

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED
JAN 10 2020
Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office
EMNRD-OCD ARTESIA
☒ AMENDED REPORT

¹ API Number 30-015-45637	² Pool Code 96144	³ Pool Name CARLSBAD; BONE SPRING, EAST
⁴ Property Code 323153	⁵ Property Name LONE TREE DRAW 14-13 STATE COM	⁶ Well Number 335H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3260.3

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	14	21 S	27 E		396	SOUTH	195	WEST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	13	21 S	27 E		1305	SOUTH	104	EAST	EDDY

¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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"O" OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Erin Workman **12/20/2019**
Signature Date

Erin Workman
Printed Name

Erin.workman@dnv.com
E-mail Address

"S" SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

DECEMBER 6, 2018
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: **PL 12797**
PROFESSIONAL SURVEYOR NO. 6732

Intent ☐ As Drilled ☒

API #

Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: LONE TREE DRAW 14-13 STATE COM	Well Number 335H
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Kick Off Point (KOP)

UL M	Section 14	Township 21S	Range 27E	Lot	Feet 1260	From N/S SOUTH	Feet 114	From E/W WEST	County EDDY
Latitude 32.4763500					Longitude 104.1687250			NAD 83	

First Take Point (FTP)

UL M	Section 14	Township 21S	Range 27E	Lot	Feet 1276	From N/S SOUTH	Feet 597	From E/W WEST	County EDDY
Latitude 32.4764009					Longitude 104.1671588			NAD 83	

Last Take Point (LTP)

UL P	Section 13	Township 21S	Range 27E	Lot	Feet 1305	From N/S SOUTH	Feet 136	From E/W EAST	County EDDY
Latitude 32.4767447					Longitude 104.1348612			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☒

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number
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KZ 06/29/2018

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JAN 10 2020

EMNRD-OCD ARTESIA

Devon

SURVEY REPORT

Lone Tree Draw 14-13 Fed Com 335H

This survey is correct to the best of my knowledge and is supported by actual field data.

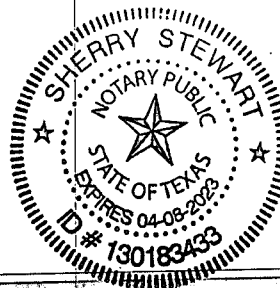
Notarized this data 19th of December, 2019.

Sherry Stewart

Notary Signature

County of Midland

State of Texas



The **Ultimate Partner** In Wellbore Placement

Devon Energy

Eddy County, NM (NAD83 NME)
Lone Tree Draw 14-13 State Com
335H

OH

Survey: SDI Surveys #1

Standard Survey Report

12 August, 2019



www.scientificdrilling.com



Scientific Drilling, Intl Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 335H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Site:	Lone Tree Draw 14-13 State Com	MD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Well:	335H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Project:	Eddy County, NM (NAD83 NME)	
Map System:	US State Plane 1983	System Datum:
Geo Datum:	North American Datum 1983	Mean Sea Level
Map Zone:	New Mexico Eastern Zone	Using geodetic scale factor

Site:	Lone Tree Draw 14-13 State Com	
Site Position:		Northing:
From:	Map	Easting:
Position Uncertainty:	0.00 usft	Slot Radius:
		Latitude:
		Longitude:
		Grid Convergence:

Well		335H				
Well Position	+N/-S	0.00 usft	Northing:	536,203.20 usft	Latitude:	32° 28' 26.319 N
	+E/-W	0.00 usft	Easting:	592,180.41 usft	Longitude:	104° 10' 6.470 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,260.00 usft

Wellbore				OH	
Magnetics					
Model Name		Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
HDGM		6/11/2019	7.18	60.20	47,952

Design		OH			
Audit Notes:					
Version:		1.0		Phase: ACTUAL	
				Tie On Depth: 0.00	
Vertical Section:		Depth From (TVD)		+N/-S	
		(usft)		+E/-W	
				(usft)	
		0.00		0.00	
				0.00	
				84.38	

