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Devon Energy

Lea County, NM (NAD83 NME)
Fluffy Cat 16-21 State Fed Com
218H

OH

Survey: SDI Survey #1

Standard Survey Report

25 September, 2018



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Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 218H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 32' @ 3727.00usft (Nabors X15)
Site:	Fluffy Cat 16-21 State Fed Com	MD Reference:	KB = 32' @ 3727.00usft (Nabors X15)
Well:	218H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

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

Site	Fluffy Cat 16-21 State Fed Com		
Site Position:		Northing:	474,853.07 usft
From:	Map	Easting:	744,870.62 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 18' 13.411 N
		Longitude:	103° 40' 28.470 W
		Grid Convergence:	0.35 °

Well	218H		
Well Position	+N/-S	0.00 usft	Northing: 474,853.07 usft
	+E/-W	0.00 usft	Easting: 744,870.62 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 18' 13.411 N
		Longitude:	103° 40' 28.470 W
		Ground Level:	3,695.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	8/22/2018	6.83
			Dip Angle
			(°)
			60.05
			Field Strength
			(nT)
			48,057

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(bearing)
			179.30

Survey Program	Date 9/25/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
184.00	18,675.00	SDI Survey #1 (OH)	MWD+HDGM
			Description
			OWSG MWD + HDGM

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(bearing)	(usft)	(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
184.00	0.90	326.30	183.99	1.20	-0.80	-1.21	0.49	0.49	0.00
277.00	0.77	341.05	276.98	2.40	-1.41	-2.42	0.27	-0.14	15.86
370.00	0.86	343.96	369.97	3.66	-1.81	-3.68	0.11	0.10	3.13
462.00	0.71	342.84	461.96	4.87	-2.16	-4.90	0.16	-0.16	-1.22
555.00	0.68	324.47	554.96	5.87	-2.66	-5.90	0.24	-0.03	-19.75
646.00	0.86	333.70	645.95	6.92	-3.27	-6.96	0.24	0.20	10.14
739.00	1.04	322.35	738.94	8.22	-4.10	-8.27	0.28	0.19	-12.20
830.00	0.98	323.88	829.92	9.50	-5.06	-9.56	0.07	-0.07	1.68
923.00	1.04	302.19	922.91	10.59	-6.24	-10.67	0.41	0.06	-23.32

