36	9,051.75	321.34	9,767.70	9,772.99	0.62	-0.57	0.24
18,900.00	87.99	88.71	9,056.31	322.93	9,861.58	9,866.86	1.78	1.64	-0.69
18,993.09	89.27	88.44	9,058.54	325.24	9,954.61	9,959.92	1.40	1.37	-0.29
PBHL (Onyx 61H)									
18,994.00	89.28	88.44	9,058.55	325.26	9,955.52	9,960.83	1.40	1.37	-0.29
18,994.98	89.28	88.44	9,058.57	325.29	9,956.50	9,961.81	0.00	0.00	0.00
East Hardline Crossing - 18994.98'									
19,087.00	89.28	88.44	9,059.72	327.79	10,048.48	10,053.82	0.00	0.00	0.00
Projection - BHL (Onyx PWU 29-28 61H)									