Survey Program		Date	8/12/2019	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
75.05	19,158.00	SDI Surveys #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(bearing)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
75.05	0.15	49.13	75.05	0.06	0.07	0.08	0.20	0.20	0.00	
170.12	0.48	104.65	170.12	0.04	0.55	0.56	0.44	0.35	58.40	
265.54	0.56	125.93	265.53	-0.33	1.32	1.28	0.22	0.08	22.30	
328.00	0.55	128.17	327.99	-0.69	1.80	1.72	0.04	-0.02	3.59	
431.00	0.61	118.70	430.99	-1.26	2.67	2.53	0.11	0.06	-9.19	
522.00	0.71	139.43	521.98	-1.92	3.46	3.26	0.28	0.11	22.78	
613.00	0.52	132.65	612.98	-2.63	4.13	3.85	0.22	-0.21	-7.45	
704.00	0.60	126.89	703.97	-3.20	4.82	4.48	0.11	0.09	-6.33	
795.00	0.34	141.90	794.97	-3.70	5.36	4.98	0.31	-0.29	16.49	

Scientific Drilling, Intl
Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 335H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Site:	Lone Tree Draw 14-13 State Com	MD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Well:	335H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
885.00	0.59	158.78	884.96	-4.34	5.70	5.25	0.31	0.28	18.76
975.00	0.52	101.33	974.96	-4.85	6.27	5.76	0.60	-0.08	-63.83
1,067.00	0.36	64.62	1,066.96	-4.81	6.94	6.43	0.34	-0.17	-39.90
1,157.00	0.42	76.12	1,156.96	-4.61	7.51	7.02	0.11	0.07	12.78
1,248.00	0.92	77.47	1,247.95	-4.37	8.55	8.08	0.55	0.55	1.48
1,339.00	0.74	50.33	1,338.94	-3.84	9.71	9.29	0.47	-0.20	-29.82
1,430.00	0.94	58.98	1,429.93	-3.08	10.81	10.45	0.26	0.22	9.51
1,525.00	0.84	69.87	1,524.92	-2.44	12.13	11.83	0.21	-0.11	11.46
1,620.00	0.74	51.49	1,619.91	-1.81	13.26	13.02	0.29	-0.11	-19.35
1,715.00	0.72	64.57	1,714.90	-1.18	14.28	14.10	0.18	-0.02	13.77
1,810.00	0.96	61.40	1,809.89	-0.54	15.52	15.39	0.26	0.25	-3.34
1,906.00	0.88	62.77	1,905.88	0.18	16.88	16.82	0.09	-0.08	1.43
2,001.00	0.88	62.67	2,000.87	0.85	18.18	18.17	0.00	0.00	-0.11
2,097.00	0.91	13.97	2,096.86	1.93	19.02	19.11	0.77	0.03	-50.73