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Well:	218H	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)
1,016.00	1.08	299.49	1,015.89	11.47	-7.72	-11.57	0.07	0.04	-2.90
1,109.00	0.93	299.92	1,108.88	12.28	-9.14	-12.39	0.16	-0.16	0.46
1,189.00	0.89	309.99	1,188.87	13.00	-10.18	-13.13	0.21	-0.05	12.59
1,351.00	0.41	298.06	1,350.86	14.08	-11.65	-14.23	0.31	-0.30	-7.36
1,442.00	0.32	357.38	1,441.86	14.49	-11.95	-14.64	0.41	-0.10	65.19
1,534.00	0.38	98.06	1,533.85	14.70	-11.66	-14.85	0.59	0.07	109.43
1,625.00	0.59	83.78	1,624.85	14.71	-10.90	-14.85	0.26	0.23	-15.69
1,719.00	0.69	76.70	1,718.85	14.90	-9.86	-15.02	0.14	0.11	-7.53
1,813.00	0.80	97.37	1,812.84	14.94	-8.66	-15.05	0.31	0.12	21.99
1,908.00	0.91	77.97	1,907.83	15.01	-7.27	-15.10	0.32	0.12	-20.42
2,002.00	0.93	70.86	2,001.82	15.42	-5.82	-15.49	0.12	0.02	-7.56
2,097.00	0.86	62.48	2,096.80	16.00	-4.45	-16.06	0.16	-0.07	-8.82
2,191.00	1.08	93.10	2,190.79	16.28	-2.94	-16.31	0.59	0.23	32.57
2,285.00	1.13	69.09	2,284.77	16.56	-1.19	-16.58	0.49	0.05	-25.54
2,380.00	0.90	85.58	2,379.76	16.95	0.42	-16.95	0.39	-0.24	17.36
2,473.00	1.24	72.15	2,472.74	17.32	2.11	-17.29	0.45	0.37	-14.44
2,568.00	1.32	69.66	2,567.72	18.02	4.12	-17.96	0.10	0.08	-2.62
2,661.00	1.23	70.19	2,660.70	18.73	6.06	-18.65	0.10	-0.10	0.57
2,755.00	1.45	77.81	2,754.67	19.32	8.17	-19.22	0.30	0.23	8.11
2,850.00	1.12	93.82	2,849.65	19.51	10.27	-19.38	0.51	-0.35	16.85
2,944.00	1.27	84.32	2,943.63	19.55	12.22	-19.40	0.26	0.16	-10.11
3,037.00	1.50	19.66	3,036.60	20.80	13.66	-20.63	1.61	0.25	-69.53
3,130.00	1.76	3.54	3,129.57	23.37	14.16	-23.20	0.56	0.28	-17.33
3,224.00	1.17	356.87	3,223.54	25.77	14.19	-25.60	0.65	-0.63	-7.10
3,318.00	0.95	347.82	3,317.52	27.49	13.98	-27.32	0.29	-0.23	-9.63
3,412.00	0.76	24.28	3,411.51	28.82	14.07	-28.65	0.60	-0.20	38.79
3,506.00	0.55	51.87	3,505.50	29.67	14.68	-29.49	0.40	-0.22	29.35
3,600.00	0.64	13.76	3,599.50	30.46	15.16	-30.27	0.42	0.10	-40.54
3,693.00	0.57	17.57	3,692.49	31.40	15.42	-31.21	0.09	-0.08	4.10
3,788.00	0.68	54.25	3,787.49	32.18	16.02	-31.98	0.43	0.12	38.61
3,882.00	0.40	98.29	3,881.49	32.46	16.80	-32.25	0.51	-0.30	46.85
3,975.00	1.68	13.47	3,974.47	33.74	17.44	-33.52	1.82	1.38	-91.20
4,101.00	2.42	18.01	4,100.39	38.07	18.69	-37.83	0.60	0.59	3.60
4,195.00	2.17	29.61	4,194.31	41.50	20.19	-41.25	0.56	-0.27	12.34
4,288.00	2.37	31.36	4,287.24	44.67	22.06	-44.40	0.23	0.22	1.88
4,382.00	3.48	13.65	4,381.12	49.11	23.74	-48.81	1.51	1.18	-18.84
4,475.00	5.00	358.43	4,473.87	55.90	24.30	-55.60	2.02	1.63	-16.37
4,569.00	6.44	356.94	4,567.39	65.26	23.90	-64.96	1.54	1.53	-1.59
4,663.00	8.98	357.79	4,660.54	77.86	23.34	-77.57	2.70	2.70	0.90
4,758.00	9.52	356.91	4,754.30	93.11	22.63	-92.83	0.59	0.57	-0.93
4,853.00	8.35	358.14	4,848.15	107.85	21.98	-107.57	1.25	-1.23	1.29
4,946.00	8.24	359.57	4,940.17	121.26	21.71	-120.99	0.25	-0.12	1.54
5,039.00	7.58	0.41	5,032.29	134.06	21.71	-133.79	0.72	-0.71	0.90
5,133.00	7.22	2.05	5,125.51	146.16	21.96	-145.88	0.44	-0.38	1.74

