

DEC 02 2019

Revised August 1, 2011

partment
DISTRICT 7 - ARTESIA, C.D.
Revised
in one top

District Office

☒ AMENDED REPORT
AS DRILLED

¹ API Number 30-015-45268	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP
⁴ Property Code	⁵ Property Name SPUD MUFFIN 31-30	⁶ Well Number 624H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 2960.3

10 Surface Location									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	31	23 S	29 E		485	SOUTH	280	EAST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	30	23 S	29 E		12	NORTH	376	EAST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
640			

Section	Point	Bearing	Distance
SEC. 30	NW CORNER SEC. 30	S88°16'48"E	2559.70 FT
	NE CORNER SEC. 30	S88°23'39"E	2610.85 FT
	SW CORNER SEC. 30	S88°43'23"E	2528.43 FT
	SE CORNER SEC. 30	S88°57'57"E	2654.47 FT
SEC. 31	NW CORNER SEC. 31	S89°35'48"W	2641.66 FT
	NE CORNER SEC. 31	S89°35'48"W	2649.74 FT
	SW CORNER SEC. 31	S89°35'48"W	2649.74 FT
	SE CORNER SEC. 31	S89°35'48"W	2649.74 FT

Intent ☐ As Drilled ☒

API #
30-015-45268

Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: SPUD MUFFIN 31-30	Well Number 624H
--	-------------------------------------	---------------------

Kick Off Point (KOP)

UL P	Section 31	Township 23S	Range 29E	Lot	Feet 79	From N/S SOUTH	Feet 338	From E/W EAST	County EDDY
Latitude 32.2544033					Longitude 104.0163348			NAD 83	

First Take Point (FTP)

UL P	Section 31	Township 23S	Range 29E	Lot	Feet 660	From N/S SOUTH	Feet 386	From E/W EAST	County EDDY
Latitude 32.2560015					Longitude 104.0165230			NAD 83	

Last Take Point (LTP)

UL A	Section 30	Township 23S	Range 29E	Lot	Feet 190	From N/S NORTH	Feet 378	From E/W EAST	County EDDY
Latitude 32.2826656					Longitude 104.0167515			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
----------------	----------------	-------------

KZ 06/29/2018

RECEIVED

DEC 06 2019

DEC 06 2019

DISTRICT 7 / ARTESIA O.C.D.

DISTRICT 7 / ARTESIA O.C.D.

Devon

SURVEY REPORT

Spud Muffin 31-30 624H

Cactus 167

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

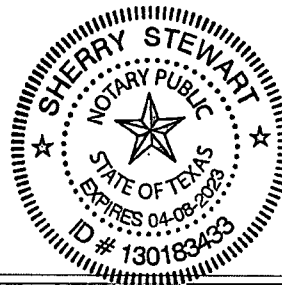
Notarized this data 3rd of December, 2019.

Sherry Stewart

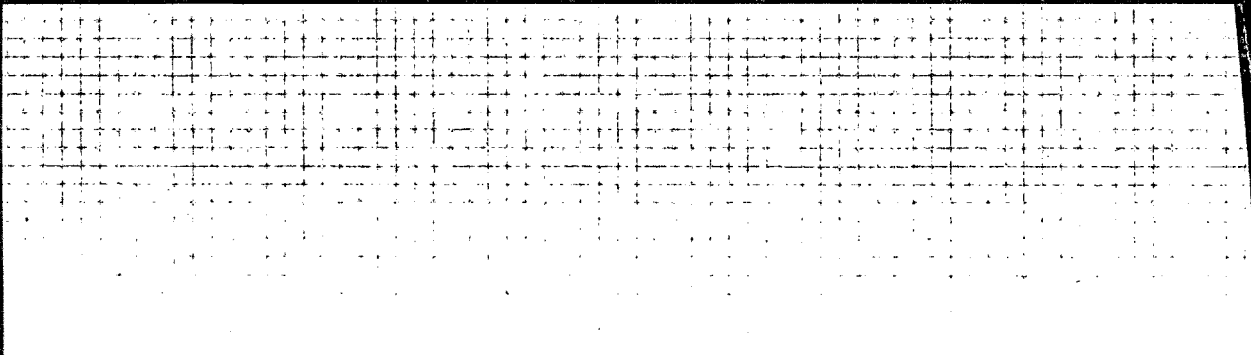
Notary Signature

County of Midland

State of Texas



The Ultimate Partner In Wellbore Placement



Devon Energy

Eddy County, NM (NAD83 NME)