2,192.00	1.11	358.97	2,191.84	3.58	19.18	19.44	0.35	0.21	-15.79
2,287.00	0.97	349.64	2,286.83	5.29	19.02	19.45	0.23	-0.15	-9.82
2,382.00	1.01	347.32	2,381.81	6.90	18.69	19.28	0.06	0.04	-2.44
2,477.00	0.98	352.17	2,476.80	8.52	18.40	19.14	0.09	-0.03	5.11
2,573.00	0.88	353.29	2,572.79	10.07	18.20	19.10	0.11	-0.10	1.17
2,667.00	0.76	351.08	2,666.78	11.40	18.02	19.05	0.13	-0.13	-2.35
2,761.00	0.74	344.29	2,760.77	12.60	17.76	18.91	0.10	-0.02	-7.22
2,923.00	0.68	354.11	2,922.76	14.57	17.38	18.72	0.08	-0.04	6.06
3,017.00	2.14	348.80	3,016.73	16.84	16.98	18.55	1.56	1.55	-5.65
3,111.00	2.54	357.34	3,110.65	20.64	16.54	18.48	0.56	0.43	9.09
3,205.00	2.52	355.30	3,204.56	24.78	16.27	18.62	0.10	-0.02	-2.17
3,299.00	2.61	355.58	3,298.46	28.98	15.94	18.70	0.10	0.10	0.30
3,393.00	2.33	357.03	3,392.38	33.02	15.68	18.83	0.31	-0.30	1.54
3,487.00	4.27	346.36	3,486.22	38.33	14.75	18.43	2.16	2.06	-11.35
3,581.00	6.33	345.21	3,579.81	46.74	12.60	17.12	2.19	2.19	-1.22
3,677.00	7.39	350.38	3,675.12	57.95	10.22	15.85	1.28	1.10	5.39
3,772.00	9.06	355.42	3,769.14	71.43	8.60	15.56	1.91	1.76	5.31
3,867.00	11.64	351.67	3,862.59	88.37	6.62	15.24	2.81	2.72	-3.95
3,962.00	12.66	346.95	3,955.46	107.99	2.88	13.44	1.50	1.07	-4.97
4,058.00	13.09	345.77	4,049.05	128.78	-2.17	10.45	0.52	0.45	-1.23
4,153.00	11.91	343.49	4,141.80	148.61	-7.60	6.99	1.35	-1.24	-2.40
4,249.00	12.54	348.12	4,235.62	168.30	-12.56	3.98	1.21	0.66	4.82
4,344.00	12.64	348.89	4,328.34	188.60	-16.69	1.86	0.21	0.11	0.81
4,440.00	11.87	347.25	4,422.15	208.53	-20.89	-0.37	0.88	-0.80	-1.71
4,535.00	12.45	350.89	4,515.02	228.17	-24.67	-2.21	1.01	0.61	3.83
4,630.00	12.50	352.88	4,607.78	248.49	-27.57	-3.10	0.46	0.05	2.09
4,724.00	11.90	352.62	4,699.65	268.19	-30.07	-3.66	0.64	-0.64	-0.28
4,820.00	11.48	350.81	4,793.66	287.44	-32.87	-4.56	0.58	-0.44	-1.89
4,915.00	12.23	356.27	4,886.64	306.81	-35.03	-4.82	1.42	0.79	5.75
5,010.00	11.73	357.89	4,979.57	326.50	-36.04	-3.89	0.63	-0.53	1.71