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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)
5,228.00	7.22	1.32	5,219.75	158.10	22.31	-157.81	0.10	0.00	-0.77
5,276.00	6.61	2.32	5,267.40	163.87	22.49	-163.59	1.30	-1.27	2.08
5,415.00	6.23	2.36	5,405.53	179.40	23.13	-179.11	0.27	-0.27	0.03
5,510.00	6.35	4.34	5,499.96	189.79	23.74	-189.49	0.26	0.13	2.08
5,604.00	6.09	4.58	5,593.41	199.95	24.53	-199.63	0.28	-0.28	0.26
5,697.00	5.18	5.35	5,685.96	209.04	25.32	-208.72	0.98	-0.98	0.83
5,791.00	5.72	7.31	5,779.53	217.91	26.31	-217.58	0.61	0.57	2.09
5,885.00	6.62	9.12	5,872.99	227.91	27.76	-227.55	0.98	0.96	1.93
5,979.00	7.81	11.17	5,966.24	239.53	29.86	-239.14	1.30	1.27	2.18
6,074.00	7.73	12.60	6,060.37	252.09	32.50	-251.68	0.22	-0.08	1.51
6,168.00	7.38	12.26	6,153.55	264.16	35.16	-263.71	0.38	-0.37	-0.36
6,263.00	6.88	16.84	6,247.82	275.57	38.11	-275.09	0.80	-0.53	4.82
6,357.00	7.18	15.44	6,341.11	286.62	41.30	-286.10	0.37	0.32	-1.49
6,451.00	8.14	14.02	6,434.27	298.74	44.48	-298.18	1.04	1.02	-1.51
6,545.00	7.73	13.74	6,527.37	311.34	47.59	-310.74	0.44	-0.44	-0.30
6,638.00	7.21	16.60	6,619.58	323.01	50.75	-322.36	0.69	-0.56	3.08
6,732.00	6.80	14.03	6,712.88	334.06	53.78	-333.38	0.55	-0.44	-2.73
6,826.00	6.80	16.94	6,806.22	344.78	56.75	-344.06	0.37	0.00	3.10
6,920.00	6.79	15.21	6,899.56	355.47	59.83	-354.71	0.22	-0.01	-1.84
7,013.00	6.50	16.56	6,991.93	365.82	62.77	-365.03	0.35	-0.31	1.45
7,108.00	6.50	18.56	7,086.32	376.07	66.02	-375.24	0.24	0.00	2.11
7,202.00	6.38	21.53	7,179.73	385.97	69.63	-385.09	0.38	-0.13	3.16
7,296.00	6.28	22.57	7,273.16	395.58	73.52	-394.65	0.16	-0.11	1.11
7,389.00	5.85	20.77	7,365.64	404.71	77.15	-403.73	0.51	-0.46	-1.94
7,484.00	5.68	24.04	7,460.16	413.53	80.78	-412.51	0.39	-0.18	3.44
7,578.00	5.36	24.03	7,553.72	421.79	84.46	-420.72	0.34	-0.34	-0.01
7,673.00	4.73	24.40	7,648.35	429.41	87.89	-428.30	0.66	-0.66	0.39
7,768.00	4.06	24.23	7,743.07	436.04	90.89	-434.90	0.71	-0.71	-0.18
7,857.00	4.16	21.95	7,831.84	441.91	93.39	-440.73	0.22	0.11	-2.56
7,952.00	3.53	22.27	7,926.63	447.81	95.78	-446.61	0.66	-0.66	0.34
8,046.00	3.44	21.73	8,020.45	453.11	97.92	-451.88	0.10	-0.10	-0.57
8,140.00	3.06	26.54	8,114.30	457.97	100.09	-456.71	0.50	-0.40	5.12
8,234.00	2.98	26.47	8,208.17	462.40	102.30	-461.12	0.09	-0.09	-0.07
8,328.00	2.89	25.99	8,302.05	466.72	104.43	-465.41	0.10	-0.10	-0.51
8,422.00	2.84	23.39	8,395.93	470.99	106.39	-469.65	0.15	-0.05	-2.77
8,516.00	2.46	27.81	8,489.83	474.91	108.26	-473.55	0.46	-0.40	4.70
8,611.00	2.52	30.96	8,584.74	478.50	110.28	-477.12	0.16	0.06	3.32
8,685.00	2.36	33.31	8,658.67	481.17	111.96	-479.77	0.25	-0.22	3.18
8,765.00	1.82	38.10	8,738.62	483.55	113.64	-482.12	0.71	-0.68	5.99
8,860.00	1.64	7.96	8,833.58	486.08	114.76	-484.64	0.96	-0.19	-31.73
8,955.00	1.69	5.27	8,928.54	488.82	115.08	-487.38	0.10	0.05	-2.83
9,049.00	1.60	343.07	9,022.50	491.46	114.82	-490.02	0.68	-0.10	-23.62
9,143.00	2.74	329.35	9,116.43	494.65	113.30	-493.23	1.32	1.21	-14.60