Spud Muffin 31-30

624H

OH

Survey: SDI Surveys #1

Standard Survey Report

11 February, 2019



www.scientificdrilling.com



Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 624H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Site:	Spud Muffin 31-30	MD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Well:	624H	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:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	Spud Muffin 31-30		
Site Position:		Northing:	456,686.87 usft
From:	Map	Easting:	639,208.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 15' 18.399 N
		Longitude:	104° 1' 0.221 W
		Grid Convergence:	0.17 °

Well	624H		
Well Position	+N/-S	0.00 usft	Northing: 456,835.38 usft
	+E/-W	0.00 usft	Easting: 639,410.99 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 15' 19.863 N
		Longitude:	104° 0' 57.862 W
		Ground Level:	2,960.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	12/4/2018	7.10
			Dip Angle
			60.02
			Field Strength
			47,955

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)
			358.91

Survey Program	Date 2/11/2019		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		Description
269.00	20,008.00	SDI Surveys #1 (OH)	MWD+HDGM
			OWSG MWD + HDGM

Survey			
Measured	Inclination	Azimuth	Vertical
Depth	(°)	(bearing)	Depth
(usft)			(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
269.00	0.41	352.30	269.00
292.00	0.72	357.21	292.00
420.00	0.71	20.64	419.99
511.00	0.85	18.48	510.98
603.00	1.08	34.14	602.97
693.00	0.98	38.51	692.95
784.00	1.23	45.99	783.93
876.00	0.36	283.92	875.93
967.00	0.22	309.26	966.93
			5.26
			1.21
			5.23
			0.38
			0.25
			17.02
			4.86
			8.22
			-132.68
			27.85