Scientific Drilling, Intl Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 335H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Site:	Lone Tree Draw 14-13 State Com	MD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Well:	335H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,105.00	10.71	355.67	5,072.75	344.96	-37.06	-3.10	1.17	-1.07	-2.34
5,200.00	10.12	355.10	5,166.19	362.07	-38.44	-2.80	0.63	-0.62	-0.60
5,296.00	9.96	352.66	5,260.72	378.71	-40.23	-2.94	0.47	-0.17	-2.54
5,390.00	10.31	354.75	5,353.25	395.15	-42.03	-3.13	0.54	0.37	2.22
5,484.00	9.24	353.75	5,445.88	411.03	-43.62	-3.16	1.15	-1.14	-1.06
5,580.00	9.22	358.78	5,540.64	426.38	-44.63	-2.66	0.84	-0.02	5.24
5,676.00	11.20	3.63	5,635.12	443.38	-44.20	-0.57	2.25	2.06	5.05
5,771.00	10.46	1.44	5,728.43	461.21	-43.40	1.97	0.89	-0.78	-2.31
5,867.00	10.87	359.73	5,822.77	478.97	-43.22	3.89	0.54	0.43	-1.78
5,962.00	12.04	352.94	5,915.88	497.76	-44.48	4.48	1.88	1.23	-7.15
6,058.00	10.76	347.30	6,009.99	516.44	-47.68	3.12	1.77	-1.33	-5.88
6,153.00	10.99	346.21	6,103.28	533.89	-51.79	0.74	0.32	0.24	-1.15
6,247.00	11.83	348.72	6,195.42	552.04	-55.81	-1.48	1.04	0.89	2.67
6,343.00	12.76	346.90	6,289.22	572.01	-60.14	-3.83	1.05	0.97	-1.90
6,438.00	12.53	346.54	6,381.91	592.26	-64.92	-6.61	0.26	-0.24	-0.38
6,533.00	12.60	350.76	6,474.64	612.51	-68.98	-8.67	0.97	0.07	4.44
6,628.00	10.22	351.92	6,567.76	631.08	-71.83	-9.68	2.52	-2.51	1.22
6,723.00	9.59	358.48	6,661.34	647.33	-73.22	-9.48	1.36	-0.66	6.91
6,819.00	10.53	359.23	6,755.87	664.10	-73.55	-8.16	0.99	0.98	0.78
6,914.00	12.12	357.17	6,849.01	682.74	-74.16	-6.95	1.73	1.67	-2.17
7,010.00	10.92	359.48	6,943.08	701.90	-74.74	-5.65	1.34	-1.25	2.41
7,105.00	10.84	355.54	7,036.37	719.81	-75.52	-4.67	0.79	-0.08	-4.15
7,201.00	11.63	355.02	7,130.53	738.45	-77.06	-4.37	0.83	0.82	-0.54
7,297.00	11.33	355.35	7,224.61	757.48	-78.67	-4.11	0.32	-0.31	0.34
7,391.00	9.07	356.36	7,317.12	774.08	-79.88	-3.69	2.41	-2.40	1.07
7,487.00	9.78	356.32	7,411.82	789.77	-80.89	-3.16	0.74	0.74	-0.04
7,583.00	8.41	354.57	7,506.61	804.90	-82.08	-2.86	1.46	-1.43	-1.82
7,678.00	5.87	346.37	7,600.87	816.54	-83.88	-3.51	2.87	-2.67	-8.63
7,773.00	6.33	355.69	7,695.34	826.48	-85.42	-4.07	1.15	0.48	9.81
7,868.00	5.31	8.22	7,789.85	836.06	-85.18	-2.90	1.71	-1.07	13.19
7,963.00	4.13	30.53	7,884.53	843.35	-82.82	0.17	2.27	-1.24	23.48
8,059.00	2.92	356.26	7,980.36	848.77	-81.22	2.29	2.48	-1.26	-35.70
8,154.00	3.24	343.10	8,075.22	853.76	-82.16	1.85	0.81	0.34	-13.85
8,249.00	2.18	346.12	8,170.12	858.08	-83.37	1.06	1.13	-1.12	3.18
8,328.00	2.35	332.92	8,249.06	860.98	-84.47	0.25	0.69	0.22	-16.71
8,440.00	5.92	67.54	8,360.83	865.23	-80.17	4.95	5.84	3.19	84.48
8,487.00	12.37	76.53	8,407.21	867.34	-73.03	12.26	14.01	13.72	19.13
8,535.00	18.82	82.08	8,453.42	869.60	-60.35	25.10	13.78	13.44	11.56
8,582.00	24.73	84.21	8,497.05	871.64	-43.04	42.53	12.68	12.57	4.53
8,630.00	31.25	86.78	8,539.41	873.36	-20.60	65.03	13.81	13.58	5.35
8,677.00	37.60	90.29	8,578.17	873.97	5.94	91.50	14.15	13.51	7.47
8,725.00	42.31	92.17	8,614.95	873.28	36.75	122.09	10.13	9.81	3.92
8,772.00	47.77	90.97	8,648.15	872.39	69.98	155.08	11.76	11.62	-2.55