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Design:	OH	Database:	Midland District

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9,237.00	2.47	321.99	9,210.34	498.18	110.90	-496.78	0.46	-0.29	-7.83
9,332.00	2.18	330.01	9,305.26	501.35	108.74	-499.99	0.46	-0.31	8.44
9,426.00	2.07	327.87	9,399.19	504.34	106.94	-503.00	0.14	-0.12	-2.28
9,520.00	2.18	305.53	9,493.13	506.82	104.59	-505.50	0.88	0.12	-23.77
9,615.00	2.17	301.40	9,588.06	508.80	101.58	-507.52	0.17	-0.01	-4.35
9,710.00	1.86	281.23	9,683.01	510.04	98.53	-508.80	0.81	-0.33	-21.23
9,804.00	2.87	342.15	9,776.94	512.58	96.32	-511.36	2.71	1.07	64.81
9,899.00	3.91	0.43	9,871.77	518.08	95.61	-516.87	1.57	1.09	19.24
9,993.00	4.26	9.79	9,965.53	524.73	96.23	-523.51	0.80	0.37	9.96
10,086.00	2.27	21.42	10,058.38	529.85	97.49	-528.62	2.24	-2.14	12.51
10,181.00	4.57	131.12	10,153.27	529.11	101.03	-527.83	6.05	2.42	115.47
10,275.00	9.62	144.30	10,246.53	520.26	108.44	-518.90	5.61	5.37	14.02
10,306.00	11.98	144.43	10,276.97	515.54	111.82	-514.13	7.61	7.61	0.42
10,368.00	15.08	147.73	10,337.25	503.48	119.87	-501.98	5.15	5.00	5.32
10,463.00	20.10	149.31	10,427.78	478.98	134.81	-477.30	5.31	5.28	1.66
10,497.00	24.54	149.10	10,459.22	467.89	141.42	-466.13	13.06	13.06	-0.62
10,556.00	32.87	148.44	10,510.93	443.69	156.12	-441.75	14.13	14.12	-1.12
10,650.00	43.08	154.48	10,584.95	392.84	183.38	-390.57	11.55	10.86	6.43
10,744.00	54.26	165.23	10,647.03	326.66	207.05	-324.11	14.64	11.89	11.44
10,806.00	63.88	170.12	10,678.88	274.76	218.28	-272.08	16.92	15.52	7.89
10,837.00	68.20	172.48	10,691.46	246.77	222.55	-244.03	15.57	13.94	7.61
10,924.00	77.97	181.62	10,716.80	163.84	226.65	-161.06	15.06	11.23	10.51
10,930.00	78.70	181.87	10,718.01	157.96	226.47	-155.18	12.83	12.17	4.17
10,956.00	83.38	182.76	10,722.06	132.31	225.43	-129.55	18.31	18.00	3.42
11,002.00	85.43	185.83	10,726.54	86.66	222.00	-83.95	8.00	4.46	6.67
11,050.00	85.32	185.95	10,730.41	39.07	217.09	-36.42	0.34	-0.23	0.25
11,062.05	85.96	185.77	10,731.33	27.12	215.87	-24.48	5.49	5.30	-1.45
LP[FC1218H]									
11,144.00	90.30	184.59	10,734.00	-54.43	208.47	56.97	5.49	5.30	-1.45
11,237.00	89.90	184.89	10,733.84	-147.11	200.79	149.55	0.54	-0.43	0.32
11,331.00	90.84	184.44	10,733.24	-240.80	193.14	243.14	1.11	1.00	-0.48
11,423.00	92.12	184.69	10,730.86	-332.47	185.82	334.72	1.42	1.39	0.27
11,518.00	91.54	184.53	10,727.83	-427.12	178.19	429.26	0.63	-0.61	-0.17
11,612.00	90.87	184.84	10,725.85	-520.78	170.51	522.82	0.79	-0.71	0.33
11,706.00	91.44	184.05	10,723.95	-614.48	163.23	616.43	1.04	0.61	-0.84
11,799.00	91.18	184.05	10,721.83	-707.22	156.66	709.08	0.28	-0.28	0.00
11,893.00	90.80	181.08	10,720.20	-801.10	152.46	802.90	3.18	-0.40	-3.16
11,987.00	89.73	181.63	10,719.77	-895.07	150.24	896.84	1.28	-1.14	0.59
12,083.00	90.10	180.31	10,719.91	-991.06	148.61	992.80	1.43	0.39	-1.38
12,176.00	89.53	180.04	10,720.21	-1,084.05	148.33	1,085.79	0.68	-0.61	-0.29
12,270.00	91.68	179.33	10,719.22	-1,178.04	148.84	1,179.77	2.41	2.29	-0.76
12,364.00	91.24	179.03	10,716.82	-1,272.00	150.19	1,273.74	0.57	-0.47	-0.32
12,458.00	90.44	178.45	10,715.45	-1,365.97	152.26	1,367.73	1.05	-0.85	-0.62
12,551.00	89.56	178.71	10,715.45	-1,458.94	154.58	1,460.72	0.99	-0.95	0.28