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 624H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Site:	Spud Muffin 31-30	MD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Well:	624H	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)
1,057.00	0.26	36.61	1,056.93	9.06	3.36	8.99	0.37	0.04	97.06
1,147.00	0.40	56.92	1,146.92	9.39	3.74	9.32	0.20	0.16	22.57
1,237.00	0.68	56.63	1,236.92	9.86	4.45	9.77	0.31	0.31	-0.32
1,326.00	0.76	131.23	1,325.91	9.76	5.34	9.66	0.98	0.09	83.82
1,417.00	1.32	146.70	1,416.90	8.49	6.36	8.36	0.68	0.62	17.00
1,508.00	1.22	130.19	1,507.88	6.98	7.68	6.84	0.42	-0.11	-18.14
1,601.00	1.31	131.02	1,600.85	5.65	9.24	5.47	0.10	0.10	0.89
1,692.00	0.67	160.65	1,691.84	4.46	10.20	4.27	0.88	-0.70	32.56
1,783.00	0.42	158.37	1,782.84	3.65	10.50	3.45	0.28	-0.27	-2.51
1,877.00	0.91	117.15	1,876.83	2.99	11.29	2.78	0.70	0.52	-43.85
1,972.00	0.59	175.74	1,971.82	2.16	12.00	1.93	0.83	-0.34	61.67
2,067.00	0.11	87.68	2,066.82	1.67	12.13	1.44	0.63	-0.51	-92.69
2,162.00	1.15	86.03	2,161.82	1.74	13.17	1.49	1.09	1.09	-1.74
2,258.00	0.97	87.77	2,257.80	1.84	14.94	1.56	0.19	-0.19	1.81
2,353.00	0.67	248.00	2,352.80	1.67	15.23	1.38	1.70	-0.32	168.66
2,449.00	1.63	209.05	2,448.78	0.26	14.05	-0.01	1.24	1.00	-40.57
2,544.00	2.42	189.88	2,543.72	-2.90	13.05	-3.14	1.08	0.83	-20.18
2,640.00	2.37	186.90	2,639.63	-6.86	12.46	-7.10	0.14	-0.05	-3.10
2,735.00	1.98	188.53	2,734.56	-10.44	11.98	-10.66	0.42	-0.41	1.72
2,831.00	1.62	184.83	2,830.52	-13.43	11.62	-13.65	0.39	-0.38	-3.85
2,926.00	2.60	184.82	2,925.45	-16.91	11.33	-17.13	1.03	1.03	-0.01
3,021.00	3.44	185.87	3,020.32	-21.90	10.85	-22.10	0.89	0.88	1.11
3,116.00	3.93	183.46	3,115.12	-27.98	10.36	-28.17	0.54	0.52	-2.54
3,212.00	5.06	182.36	3,210.83	-35.49	9.99	-35.68	1.18	1.18	-1.15
3,307.00	5.16	182.61	3,305.45	-43.95	9.62	-44.12	0.11	0.11	0.26
3,403.00	5.84	185.29	3,401.01	-53.12	8.98	-53.29	0.76	0.71	2.79
3,498.00	6.95	185.46	3,495.41	-63.66	7.99	-63.80	1.17	1.17	0.18
3,594.00	7.16	185.13	3,590.69	-75.40	6.90	-75.52	0.22	0.22	-0.34
3,689.00	6.68	186.64	3,684.99	-86.78	5.73	-86.88	0.54	-0.51	1.59
3,784.00	6.01	184.69	3,779.41	-97.23	4.68	-97.30	0.74	-0.71	-2.05
3,880.00	6.15	186.80	3,874.87	-107.34	3.66	-107.39	0.27	0.15	2.20
3,975.00	6.97	188.09	3,969.25	-118.10	2.25	-118.13	0.88	0.86	1.36
4,071.00	6.76	188.30	4,064.56	-129.46	0.62	-129.45	0.22	-0.22	0.22
4,166.00	6.50	188.29	4,158.92	-140.32	-0.97	-140.27	0.27	-0.27	-0.01
4,261.00	6.04	187.46	4,253.36	-150.59	-2.39	-150.52	0.49	-0.48	-0.87
4,357.00	5.61	187.76	4,348.86	-160.25	-3.68	-160.15	0.45	-0.45	0.31
4,452.00	6.13	183.04	4,443.36	-169.92	-4.58	-169.80	0.75	0.55	-4.97
4,548.00	6.65	179.04	4,538.77	-180.59	-4.76	-180.47	0.71	0.54	-4.17
4,643.00	6.44	179.05	4,633.15	-191.42	-4.58	-191.30	0.22	-0.22	0.01
4,738.00	6.50	181.52	4,727.54	-202.12	-4.63	-202.00	0.30	0.06	2.60
4,833.00	6.39	180.76	4,821.94	-212.78	-4.84	-212.65	0.15	-0.12	-0.80
4,929.00	6.49	180.76	4,917.34	-223.55	-4.98	-223.41	0.10	0.10	0.00
5,024.00	6.21	181.26	5,011.75	-234.06	-5.17	-233.91	0.30	-0.29	0.53
5,119.00	5.90	179.88	5,106.22	-244.07	-5.27	-243.93	0.36	-0.33	-1.45

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 624H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Site:	Spud Muffin 31-30	MD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Well:	624H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland District

