



NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 16 2019

RECEIVED

Survey Certification Form

State of New Mexico
Eddy County

30.015-44940
Tomb Raider 1-12 Fed #334H

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Services, that I did on the day(s) of 06/17/2018 through 07/19/2018, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 21,781' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy Production Company, LP for the Tomb Raider 1-12 Fed Com 334H in Eddy County, New Mexico; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Services.

A handwritten signature in black ink, appearing to read 'Randy W. Rakowitz', is written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator



RECEIVED

JAN 16 2019

DISTRICT II-ARTESIA O.C.D.

July 20, 2018

Devon Energy Production Company, LP
Well: Tomb Raider 1-12 Fed Com 334H
County/Parish: Eddy County, NM

LEAM MWD: (OH) from 0' MD – 21,727' MD
Projection: 21,781' MD

This Borehole Survey taken between 06/17/18 and 07/19/18 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: July 20, 2018

~~Signature~~

API #

Operator Name:

Physical & Mailing: 2010 East Davis, Conroe, TX 77301
(936) 756-7577 • www.learn.net • 1 (800) 756-7504

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Tomb Raider 1-12 Fed Com
Well: Tomb Raider 1-12 Fed Com 334H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
MD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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	Tomb Raider 1-12 Fed Com		
Site Position:		Northing:	487,854.70 usft
From:	Map	Easting:	728,777.94 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 20' 23.0068 N
		Longitude:	103° 43' 35.1116 W
		Grid Convergence:	0.32 °

Well	Tomb Raider 1-12 Fed Com 334H		
Well Position	+N/-S	0.00 usft	Northing: 487,854.70 usft
	+E/-W	0.00 usft	Easting: 728,777.94 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 20' 23.0068 N
		Longitude:	103° 43' 35.1116 W
		Ground Level:	3,480.50 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	3/7/2018	(°) 6.95
			Dip Angle (°) 60.13
			Field Strength (nT) 48,139

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 (°) 179.68

Survey Program	Date 7/20/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
104.00	21,727.00	Survey #1 (OH)	LEAM MWD+HDGM
21,781.00	21,781.00	Survey #2 (OH)	Project
			Description
			MWD+HDGM
			Projection

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	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	
104.00	0.20	31.60	104.00	0.15	0.10	-0.15	0.19	0.19	0.00	
170.00	0.10	270.60	170.00	0.25	0.10	-0.25	0.40	-0.15	-183.33	
232.00	0.10	31.60	232.00	0.30	0.07	-0.30	0.28	0.00	195.16	
263.00	0.10	37.40	263.00	0.34	0.10	-0.34	0.03	0.00	18.71	
324.00	0.10	194.20	324.00	0.34	0.12	-0.33	0.32	0.00	257.05	
415.00	0.40	280.70	415.00	0.32	-0.21	-0.32	0.45	0.33	95.05	
506.00	0.40	227.20	506.00	0.16	-0.75	-0.16	0.40	0.00	-58.79	
597.00	0.50	267.30	596.99	-0.07	-1.38	0.07	0.35	0.11	44.07	
688.00	0.30	305.40	687.99	0.05	-1.98	-0.06	0.35	-0.22	41.87	