Scientific Drilling, Intl

Survey Report

Company: Devon Energy
 Project: Lea County, NM (NAD83 NME)
 Site: Fluffy Cat 16-21 State Fed Com
 Well: 218H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well 218H
 TVD Reference: KB = 32' @ 3727.00usft (Nabors X15)
 MD Reference: KB = 32' @ 3727.00usft (Nabors X15)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 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)
12,645.00	89.43	178.75	10,716.27	-1,552.91	156.64	1,554.71	0.14	-0.14	0.04
12,739.00	89.63	178.65	10,717.04	-1,646.88	158.78	1,648.70	0.24	0.21	-0.11
12,832.00	89.70	178.19	10,717.59	-1,739.85	161.34	1,741.69	0.50	0.08	-0.49
12,926.00	90.54	178.41	10,717.39	-1,833.80	164.13	1,835.67	0.92	0.89	0.23
13,019.00	91.11	178.76	10,716.05	-1,926.77	166.42	1,928.66	0.72	0.61	0.38
13,113.00	90.81	178.76	10,714.48	-2,020.73	168.46	2,022.64	0.32	-0.32	0.00
13,207.00	90.34	178.19	10,713.53	-2,114.69	170.96	2,116.62	0.79	-0.50	-0.61
13,301.00	90.64	177.73	10,712.73	-2,208.63	174.31	2,210.59	0.58	0.32	-0.49
13,395.00	91.04	177.17	10,711.35	-2,302.52	178.49	2,304.53	0.73	0.43	-0.60
13,488.00	90.91	177.97	10,709.77	-2,395.43	182.43	2,397.48	0.87	-0.14	0.86
13,581.00	90.24	177.35	10,708.84	-2,488.34	186.23	2,490.43	0.98	-0.72	-0.67
13,676.00	91.58	178.92	10,707.33	-2,583.28	189.32	2,585.40	2.17	1.41	1.65
13,770.00	92.35	179.64	10,704.10	-2,677.21	190.50	2,679.34	1.12	0.82	0.77
13,864.00	92.12	179.74	10,700.44	-2,771.14	191.01	2,773.27	0.27	-0.24	0.11
13,958.00	91.54	181.04	10,697.44	-2,865.09	190.37	2,867.20	1.51	-0.62	1.38
14,052.00	91.21	181.79	10,695.18	-2,959.03	188.05	2,961.11	0.87	-0.35	0.80
14,147.00	90.50	181.99	10,693.76	-3,053.97	184.91	3,056.00	0.78	-0.75	0.21
14,242.00	89.66	182.48	10,693.63	-3,148.89	181.21	3,150.87	1.02	-0.88	0.52
14,337.00	89.36	182.47	10,694.44	-3,243.80	177.11	3,245.72	0.32	-0.32	-0.01