Scientific Drilling, Intl Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 335H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Site:	Lone Tree Draw 14-13 State Com	MD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Well:	335H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,821.00	51.70	89.66	8,679.82	872.19	107.36	192.26	8.28	8.02	-2.67
8,845.56	53.06	88.85	8,694.81	872.45	126.81	211.64	6.12	5.54	-3.29
FTP[LT335H]									
8,868.00	54.31	88.14	8,708.10	872.92	144.89	229.68	6.12	5.56	-3.18
8,916.00	57.74	88.70	8,734.92	874.02	184.67	269.38	7.21	7.15	1.17
8,963.00	61.88	88.22	8,758.55	875.11	225.27	309.89	8.85	8.81	-1.02
9,012.00	64.94	87.86	8,780.48	876.61	269.06	353.61	6.28	6.24	-0.73
9,059.00	66.51	87.05	8,799.80	878.52	311.86	396.39	3.69	3.34	-1.72
9,107.00	69.76	87.40	8,817.67	880.67	356.35	440.88	6.80	6.77	0.73
9,154.00	73.44	87.77	8,832.51	882.55	400.90	485.40	7.87	7.83	0.79
9,203.00	76.81	88.00	8,845.08	884.30	448.22	532.66	6.89	6.88	0.47
9,250.00	78.46	87.58	8,855.15	886.07	494.09	578.49	3.62	3.51	-0.89
9,295.00	80.54	87.44	8,863.35	887.99	538.29	622.67	4.63	4.62	-0.31
9,342.00	83.58	86.28	8,869.84	890.54	584.77	669.17	6.91	6.47	-2.47
9,391.00	84.62	85.43	8,874.88	894.06	633.38	717.89	2.74	2.12	-1.73
9,487.00	85.90	86.41	8,882.81	900.87	728.81	813.52	1.68	1.33	1.02
9,582.00	86.74	86.59	8,888.91	906.66	823.43	908.26	0.90	0.88	0.19
9,677.00	87.92	87.23	8,893.33	911.77	918.19	1,003.06	1.41	1.24	0.67
9,773.00	89.46	89.22	8,895.53	914.74	1,014.11	1,098.82	2.62	1.60	2.07
9,868.00	89.46	89.48	8,896.42	915.82	1,109.10	1,193.45	0.27	0.00	0.27
9,963.00	88.96	89.42	8,897.73	916.73	1,204.09	1,288.07	0.53	-0.53	-0.06
10,059.00	89.80	88.99	8,898.77	918.07	1,300.07	1,383.73	0.98	0.88	-0.45
10,154.00	89.97	88.88	8,898.96	919.83	1,395.05	1,478.43	0.21	0.18	-0.12
10,250.00	89.73	88.51	8,899.21	922.02	1,491.03	1,574.15	0.46	-0.25	-0.39
10,345.00	89.63	87.91	8,899.74	924.98	1,585.98	1,668.94	0.64	-0.11	-0.63
10,440.00	88.39	88.04	8,901.38	928.34	1,680.90	1,763.74	1.31	-1.31	0.14
10,535.00	89.13	88.40	8,903.44	931.29	1,775.83	1,858.50	0.87	0.78	0.38
10,630.00	87.55	88.28	8,906.19	934.04	1,870.75	1,953.23	1.67	-1.66	-0.13
10,725.00	87.38	87.84	8,910.39	937.25	1,965.60	2,047.94	0.50	-0.18	-0.46
10,820.00	87.55	87.74	8,914.60	940.91	2,060.44	2,142.68	0.21	0.18	-0.11
10,916.00	88.19	87.48	8,918.16	944.92	2,156.29	2,238.46	0.72	0.67	-0.27
11,010.00	88.59	87.92	8,920.80	948.69	2,250.18	2,332.27	0.63	0.43	0.47
11,106.00	87.79	88.22	8,923.84	951.92	2,346.07	2,428.02	0.89	-0.83	0.31
11,201.00	88.52	90.34	8,926.90	953.11	2,441.01	2,522.62	2.36	0.77	2.23
11,296.00	87.99	90.35	8,929.79	952.54	2,535.96	2,617.06	0.56	-0.56	0.01
11,391.00	87.15	89.41	8,933.82	952.74	2,630.88	2,711.53	1.33	-0.88	-0.99
11,486.00	88.49	91.59	8,937.43	951.91	2,725.80	2,805.92	2.69	1.41	2.29
11,582.00	89.30	91.15	8,939.28	949.61	2,821.75	2,901.18	0.96	0.84	-0.46
11,677.00	90.03	91.50	8,939.84	947.42	2,916.72	2,995.48	0.85	0.77	0.37
11,772.00	89.77	90.64	8,940.00	945.64	3,011.71	3,089.84	0.95	-0.27	-0.91
11,867.00	90.74	89.46	8,939.58	945.56	3,106.70	3,184.37	1.61	1.02	-1.24
11,962.00	91.54	88.64	8,937.69	947.13	3,201.67	3,279.03	1.21	0.84	-0.86
12,057.00	90.64	89.17	8,935.88	948.95	3,296.63	3,373.72	1.10	-0.95	0.56
12,153.00	90.70	89.50	8,934.76	950.06	3,392.62	3,469.35	0.35	0.06	0.34