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 1-12 Fed Com 334H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3480.5' GE + 23.5' KB @ 3504.00usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3480.5' GE + 23.5' KB @ 3504.00usft
Well:	Tomb Raider 1-12 Fed Com 334H	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)
791.00	0.40	278.00	790.99	0.25	-2.55	-0.27	0.19	0.10	-26.60
875.00	0.40	258.00	874.99	0.23	-3.13	-0.25	0.17	0.00	-23.81
966.00	0.20	331.30	965.99	0.30	-3.52	-0.32	0.43	-0.22	80.55
1,057.00	0.40	236.50	1,056.99	0.27	-3.86	-0.29	0.51	0.22	-104.18
1,148.00	0.40	170.10	1,147.98	-0.22	-4.07	0.20	0.48	0.00	-72.97
1,239.00	0.40	158.70	1,238.98	-0.83	-3.90	0.81	0.09	0.00	-12.53
1,330.00	0.40	252.20	1,329.98	-1.22	-4.08	1.20	0.64	0.00	102.75
1,421.00	0.30	338.30	1,420.98	-1.10	-4.47	1.07	0.53	-0.11	94.62
1,513.00	0.20	239.00	1,512.98	-0.96	-4.70	0.93	0.42	-0.11	-107.93
1,604.00	0.30	218.10	1,603.98	-1.23	-4.98	1.20	0.15	0.11	-22.97
1,699.00	0.20	0.30	1,698.98	-1.26	-5.14	1.23	0.50	-0.11	149.68
1,795.00	0.20	151.50	1,794.98	-1.24	-5.06	1.21	0.40	0.00	157.50
1,889.00	0.40	0.50	1,888.98	-1.05	-4.97	1.02	0.62	0.21	-160.64
1,984.00	0.20	316.90	1,983.98	-0.60	-5.09	0.57	0.31	-0.21	-45.89
2,080.00	0.20	106.60	2,079.98	-0.52	-5.04	0.50	0.40	0.00	155.94
2,175.00	0.30	3.60	2,174.98	-0.32	-4.86	0.30	0.42	0.11	-108.42
2,269.00	0.50	27.40	2,268.97	0.29	-4.66	-0.31	0.27	0.21	25.32
2,365.00	1.80	33.30	2,364.95	1.92	-3.64	-1.94	1.36	1.35	6.15
2,459.00	2.80	36.00	2,458.87	5.01	-1.48	-5.02	1.07	1.06	2.87
2,555.00	3.80	31.40	2,554.71	9.62	1.56	-9.61	1.08	1.04	-4.79
2,650.00	4.90	26.80	2,649.44	15.93	5.03	-15.90	1.21	1.16	-4.84
2,745.00	5.50	21.20	2,744.05	23.80	8.50	-23.75	0.83	0.63	-5.89
2,840.00	5.40	19.80	2,838.62	32.25	11.66	-32.18	0.18	-0.11	-1.47
2,935.00	5.30	19.60	2,933.21	40.59	14.65	-40.50	0.11	-0.11	-0.21
3,030.00	4.90	18.90	3,027.83	48.56	17.43	-48.46	0.43	-0.42	-0.74
3,125.00	4.60	21.20	3,122.50	55.95	20.13	-55.84	0.37	-0.32	2.42
3,220.00	4.70	16.60	3,217.19	63.23	22.62	-63.10	0.41	0.11	-4.84
3,315.00	4.70	17.00	3,311.87	70.68	24.87	-70.54	0.03	0.00	0.42
3,411.00	4.50	16.10	3,407.56	78.06	27.06	-77.91	0.22	-0.21	-0.94
3,506.00	4.90	19.60	3,502.24	85.46	29.45	-85.30	0.52	0.42	3.68
3,602.00	4.70	20.70	3,597.91	93.01	32.22	-92.83	0.23	-0.21	1.15
3,697.00	4.60	28.60	3,692.59	99.99	35.42	-99.79	0.68	-0.11	8.32
3,792.00	5.00	36.80	3,787.26	106.65	39.72	-106.43	0.83	0.42	8.63
3,887.00	5.50	32.40	3,881.86	113.81	44.64	-113.56	0.68	0.53	-4.63
3,982.00	5.20	30.30	3,976.45	121.37	49.25	-121.09	0.38	-0.32	-2.21
4,078.00	4.80	26.10	4,072.08	128.73	53.22	-128.44	0.56	-0.42	-4.38
4,174.00	5.40	16.80	4,167.71	136.67	56.29	-136.35	1.06	0.63	-9.69
4,269.00	5.20	18.60	4,263.30	145.03	58.95	-144.69	0.27	-0.21	1.89
4,364.00	4.70	17.80	4,359.94	152.82	61.48	-152.48	0.54	-0.53	-1.37
4,460.00	4.90	18.70	4,452.61	160.46	63.97	-160.10	0.24	0.21	1.46
4,555.00	5.00	16.80	4,547.25	168.27	66.47	-167.89	0.20	0.11	-2.00
4,651.00	4.80	19.30	4,642.90	176.06	69.00	-175.67	0.30	-0.21	2.60
4,746.00	5.30	21.40	4,737.53	183.90	71.92	-183.49	0.56	0.53	2.21