14,431.00	89.43	180.98	10,695.44	-3,337.75	174.28	3,339.63	1.59	0.07	-1.59
14,526.00	89.36	180.47	10,696.44	-3,432.74	173.08	3,434.60	0.54	-0.07	-0.54
14,621.00	89.36	180.26	10,697.50	-3,527.73	172.47	3,529.57	0.22	0.00	-0.22
14,715.00	89.13	180.72	10,698.74	-3,621.72	171.67	3,623.55	0.55	-0.24	0.49
14,809.00	87.42	180.48	10,701.57	-3,715.67	170.68	3,717.47	1.84	-1.82	-0.26
14,903.00	86.98	180.57	10,706.16	-3,809.55	169.82	3,811.34	0.48	-0.47	0.10
14,998.00	88.46	180.18	10,709.94	-3,904.47	169.20	3,906.25	1.61	1.56	-0.41
15,092.00	90.67	179.84	10,710.65	-3,998.46	169.19	4,000.23	2.38	2.35	-0.36
15,186.00	93.42	179.58	10,707.30	-4,092.39	169.66	4,094.16	2.94	2.93	-0.28
15,280.00	93.86	179.63	10,701.33	-4,186.20	170.31	4,187.97	0.47	0.47	0.05
15,374.00	93.76	179.76	10,695.09	-4,279.99	170.81	4,281.76	0.17	-0.11	0.14
15,468.00	93.69	179.87	10,688.98	-4,373.79	171.11	4,375.56	0.14	-0.07	0.12
15,562.00	93.32	179.69	10,683.23	-4,467.61	171.47	4,469.38	0.44	-0.39	-0.19
15,657.00	91.68	180.07	10,679.09	-4,562.52	171.67	4,564.28	1.77	-1.73	0.40
15,752.00	91.31	180.42	10,676.61	-4,657.49	171.26	4,659.23	0.54	-0.39	0.37
15,847.00	91.04	180.97	10,674.66	-4,752.46	170.11	4,754.18	0.64	-0.28	0.58
15,941.00	90.34	180.60	10,673.53	-4,846.44	168.82	4,848.14	0.84	-0.74	-0.39
16,036.00	89.90	179.72	10,673.33	-4,941.44	168.56	4,943.13	1.04	-0.46	-0.93
16,131.00	89.50	179.65	10,673.83	-5,036.44	169.08	5,038.13	0.43	-0.42	-0.07
16,225.00	90.74	179.36	10,673.63	-5,130.43	169.89	5,132.13	1.35	1.32	-0.31
16,319.00	89.66	178.65	10,673.30	-5,224.42	171.52	5,226.12	1.37	-1.15	-0.76
16,413.00	89.80	179.04	10,673.75	-5,318.40	173.42	5,320.12	0.44	0.15	0.41
16,507.00	90.07	178.71	10,673.85	-5,412.38	175.26	5,414.11	0.45	0.29	-0.35
16,601.00	90.64	178.95	10,673.27	-5,506.36	177.18	5,508.11	0.66	0.61	0.26