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)
5,214.00	5.47	180.38	5,200.76	-253.49	-5.29	-253.34	0.46	-0.45	0.53
5,309.00	4.86	180.54	5,295.37	-262.04	-5.36	-261.89	0.64	-0.64	0.17
5,404.00	4.86	177.54	5,390.03	-270.08	-5.22	-269.93	0.27	0.00	-3.16
5,499.00	5.14	176.09	5,484.67	-278.35	-4.76	-278.21	0.32	0.29	-1.53
5,594.00	4.91	175.47	5,579.30	-286.65	-4.15	-286.52	0.25	-0.24	-0.65
5,689.00	4.66	176.61	5,673.97	-294.55	-3.60	-294.43	0.28	-0.26	1.20
5,784.00	5.13	179.78	5,768.62	-302.65	-3.36	-302.53	0.57	0.49	3.34
5,880.00	5.16	179.77	5,864.24	-311.26	-3.32	-311.14	0.03	0.03	-0.01
5,975.00	4.99	180.43	5,958.86	-319.66	-3.34	-319.54	0.19	-0.18	0.69
6,071.00	4.72	180.59	6,054.52	-327.79	-3.41	-327.66	0.28	-0.28	0.17
6,166.00	4.44	178.26	6,149.22	-335.37	-3.34	-335.25	0.35	-0.29	-2.45
6,261.00	4.22	177.67	6,243.94	-342.54	-3.08	-342.42	0.24	-0.23	-0.62
6,356.00	3.98	179.13	6,338.70	-349.33	-2.89	-349.21	0.28	-0.25	1.54
6,450.00	3.74	176.67	6,432.49	-355.65	-2.66	-355.54	0.31	-0.26	-2.62
6,546.00	3.45	182.21	6,528.30	-361.66	-2.59	-361.55	0.47	-0.30	5.77
6,641.00	2.82	191.22	6,623.16	-366.81	-3.16	-366.69	0.84	-0.66	9.48
6,737.00	1.91	191.84	6,719.08	-370.69	-3.95	-370.55	0.95	-0.95	0.65
6,832.00	1.71	197.08	6,814.03	-373.60	-4.69	-373.44	0.27	-0.21	5.52
6,927.00	1.64	212.76	6,908.99	-376.10	-5.84	-375.92	0.49	-0.07	16.51
7,021.00	1.41	230.33	7,002.95	-377.97	-7.46	-377.76	0.55	-0.24	18.69
7,116.00	0.72	227.10	7,097.94	-379.12	-8.79	-378.88	0.73	-0.73	-3.40
7,211.00	0.66	246.37	7,192.93	-379.74	-9.73	-379.49	0.25	-0.06	20.28
7,306.00	0.89	252.23	7,287.92	-380.19	-10.94	-379.91	0.26	0.24	6.17
7,402.00	1.34	248.89	7,383.90	-380.82	-12.69	-380.51	0.47	0.47	-3.48
7,497.00	1.48	243.20	7,478.88	-381.77	-14.83	-381.42	0.21	0.15	-5.99
7,593.00	1.64	243.52	7,574.84	-382.95	-17.16	-382.55	0.17	0.17	0.33
7,688.00	1.66	241.92	7,669.80	-384.20	-19.59	-383.76	0.05	0.02	-1.68
7,784.00	1.72	240.24	7,765.76	-385.57	-22.07	-385.08	0.08	0.06	-1.75
7,879.00	1.85	244.60	7,860.71	-386.93	-24.69	-386.39	0.20	0.14	4.59
7,975.00	2.08	240.89	7,956.66	-388.45	-27.61	-387.85	0.27	0.24	-3.86
8,070.00	2.17	242.40	8,051.59	-390.12	-30.71	-389.46	0.11	0.09	1.59
8,166.00	1.91	234.07	8,147.53	-391.90	-33.62	-391.19	0.41	-0.27	-8.68
8,261.00	1.89	216.12	8,242.48	-394.09	-35.83	-393.34	0.62	-0.02	-18.89
8,356.00	1.76	215.84	8,337.43	-396.54	-37.60	-395.75	0.14	-0.14	-0.29
8,452.00	1.39	224.63	8,433.39	-398.57	-39.29	-397.75	0.46	-0.39	9.16
8,547.00	1.44	224.81	8,528.36	-400.23	-40.94	-399.38	0.05	0.05	0.19
8,642.00	1.27	223.16	8,623.34	-401.85	-42.50	-400.97	0.18	-0.18	-1.74
8,738.00	1.47	234.67	8,719.31	-403.34	-44.23	-402.42	0.35	0.21	11.99
8,833.00	1.27	236.51	8,814.28	-404.62	-46.10	-403.67	0.22	-0.21	1.94
8,928.00	0.96	221.70	8,909.27	-405.80	-47.51	-404.82	0.44	-0.33	-15.59
9,022.00	0.93	218.50	9,003.25	-406.98	-48.51	-405.98	0.06	-0.03	-3.40
9,036.00	0.92	215.96	9,017.25	-407.16	-48.64	-406.16	0.30	-0.07	-18.14
9,117.00	0.75	201.82	9,098.24	-408.18	-49.22	-407.17	0.33	-0.21	-17.46