Scientific Drilling, Intl Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 335H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Site:	Lone Tree Draw 14-13 State Com	MD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Well:	335H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,248.00	91.14	89.34	8,933.24	951.02	3,487.60	3,563.97	0.49	0.46	-0.17
12,343.00	89.97	88.53	8,932.32	952.79	3,582.58	3,658.66	1.50	-1.23	-0.85
12,438.00	89.13	88.78	8,933.06	955.02	3,677.55	3,753.40	0.92	-0.88	0.26
12,533.00	88.29	89.39	8,935.20	956.54	3,772.51	3,848.05	1.09	-0.88	0.64
12,627.00	88.79	89.75	8,937.59	957.24	3,866.48	3,941.64	0.66	0.53	0.38
12,722.00	88.69	89.82	8,939.68	957.60	3,961.45	4,036.19	0.13	-0.11	0.07
12,817.00	87.89	88.74	8,942.52	958.79	4,056.40	4,130.80	1.41	-0.84	-1.14
12,912.00	87.31	88.66	8,946.50	960.95	4,151.29	4,225.44	0.62	-0.61	-0.08
13,007.00	87.25	88.14	8,951.01	963.59	4,246.15	4,320.10	0.55	-0.06	-0.55
13,103.00	88.22	88.58	8,954.80	966.34	4,342.03	4,415.80	1.11	1.01	0.46
13,198.00	89.83	89.27	8,956.42	968.12	4,437.00	4,510.48	1.84	1.69	0.73
13,293.00	90.23	88.78	8,956.37	969.74	4,531.99	4,605.17	0.67	0.42	-0.52
13,389.00	90.37	88.68	8,955.86	971.87	4,627.96	4,700.89	0.18	0.15	-0.10
13,484.00	88.59	88.83	8,956.73	973.93	4,722.93	4,795.61	1.88	-1.87	0.16
13,579.00	88.49	88.80	8,959.15	975.89	4,817.88	4,890.29	0.11	-0.11	-0.03
13,674.00	88.99	89.10	8,961.24	977.63	4,912.84	4,984.96	0.61	0.53	0.32
13,770.00	87.92	88.71	8,963.82	979.47	5,008.79	5,080.63	1.19	-1.11	-0.41
13,865.00	87.75	88.73	8,967.41	981.59	5,103.69	5,175.29	0.18	-0.18	0.02
13,959.00	88.42	89.96	8,970.55	982.66	5,197.63	5,268.88	1.49	0.71	1.31
14,055.00	88.39	89.74	8,973.23	982.91	5,293.60	5,364.41	0.23	-0.03	-0.23
14,150.00	88.86	89.67	8,975.51	983.40	5,388.57	5,458.97	0.50	0.49	-0.07
14,246.00	88.39	89.11	8,977.81	984.42	5,484.53	5,554.58	0.76	-0.49	-0.58
14,341.00	88.83	89.07	8,980.11	985.93	5,579.49	5,649.23	0.47	0.46	-0.04
14,435.00	88.66	88.55	8,982.17	987.88	5,673.45	5,742.92	0.58	-0.18	-0.55
14,530.00	88.83	89.04	8,984.25	989.88	5,768.41	5,837.62	0.55	0.18	0.52
14,625.00	88.46	88.53	8,986.50	991.90	5,863.36	5,932.31	0.66	-0.39	-0.54
14,720.00	88.69	88.99	8,988.86	993.95	5,958.30	6,027.00	0.54	0.24	0.48
14,815.00	88.39	91.09	8,991.28	993.88	6,053.27	6,121.50	2.23	-0.32	2.21
14,909.00	88.89	90.61	8,993.51	992.49	6,147.23	6,214.88	0.74	0.53	-0.51
15,004.00	88.96	90.44	8,995.30	991.62	6,242.21	6,309.32	0.19	0.07	-0.18
15,100.00	88.93	90.73	8,997.06	990.64	6,338.19	6,404.74	0.30	-0.03	0.30
15,195.00	88.39	90.25	8,999.29	989.83	6,433.16	6,499.17	0.76	-0.57	-0.51
15,291.00	88.62	89.69	9,001.79	989.88	6,529.13	6,594.68	0.63	0.24	-0.58
15,385.00	87.78	89.43	9,004.74	990.60	6,623.08	6,688.25	0.94	-0.89	-0.28
15,480.00	88.62	89.03	9,007.73	991.88	6,718.02	6,782.86	0.98	0.88	-0.42
15,576.00	88.56	89.10	9,010.09	993.44	6,813.98	6,878.51	0.10	-0.06	0.07
15,671.00	88.93	89.38	9,012.17	994.70	6,908.95	6,973.15	0.49	0.39	0.29
15,765.00	86.64	87.99	9,015.80	996.86	7,002.84	7,066.80	2.85	-2.44	-1.48
15,860.00	87.59	87.96	9,020.58	1,000.21	7,097.66	7,161.50	1.00	1.00	-0.03
15,953.00	89.46	89.52	9,022.98	1,002.25	7,190.60	7,254.19	2.62	2.01	1.68
16,048.00	89.83	89.94	9,023.57	1,002.70	7,285.60	7,348.77	0.59	0.39	0.44
16,143.00	89.97	90.46	9,023.73	1,002.37	7,380.60	7,443.28	0.57	0.15	0.55
16,239.00	90.34	89.83	9,023.47	1,002.13	7,476.60	7,538.80	0.76	0.39	-0.66