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Tomb Raider 1-12 Fed Com
Well: Tomb Raider 1-12 Fed Com 334H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
MD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
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)
4,842.00	5.40	24.70	4,833.12	192.13	75.42	-191.71	0.34	0.10	3.44
4,938.00	4.90	22.40	4,928.73	200.03	78.87	-199.58	0.56	-0.52	-2.40
5,034.00	4.70	23.10	5,024.39	207.43	81.98	-206.97	0.22	-0.21	0.73
5,129.00	4.90	24.00	5,119.06	214.72	85.15	-214.24	0.22	0.21	0.95
5,224.00	5.50	23.50	5,213.67	222.60	88.62	-222.10	0.63	0.63	-0.53
5,320.00	5.50	26.50	5,309.23	230.94	92.51	-230.42	0.30	0.00	3.13
5,415.00	5.30	19.60	5,403.80	239.15	96.01	-238.61	0.71	-0.21	-7.26
5,511.00	5.60	14.50	5,499.37	247.86	98.67	-247.30	0.59	0.31	-5.31
5,605.00	5.50	14.30	5,592.93	256.66	100.93	-256.10	0.11	-0.11	-0.21
5,701.00	5.00	17.70	5,688.53	265.11	103.34	-264.53	0.61	-0.52	3.54
5,796.00	4.70	16.80	5,783.19	272.78	105.72	-272.18	0.33	-0.32	-0.95
5,892.00	4.60	17.00	5,878.87	280.22	107.99	-279.62	0.11	-0.10	0.21
5,986.00	4.10	20.70	5,972.60	286.97	110.28	-286.35	0.61	-0.53	3.94
6,082.00	3.90	18.00	6,068.37	293.29	112.50	-292.65	0.29	-0.21	-2.81
6,177.00	3.60	18.20	6,163.16	299.19	114.43	-298.55	0.32	-0.32	0.21
6,272.00	3.40	20.10	6,257.99	304.67	116.33	-304.02	0.24	-0.21	2.00
6,368.00	2.80	18.40	6,353.84	309.57	118.05	-308.91	0.63	-0.63	-1.77
6,463.00	1.80	18.40	6,448.77	313.19	119.25	-312.52	1.05	-1.05	0.00
6,559.00	1.50	9.60	6,544.73	315.86	119.93	-315.18	0.41	-0.31	-9.17
6,655.00	0.70	19.30	6,640.71	317.65	120.34	-316.97	0.85	-0.83	10.10
6,750.00	0.60	36.70	6,735.70	318.60	120.83	-317.92	0.23	-0.11	18.32
6,846.00	0.60	43.50	6,831.70	319.36	121.47	-318.68	0.07	0.00	7.08
6,941.00	0.70	18.00	6,926.69	320.28	122.00	-319.59	0.32	0.11	-26.84
7,037.00	0.60	5.70	7,022.69	321.33	122.23	-320.65	0.18	-0.10	-12.81
7,132.00	0.50	325.70	7,117.68	322.17	122.04	-321.49	0.41	-0.11	-42.11
7,227.00	0.40	267.10	7,212.68	322.50	121.48	-321.81	0.47	-0.11	-61.68
7,323.00	1.10	237.20	7,308.67	321.98	120.37	-321.30	0.81	0.73	-31.15
7,418.00	1.00	216.10	7,403.65	320.82	119.11	-320.15	0.42	-0.11	-22.21
7,514.00	1.00	233.50	7,499.64	319.64	117.95	-318.98	0.32	0.00	18.13
7,610.00	1.30	229.00	7,595.62	318.43	116.45	-317.77	0.33	0.31	-4.69
7,705.00	1.20	234.90	7,690.60	317.15	114.82	-316.50	0.17	-0.11	6.21
7,800.00	1.30	232.80	7,785.58	315.93	113.15	-315.29	0.12	0.11	-2.21
7,895.00	1.40	218.60	7,880.55	314.37	111.57	-313.74	0.37	0.11	-14.95
7,990.00	1.30	200.10	7,975.52	312.45	110.48	-311.83	0.47	-0.11	-19.47
8,085.00	0.70	181.70	8,070.51	310.86	110.09	-310.24	0.71	-0.63	-19.37
8,181.00	0.90	179.10	8,166.50	309.52	110.08	-308.90	0.21	0.21	-2.71
8,277.00	1.10	185.60	8,262.49	307.85	110.00	-307.23	0.24	0.21	6.77
8,372.00	0.60	172.00	8,357.47	306.45	109.98	-305.83	0.56	-0.53	-14.32
8,468.00	0.60	160.30	8,453.47	305.48	110.22	-304.86	0.13	0.00	-12.19
8,563.00	0.70	171.70	8,548.46	304.43	110.47	-303.81	0.17	0.11	12.00
8,658.00	0.40	186.60	8,643.46	303.53	110.52	-302.91	0.35	-0.32	15.68
8,754.00	0.60	167.80	8,739.46	302.71	110.59	-302.08	0.27	0.21	-19.58
8,850.00	1.00	159.50	8,835.45	301.43	110.99	-300.80	0.43	0.42	-8.65