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 624H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Site:	Spud Muffin 31-30	MD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Well:	624H	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)
9,176.00	0.71	194.81	9,157.24	-408.89	-49.46	-407.88	0.17	-0.07	-11.88
9,313.00	6.58	355.90	9,293.96	-401.87	-50.24	-400.84	5.30	4.28	117.58
9,360.00	15.64	7.40	9,340.04	-392.89	-49.61	-391.87	19.75	19.28	24.47
9,408.00	22.12	3.94	9,385.43	-377.44	-48.16	-376.45	13.69	13.50	-7.21
9,455.00	28.52	358.63	9,427.90	-357.37	-47.82	-356.39	14.44	13.62	-11.30
9,503.00	31.98	356.33	9,469.36	-333.22	-48.91	-332.23	7.60	7.21	-4.79
9,550.00	37.39	353.62	9,508.00	-306.59	-51.29	-305.56	11.97	11.51	-5.77
9,598.00	42.86	350.52	9,544.69	-275.98	-55.60	-274.88	12.13	11.40	-6.46
9,645.00	49.39	352.72	9,577.25	-242.48	-60.50	-241.29	14.30	13.89	4.68
9,694.00	52.92	352.76	9,607.98	-204.63	-65.32	-203.35	7.20	7.20	0.08
9,741.00	54.51	353.24	9,635.79	-167.03	-69.94	-165.67	3.48	3.38	1.02
9,790.00	59.77	355.14	9,662.37	-126.09	-74.08	-124.66	11.22	10.73	3.88
9,837.00	64.87	354.71	9,684.20	-84.65	-77.77	-83.16	10.88	10.85	-0.91
9,886.00	66.40	353.34	9,704.41	-40.26	-82.42	-38.69	4.03	3.12	-2.80
9,933.00	67.11	352.81	9,722.96	2.61	-87.62	4.28	1.83	1.51	-1.13
9,980.00	67.03	352.50	9,741.27	45.54	-93.16	47.30	0.63	-0.17	-0.66
10,027.00	66.79	352.23	9,759.71	88.39	-98.90	90.26	0.73	-0.51	-0.57
10,075.00	66.49	352.82	9,778.74	132.08	-104.64	134.05	1.29	-0.63	1.23
10,122.00	70.68	353.78	9,795.90	175.53	-109.73	177.58	9.12	8.91	2.04
10,156.24	72.81	354.30	9,806.62	207.87	-113.11	209.99	6.40	6.23	1.53
FTP[SM624H]									
10,170.00	73.67	354.51	9,810.59	220.98	-114.39	223.12	6.40	6.23	1.50
10,217.00	75.12	353.68	9,823.23	266.01	-119.05	268.22	3.52	3.09	-1.77
10,265.00	77.31	354.17	9,834.67	312.36	-123.98	314.66	4.67	4.56	1.02
10,312.00	77.84	354.20	9,844.78	358.02	-128.63	360.40	1.13	1.13	0.06
10,361.00	82.18	353.19	9,853.28	405.97	-133.93	408.45	9.09	8.86	-2.06
10,408.00	86.95	354.10	9,857.73	452.46	-139.11	455.03	10.33	10.15	1.94
10,456.00	88.56	353.64	9,859.61	500.15	-144.23	502.80	3.49	3.35	-0.96
10,552.00	87.19	353.45	9,863.17	595.47	-155.02	598.31	1.44	-1.43	-0.20
10,647.00	88.16	354.84	9,867.02	689.90	-164.70	692.90	1.78	1.02	1.46
10,742.00	87.92	353.67	9,870.27	784.36	-174.20	787.53	1.26	-0.25	-1.23
10,837.00	88.96	355.96	9,872.86	878.93	-182.78	882.25	2.65	1.09	2.41
10,928.00	90.23	357.51	9,873.50	969.78	-187.97	973.18	2.20	1.40	1.70
11,019.00	89.66	356.78	9,873.59	1,060.66	-192.50	1,064.13	1.02	-0.63	-0.80
11,110.00	88.46	356.72	9,875.08	1,151.50	-197.66	1,155.05	1.32	-1.32	-0.07
11,201.00	91.68	358.76	9,874.97	1,242.41	-201.24	1,246.02	4.19	3.54	2.24
11,292.00	92.05	359.13	9,872.01	1,333.35	-202.92	1,336.97	0.57	0.41	0.41
11,383.00	89.70	0.38	9,870.62	1,424.33	-203.31	1,427.94	2.92	-2.58	1.37
11,474.00	90.70	0.18	9,870.30	1,515.33	-202.86	1,518.91	1.12	1.10	-0.22
11,564.00	89.46	0.83	9,870.18	1,605.32	-202.07	1,608.88	1.56	-1.38	0.72
11,654.00	88.06	0.73	9,872.12	1,695.29	-200.85	1,698.80	1.56	-1.56	-0.11
11,743.00	88.42	0.55	9,874.86	1,784.24	-199.85	1,787.72	0.45	0.40	-0.20
11,834.00	87.68	359.92	9,877.95	1,875.19	-199.48	1,878.64	1.07	-0.81	-0.69
11,925.00	87.41	359.33	9,881.85	1,966.10	-200.07	1,969.55	0.71	-0.30	-0.65