Scientific Drilling, Intl **Survey Report**

Company:	Devon Energy	Local Co-ordinate Reference:	Well 218H
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB = 32' @ 3727.00usft (Nabors X15)
Site:	Fluffy Cat 16-21 State Fed Com	MD Reference:	KB = 32' @ 3727.00usft (Nabors X15)
Well:	218H	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)	
16,695.00	91.28	179.38	10,671.70	-5,600.33	178.55	5,602.09	0.82	0.68	0.46	
16,788.00	90.91	179.57	10,669.92	-5,693.31	179.41	5,695.08	0.45	-0.40	0.20	
16,881.00	90.27	179.74	10,668.96	-5,786.30	179.97	5,788.07	0.71	-0.69	0.18	
16,975.00	90.44	179.55	10,668.38	-5,880.30	180.55	5,882.07	0.27	0.18	-0.20	
17,069.00	90.54	180.04	10,667.57	-5,974.30	180.88	5,976.06	0.53	0.11	0.52	
17,163.00	90.54	180.13	10,666.69	-6,068.29	180.74	6,070.05	0.10	0.00	0.10	
17,257.00	89.83	179.76	10,666.38	-6,162.29	180.83	6,164.04	0.85	-0.76	-0.39	
17,351.00	90.20	179.49	10,666.36	-6,256.29	181.45	6,258.04	0.49	0.39	-0.29	
17,445.00	91.34	179.27	10,665.10	-6,350.27	182.47	6,352.03	1.24	1.21	-0.23	
17,538.00	90.57	178.64	10,663.55	-6,443.24	184.16	6,445.01	1.07	-0.83	-0.68	
17,637.00	91.28	178.46	10,661.95	-6,542.20	186.67	6,543.99	0.74	0.72	-0.18	
17,731.00	90.60	177.76	10,660.41	-6,636.13	189.77	6,637.96	1.04	-0.72	-0.74	
17,825.00	88.08	178.27	10,661.49	-6,730.06	193.02	6,731.92	2.74	-2.68	0.54	
17,919.00	88.52	178.02	10,664.28	-6,823.97	196.06	6,825.86	0.54	0.47	-0.27	
18,013.00	88.66	177.84	10,666.59	-6,917.88	199.46	6,919.80	0.24	0.15	-0.19	
18,108.00	88.89	177.61	10,668.62	-7,012.78	203.23	7,014.74	0.34	0.24	-0.24	
18,201.00	88.99	177.37	10,670.34	-7,105.68	207.30	7,107.68	0.28	0.11	-0.26	
18,295.00	89.26	176.89	10,671.78	-7,199.55	212.01	7,201.60	0.59	0.29	-0.51	
18,359.79	89.21	176.59	10,672.64	-7,264.23	215.69	7,266.32	0.46	-0.07	-0.46	
BHL[FC\218H]										
18,389.00	89.19	176.46	10,673.05	-7,293.38	217.46	7,295.50	0.46	-0.07	-0.46	
18,482.00	89.36	176.20	10,674.23	-7,386.18	223.41	7,388.36	0.33	0.18	-0.28	
18,576.00	89.43	176.15	10,675.22	-7,479.97	229.68	7,482.22	0.09	0.07	-0.05	
18,604.00	89.40	176.04	10,675.50	-7,507.90	231.59	7,510.17	0.41	-0.11	-0.39	
FINAL MWD Survey (18604.00' MD)										
18,675.00	89.40	176.04	10,676.25	-7,578.73	236.49	7,581.05	0.00	0.00	0.00	
FINAL Proj. to Bit (18675.00' MD)										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
18,604.00	10,675.50	-7,507.90	231.59	FINAL MWD Survey (18604.00' MD)	
18,675.00	10,676.25	-7,578.73	236.49	FINAL Proj. to Bit (18675.00' MD)	

Checked By: _____	Approved By: _____	Date: _____
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