LEAM Drilling Services

Survey Report

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Site: Tomb Raider 1-12 Fed Com
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Survey

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8,945.00	0.60	148.50	8,930.44	300.23	111.54	-299.60	0.45	-0.42	-11.58
9,040.00	0.40	129.70	9,025.43	299.59	112.05	-298.96	0.27	-0.21	-19.79
9,136.00	0.80	166.60	9,121.43	298.73	112.47	-298.09	0.56	0.42	38.44
9,231.00	1.00	168.00	9,216.42	297.27	112.79	-296.64	0.21	0.21	1.47
9,326.00	1.10	190.80	9,311.40	295.56	112.79	-294.93	0.45	0.11	24.00
9,421.00	0.70	215.30	9,406.39	294.19	112.29	-293.56	0.58	-0.42	25.79
9,516.00	0.50	269.20	9,501.38	293.72	111.54	-293.09	0.60	-0.21	56.74
9,611.00	0.40	306.30	9,596.38	293.91	110.86	-293.28	0.32	-0.11	39.05
9,707.00	0.30	4.70	9,692.38	294.35	110.61	-293.73	0.37	-0.10	60.83
9,802.00	0.30	339.90	9,787.38	294.84	110.54	-294.21	0.14	0.00	-26.11
9,897.00	0.20	297.40	9,882.38	295.15	110.31	-294.53	0.21	-0.11	-44.74
9,993.00	0.20	222.00	9,978.38	295.10	110.05	-294.48	0.25	0.00	-78.54
10,059.00	0.20	213.90	10,044.38	294.92	109.91	-294.30	0.04	0.00	-12.27
10,188.00	0.40	209.10	10,173.38	294.34	109.56	-293.72	0.16	0.16	-3.72
10,283.00	0.40	257.60	10,268.37	293.98	109.08	-293.36	0.35	0.00	51.05
10,378.00	0.60	345.50	10,363.37	294.39	108.63	-293.78	0.75	0.21	92.53
10,473.00	0.80	31.20	10,458.36	295.44	108.85	-294.82	0.60	0.21	48.11
10,569.00	0.40	18.90	10,554.36	296.33	109.30	-295.71	0.44	-0.42	-12.81
10,664.00	0.40	339.70	10,649.36	296.95	109.30	-296.34	0.28	0.00	-41.26
10,759.00	0.10	130.50	10,744.36	297.21	109.24	-296.59	0.52	-0.32	158.74
10,855.00	0.20	218.60	10,840.36	297.02	109.20	-296.41	0.23	0.10	91.77
10,950.00	0.50	185.00	10,935.35	296.48	109.06	-295.87	0.37	0.32	-35.37
10,988.00	0.60	181.50	10,973.35	296.12	109.04	-295.50	0.28	0.26	-9.21
11,052.00	2.40	171.70	11,037.33	294.45	109.23	-293.84	2.83	2.81	-15.31
11,147.00	17.20	177.80	11,130.68	278.36	110.06	-277.74	15.60	15.58	6.42
11,195.00	24.50	178.70	11,175.51	261.30	110.56	-260.67	15.22	15.21	1.88
11,243.00	30.10	179.60	11,218.15	239.29	110.87	-238.67	11.70	11.67	1.88
11,291.00	34.70	179.10	11,258.66	213.58	111.17	-212.96	9.60	9.58	-1.04
11,338.00	39.50	179.20	11,296.14	185.24	111.59	-184.62	10.21	10.21	0.21
11,386.00	43.50	179.60	11,332.08	153.44	111.91	-152.82	8.35	8.33	0.83
11,434.00	46.60	180.10	11,365.99	119.48	112.00	-118.85	6.50	6.46	1.04
11,482.00	50.20	180.50	11,397.85	83.59	111.81	-82.96	7.53	7.50	0.83
11,529.00	53.60	180.30	11,426.85	46.61	111.55	-45.99	7.24	7.23	-0.43
11,577.00	57.00	181.00	11,454.17	7.16	111.10	-6.54	7.18	7.08	1.46
11,625.00	59.90	181.30	11,479.28	-33.74	110.28	34.35	6.07	6.04	0.63
11,673.00	61.60	180.80	11,502.74	-75.61	109.51	76.22	3.66	3.54	-1.04
11,720.00	64.60	178.90	11,524.00	-117.51	109.63	118.12	7.33	6.38	-4.04
11,768.00	65.80	178.20	11,544.13	-161.07	110.73	161.69	2.83	2.50	-1.46
11,816.00	67.70	177.80	11,563.08	-205.14	112.27	205.77	4.03	3.96	-0.83
11,864.00	71.80	178.00	11,579.69	-250.14	113.92	250.77	8.55	8.54	0.42
11,911.00	76.60	178.90	11,592.48	-295.33	115.14	295.97	10.38	10.21	1.91
11,959.00	79.60	179.60	11,602.38	-342.29	115.75	342.93	6.41	6.25	1.46
12,024.00	83.40	179.90	11,611.99	-406.56	116.03	407.21	5.86	5.85	0.46
12,072.00	84.10	179.60	11,617.21	-454.28	116.24	454.92	1.59	1.46	-0.63