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 624H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Site:	Spud Muffin 31-30	MD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Well:	624H	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)
12,017.00	88.32	0.01	9,885.28	2,058.03	-200.60	2,061.48	1.23	0.99	0.74
12,109.00	90.47	0.22	9,886.25	2,150.02	-200.42	2,153.45	2.35	2.34	0.23
12,199.00	89.13	0.23	9,886.56	2,240.02	-200.06	2,243.42	1.49	-1.49	0.01
12,295.00	90.87	0.08	9,886.56	2,336.02	-199.81	2,339.40	1.82	1.81	-0.16
12,390.00	90.87	359.80	9,885.12	2,431.01	-199.90	2,434.37	0.29	0.00	-0.29
12,485.00	88.32	358.90	9,885.79	2,525.99	-200.98	2,529.35	2.85	-2.68	-0.95
12,580.00	89.33	359.14	9,887.74	2,620.95	-202.61	2,624.33	1.09	1.06	0.25
12,675.00	91.71	1.69	9,886.88	2,715.93	-201.92	2,719.28	3.67	2.51	2.68
12,770.00	90.37	0.40	9,885.16	2,810.90	-200.19	2,814.20	1.96	-1.41	-1.36
12,865.00	88.99	359.58	9,885.69	2,905.89	-200.20	2,909.17	1.69	-1.45	-0.86
12,960.00	91.04	359.20	9,885.66	3,000.88	-201.21	3,004.17	2.19	2.16	-0.40
13,055.00	88.79	357.49	9,885.80	3,095.83	-203.96	3,099.15	2.97	-2.37	-1.80
13,151.00	90.00	357.98	9,886.82	3,191.75	-207.75	3,195.12	1.36	1.26	0.51
13,246.00	92.12	359.61	9,885.06	3,286.70	-209.75	3,290.10	2.81	2.23	1.72
13,341.00	92.51	359.46	9,881.22	3,381.62	-210.52	3,385.02	0.44	0.41	-0.16
13,437.00	93.86	0.59	9,875.89	3,477.47	-210.48	3,480.85	1.83	1.41	1.18
13,532.00	92.04	3.02	9,871.00	3,572.29	-207.49	3,575.59	3.19	-1.92	2.56
13,628.00	87.96	3.74	9,871.00	3,668.10	-201.83	3,671.27	4.32	-4.25	0.75
13,723.00	88.12	3.19	9,874.25	3,762.87	-196.09	3,765.92	0.60	0.17	-0.58
13,818.00	87.04	1.24	9,878.26	3,857.71	-192.42	3,860.67	2.34	-1.14	-2.05
13,913.00	87.48	2.01	9,882.80	3,952.56	-189.73	3,955.45	0.93	0.46	0.81
14,009.00	88.08	2.44	9,886.52	4,048.41	-186.01	4,051.22	0.77	0.63	0.45
14,104.00	89.66	1.60	9,888.39	4,143.33	-182.66	4,146.06	1.88	1.66	-0.88
14,199.00	89.10	1.25	9,889.42	4,238.30	-180.30	4,240.96	0.70	-0.59	-0.37
14,294.00	88.73	0.87	9,891.22	4,333.26	-178.54	4,335.88	0.56	-0.39	-0.40
14,389.00	88.29	0.10	9,893.69	4,428.23	-177.74	4,430.81	0.93	-0.46	-0.81
14,484.00	89.13	359.26	9,895.83	4,523.20	-178.27	4,525.77	1.25	0.88	-0.88
14,579.00	90.67	358.98	9,895.99	4,618.19	-179.73	4,620.77	1.65	1.62	-0.29
14,675.00	91.18	359.20	9,894.44	4,714.16	-181.25	4,716.76	0.58	0.53	0.23
14,770.00	91.28	358.74	9,892.40	4,809.12	-182.96	4,811.73	0.50	0.11	-0.48
14,866.00	91.48	358.60	9,890.09	4,905.07	-185.19	4,907.71	0.25	0.21	-0.15
14,961.00	91.81	359.45	9,887.37	5,000.02	-186.80	5,002.66	0.96	0.35	0.89
15,056.00	89.50	359.75	9,886.28	5,095.00	-187.46	5,097.65	2.45	-2.43	0.32
15,150.00	90.23	359.29	9,886.50	5,189.00	-188.25	5,191.64	0.92	0.78	-0.49
15,245.00	90.30	359.90	9,886.06	5,283.99	-188.92	5,286.63	0.65	0.07	0.64
15,340.00	90.50	0.12	9,885.40	5,378.99	-188.91	5,381.61	0.31	0.21	0.23
15,435.00	88.32	359.83	9,886.38	5,473.98	-188.95	5,476.58	2.31	-2.29	-0.31
15,531.00	88.19	358.85	9,889.30	5,569.93	-190.05	5,572.53	1.03	-0.14	-1.02
15,626.00	87.95	357.84	9,892.50	5,664.83	-192.80	5,667.48	1.09	-0.25	-1.06
15,722.00	87.65	357.85	9,896.18	5,760.69	-196.40	5,763.39	0.31	-0.31	0.01
15,817.00	89.80	358.70	9,898.30	5,855.62	-199.26	5,858.35	2.43	2.26	0.89
15,912.00	90.67	359.80	9,897.91	5,950.61	-200.51	5,953.35	1.48	0.92	1.16
16,007.00	90.40	359.67	9,897.02	6,045.60	-200.94	6,048.33	0.32	-0.28	-0.14