Scientific Drilling, Intl Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 335H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Site:	Lone Tree Draw 14-13 State Com	MD Reference:	KB = 27' @ 3287.00usft (Cactus 167)
Well:	335H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,333.00	90.44	90.33	9,022.83	1,001.99	7,570.59	7,632.33	0.54	0.11	0.53	
16,427.00	90.74	89.46	9,021.86	1,002.17	7,664.59	7,725.89	0.98	0.32	-0.93	
16,522.00	90.57	89.11	9,020.78	1,003.35	7,759.57	7,820.53	0.41	-0.18	-0.37	
16,617.00	89.87	89.68	9,020.41	1,004.36	7,854.57	7,915.17	0.95	-0.74	0.60	
16,712.00	88.76	89.81	9,021.55	1,004.78	7,949.56	8,009.74	1.18	-1.17	0.14	
16,807.00	88.56	89.73	9,023.77	1,005.16	8,044.53	8,104.30	0.23	-0.21	-0.08	
16,902.00	88.96	89.76	9,025.83	1,005.58	8,139.51	8,198.86	0.42	0.42	0.03	
16,997.00	89.03	89.59	9,027.49	1,006.12	8,234.49	8,293.44	0.19	0.07	-0.18	
17,093.00	88.09	89.67	9,029.91	1,006.74	8,330.46	8,389.01	0.98	-0.98	0.08	
17,188.00	88.32	89.72	9,032.88	1,007.25	8,425.41	8,483.55	0.25	0.24	0.05	
17,283.00	88.32	89.70	9,035.67	1,007.73	8,520.37	8,578.10	0.02	0.00	-0.02	
17,379.00	88.52	89.58	9,038.31	1,008.33	8,616.33	8,673.66	0.24	0.21	-0.13	
17,474.00	88.69	89.38	9,040.63	1,009.19	8,711.30	8,768.25	0.28	0.18	-0.21	
17,568.00	88.93	89.31	9,042.58	1,010.27	8,805.27	8,861.88	0.27	0.26	-0.07	
17,663.00	89.26	88.88	9,044.08	1,011.77	8,900.25	8,956.55	0.57	0.35	-0.45	
17,758.00	90.64	89.59	9,044.16	1,013.03	8,995.23	9,051.20	1.63	1.45	0.75	
17,854.00	90.67	90.14	9,043.06	1,013.26	9,091.23	9,146.76	0.57	0.03	0.57	
17,949.00	88.56	89.63	9,043.70	1,013.45	9,186.22	9,241.31	2.29	-2.22	-0.54	
18,043.00	88.02	89.82	9,046.51	1,013.90	9,280.18	9,334.86	0.61	-0.57	0.20	
18,138.00	88.19	89.30	9,049.65	1,014.63	9,375.12	9,429.42	0.58	0.18	-0.55	
18,232.00	88.66	89.75	9,052.23	1,015.41	9,469.08	9,523.01	0.69	0.50	0.48	
18,328.00	88.89	89.93	9,054.29	1,015.68	9,565.06	9,618.55	0.30	0.24	0.19	
18,423.00	89.36	89.53	9,055.74	1,016.13	9,660.05	9,713.12	0.65	0.49	-0.42	
18,519.00	90.20	90.08	9,056.10	1,016.45	9,756.04	9,808.69	1.05	0.88	0.57	
18,614.00	90.57	89.36	9,055.47	1,016.92	9,851.04	9,903.28	0.85	0.39	-0.76	
18,708.00	89.80	89.81	9,055.16	1,017.60	9,945.04	9,996.89	0.95	-0.82	0.48	
18,803.00	88.83	89.16	9,056.30	1,018.45	10,040.02	10,091.50	1.23	-1.02	-0.68	
18,899.00	89.13	88.62	9,058.01	1,020.31	10,135.99	10,187.19	0.64	0.31	-0.56	
18,994.00	89.13	88.97	9,059.45	1,022.31	10,230.96	10,281.90	0.37	0.00	0.37	
19,089.00	89.20	88.63	9,060.83	1,024.30	10,325.93	10,376.60	0.37	0.07	-0.36	
FINAL MWD Survey (19089.00' MD)										
19,158.00	89.20	88.63	9,061.80	1,025.95	10,394.90	10,445.41	0.00	0.00	0.00	
FINAL Proj. to Bit (19158.00' MD) - BHL[LT335H]										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
19,089.00	9,060.83	1,024.30	10,325.93	FINAL MWD Survey (19089.00' MD)	
19,158.00	9,061.80	1,025.95	10,394.90	FINAL Proj. to Bit (19158.00' MD)	

Checked By: _____	Approved By: _____	Date: _____
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