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Tomb Raider 1-12 Fed Com
Well: Tomb Raider 1-12 Fed Com 334H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
MD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
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)
12,119.00	86.20	178.90	11,621.19	-501.10	116.86	501.75	4.71	4.47	-1.49
12,167.00	88.40	178.20	11,623.45	-549.03	118.07	549.68	4.81	4.58	-1.46
12,215.00	89.60	178.00	11,624.28	-597.00	119.66	597.66	2.53	2.50	-0.42
12,311.00	90.20	178.00	11,624.45	-692.94	123.01	693.61	0.63	0.63	0.00
12,406.00	88.20	179.20	11,625.78	-787.89	125.33	788.58	2.46	-2.11	1.26
12,501.00	88.00	179.10	11,628.93	-882.83	126.74	883.52	0.24	-0.21	-0.11
12,596.00	87.70	178.70	11,632.49	-977.75	128.56	978.45	0.53	-0.32	-0.42
12,692.00	89.10	179.60	11,635.17	-1,073.69	129.99	1,074.40	1.73	1.46	0.94
12,788.00	90.20	179.90	11,635.76	-1,169.69	130.40	1,170.40	1.19	1.15	0.31
12,883.00	90.10	179.60	11,635.51	-1,264.69	130.82	1,265.40	0.33	-0.11	-0.32
12,979.00	91.50	179.10	11,634.17	-1,360.67	131.91	1,361.39	1.55	1.46	-0.52
13,075.00	91.60	178.70	11,631.57	-1,456.62	133.75	1,457.34	0.43	0.10	-0.42
13,170.00	91.30	179.60	11,629.17	-1,551.58	135.16	1,552.31	1.00	-0.32	0.95
13,266.00	90.80	179.80	11,627.41	-1,647.56	135.66	1,648.29	0.56	-0.52	0.21
13,361.00	88.60	179.60	11,627.91	-1,742.55	136.16	1,743.28	2.33	-2.32	-0.21
13,457.00	88.50	179.10	11,630.34	-1,838.51	137.25	1,839.25	0.53	-0.10	-0.52
13,552.00	88.40	178.00	11,632.91	-1,933.45	139.65	1,934.20	1.16	-0.11	-1.16
13,647.00	89.10	179.40	11,634.98	-2,028.40	141.81	2,029.16	1.65	0.74	1.47
13,742.00	90.00	179.40	11,635.72	-2,123.39	142.80	2,124.15	0.95	0.95	0.00
13,838.00	89.70	180.50	11,635.98	-2,219.38	142.88	2,220.15	1.19	-0.31	1.15
13,933.00	88.80	179.20	11,637.22	-2,314.37	143.13	2,315.14	1.66	-0.95	-1.37
14,027.00	89.30	179.60	11,638.78	-2,408.35	144.12	2,409.12	0.68	0.53	0.43
14,123.00	90.40	180.30	11,639.03	-2,504.35	144.20	2,505.12	1.36	1.15	0.73
14,219.00	91.60	181.00	11,637.35	-2,600.33	143.11	2,601.09	1.45	1.25	0.73
14,314.00	91.80	180.80	11,634.54	-2,695.28	141.62	2,696.02	0.30	0.21	-0.21
14,409.00	89.90	181.00	11,633.13	-2,790.25	140.13	2,790.99	2.01	-2.00	0.21
14,505.00	89.00	179.90	11,634.05	-2,886.24	139.37	2,886.97	1.48	-0.94	-1.15
14,600.00	89.80	179.80	11,635.04	-2,981.23	139.62	2,981.97	0.85	0.84	-0.11
14,696.00	89.00	178.90	11,636.05	-3,077.22	140.71	3,077.96	1.25	-0.83	-0.94
14,791.00	90.10	178.50	11,636.79	-3,172.19	142.87	3,172.94	1.23	1.16	-0.42
14,887.00	90.30	180.00	11,636.46	-3,268.18	144.12	3,268.93	1.58	0.21	1.56
14,982.00	89.80	179.80	11,636.38	-3,363.18	144.29	3,363.93	0.57	-0.53	-0.21
15,078.00	90.20	180.30	11,636.38	-3,459.18	144.21	3,459.93	0.67	0.42	0.52
15,173.00	90.00	179.80	11,636.21	-3,554.18	144.12	3,554.93	0.57	-0.21	-0.53
15,269.00	89.30	179.20	11,636.80	-3,650.17	144.96	3,650.92	0.96	-0.73	-0.63
15,364.00	89.70	180.60	11,637.63	-3,745.16	145.13	3,745.92	1.53	0.42	1.47
15,460.00	89.60	179.90	11,638.21	-3,841.16	144.71	3,841.91	0.74	-0.10	-0.73
15,555.00	89.30	179.80	11,639.12	-3,936.16	144.96	3,936.90	0.33	-0.32	-0.11
15,651.00	88.60	179.40	11,640.88	-4,032.14	145.63	4,032.89	0.84	-0.73	-0.42
15,746.00	89.30	179.20	11,642.62	-4,127.11	146.79	4,127.87	0.77	0.74	-0.21
15,842.00	90.40	179.80	11,642.88	-4,223.11	147.62	4,223.87	1.31	1.15	0.63
15,937.00	90.20	179.20	11,642.38	-4,318.10	148.45	4,318.86	0.67	-0.21	-0.63
16,031.00	91.20	179.90	11,641.23	-4,412.09	149.19	4,412.85	1.30	1.06	0.74