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 624H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Site:	Spud Muffin 31-30	MD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Well:	624H	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)
16,102.00	89.90	359.06	9,896.77	6,140.60	-202.00	6,143.33	0.83	-0.53	-0.64
16,198.00	89.40	359.74	9,897.36	6,236.59	-203.00	6,239.32	0.88	-0.52	0.71
16,294.00	88.26	359.95	9,899.32	6,332.57	-203.26	6,335.29	1.21	-1.19	0.22
16,387.00	91.71	0.61	9,899.34	6,425.55	-202.81	6,428.25	3.78	3.71	0.71
16,481.00	92.21	0.15	9,896.13	6,519.49	-202.18	6,522.16	0.72	0.53	-0.49
16,574.00	90.34	1.40	9,894.06	6,612.46	-200.93	6,615.08	2.42	-2.01	1.34
16,667.00	90.84	2.27	9,893.10	6,705.40	-197.95	6,707.96	1.08	0.54	0.94
16,761.00	90.10	2.35	9,892.33	6,799.32	-194.16	6,801.79	0.79	-0.79	0.09
16,855.00	88.89	1.47	9,893.16	6,893.26	-191.03	6,895.65	1.59	-1.29	-0.94
16,949.00	88.26	0.89	9,895.50	6,987.21	-189.09	6,989.55	0.91	-0.67	-0.62
17,043.00	87.79	1.24	9,898.74	7,081.14	-187.35	7,083.42	0.62	-0.50	0.37
17,137.00	89.13	1.79	9,901.26	7,175.07	-184.86	7,177.29	1.54	1.43	0.59
17,232.00	90.23	0.80	9,901.79	7,270.04	-182.72	7,272.20	1.56	1.16	-1.04
17,326.00	90.13	0.86	9,901.50	7,364.03	-181.35	7,366.15	0.12	-0.11	0.06
17,421.00	90.17	0.65	9,901.25	7,459.03	-180.10	7,461.10	0.23	0.04	-0.22
17,516.00	89.83	359.98	9,901.25	7,554.02	-179.58	7,556.07	0.79	-0.36	-0.71
17,611.00	89.97	359.27	9,901.42	7,649.02	-180.20	7,651.06	0.76	0.15	-0.75
17,707.00	89.46	359.22	9,901.89	7,745.01	-181.47	7,747.06	0.53	-0.53	-0.05
17,801.00	89.40	359.00	9,902.83	7,838.99	-182.93	7,841.06	0.24	-0.06	-0.23
17,896.00	90.81	359.12	9,902.65	7,933.98	-184.48	7,936.05	1.49	1.48	0.13
17,991.00	90.00	359.05	9,901.98	8,028.96	-186.00	8,031.05	0.86	-0.85	-0.07
18,085.00	94.10	358.16	9,898.62	8,122.85	-188.29	8,124.97	4.46	4.36	-0.95
18,179.00	92.55	358.77	9,893.17	8,216.66	-190.80	8,218.80	1.77	-1.65	0.65
18,274.00	90.77	355.82	9,890.42	8,311.50	-195.28	8,313.71	3.63	-1.87	-3.11
18,367.00	89.90	357.20	9,889.87	8,404.32	-200.94	8,406.62	1.75	-0.94	1.48
18,462.00	89.56	356.68	9,890.32	8,499.19	-206.01	8,501.57	0.65	-0.36	-0.55
18,556.00	88.26	356.31	9,892.11	8,592.99	-211.76	8,595.46	1.44	-1.38	-0.39
18,651.00	87.92	356.35	9,895.27	8,687.74	-217.84	8,690.31	0.36	-0.36	0.04
18,745.00	87.95	357.45	9,898.66	8,781.54	-222.92	8,784.19	1.17	0.03	1.17
18,840.00	87.19	0.09	9,902.69	8,876.43	-224.96	8,879.10	2.89	-0.80	2.78
18,935.00	86.72	359.66	9,907.74	8,971.29	-225.16	8,973.95	0.67	-0.49	-0.45
19,029.00	87.59	0.96	9,912.40	9,065.17	-224.65	9,067.80	1.66	0.93	1.38
19,124.00	87.32	1.73	9,916.62	9,160.05	-222.43	9,162.62	0.86	-0.28	0.81
19,219.00	87.69	2.02	9,920.76	9,254.91	-219.32	9,257.41	0.49	0.39	0.31
19,314.00	87.69	1.34	9,924.59	9,349.79	-216.54	9,352.22	0.72	0.00	-0.72
19,410.00	88.79	1.11	9,927.53	9,445.72	-214.49	9,448.09	1.17	1.15	-0.24
19,505.00	90.10	1.14	9,928.45	9,540.70	-212.62	9,543.02	1.38	1.38	0.03
19,601.00	90.60	1.92	9,927.87	9,636.66	-210.06	9,638.91	0.97	0.52	0.81
19,696.00	91.17	1.75	9,926.40	9,731.60	-207.02	9,733.78	0.63	0.60	-0.18
19,792.00	90.94	1.34	9,924.63	9,827.55	-204.43	9,829.66	0.49	-0.24	-0.43
19,887.00	91.88	0.67	9,922.29	9,922.50	-202.76	9,924.57	1.21	0.99	-0.71
19,955.00	91.68	0.39	9,920.18	9,990.47	-202.13	9,992.51	0.51	-0.29	-0.41
FINAL MWD Survey (19955.00' MD)									

Scientific Drilling, Intl

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 624H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Site:	Spud Muffin 31-30	MD Reference:	KB=26 @ 2986.00usft (Cactus 167)
Well:	624H	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)	
20,008.00 ✓	91.68	0.39	✓ 9,918.63	10,043.44	-201.77	10,045.46	0.00	0.00	0.00	
FINAL Proj. to Bit (20008.00' MD) - BHL.Final[SM624H]										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BHL.Final[SM624H]	-89.80	0.00	9,916.00	10,043.91	-191.23	466,878.49	639,219.78	32° 16' 59.253 N	104° 0' 59.744 W	
- survey misses target center by 10.88usft at 20008.00usft MD (9918.63 TVD, 10043.44 N, -201.77 E)										
- Rectangle (sides W100.00 H20.00 D9,000.00)										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
19,955.00	9,920.18	9,990.47	-202.13	FINAL MWD Survey (19955.00' MD)	
✓ 20,008.00	✓ 9,918.63	10,043.44	-201.77	FINAL Proj. to Bit (20008.00' MD)	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------