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Tomb Raider 1-12 Fed Com
Well: Tomb Raider 1-12 Fed Com 334H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 334H
TVD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
MD Reference: 3480.5' GE + 23.5' KB @ 3504.00usft
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)
16,127.00	90.40	181.00	11,639.89	-4,508.08	148.44	4,508.83	1.42	-0.83	1.15
16,221.00	90.70	180.60	11,638.99	-4,602.06	147.12	4,602.81	0.53	0.32	-0.43
16,317.00	91.30	179.60	11,637.31	-4,698.05	146.96	4,698.79	1.21	0.63	-1.04
16,412.00	91.50	179.20	11,634.99	-4,793.01	147.95	4,793.76	0.47	0.21	-0.42
16,508.00	91.00	177.50	11,632.90	-4,888.94	150.72	4,889.71	1.85	-0.52	-1.77
16,603.00	90.40	179.10	11,631.74	-4,983.89	153.53	4,984.67	1.80	-0.63	1.68
16,698.00	90.00	180.30	11,631.40	-5,078.89	154.03	5,079.67	1.33	-0.42	1.26
16,794.00	90.70	180.10	11,630.82	-5,174.89	153.70	5,175.66	0.76	0.73	-0.21
16,890.00	90.00	180.80	11,630.23	-5,270.88	152.94	5,271.65	1.03	-0.73	0.73
16,985.00	88.40	179.80	11,631.56	-5,365.86	152.44	5,366.63	1.99	-1.68	-1.05
17,080.00	89.30	179.20	11,633.46	-5,460.84	153.27	5,461.61	1.14	0.95	-0.63
17,176.00	89.30	178.50	11,634.64	-5,556.81	155.20	5,557.59	0.73	0.00	-0.73
17,271.00	89.70	178.40	11,635.47	-5,651.78	157.77	5,652.57	0.43	0.42	-0.11
17,366.00	90.50	179.10	11,635.30	-5,746.75	159.84	5,747.55	1.12	0.84	0.74
17,461.00	89.80	179.40	11,635.05	-5,841.74	161.08	5,842.55	0.80	-0.74	0.32
17,556.00	90.70	180.10	11,634.64	-5,936.74	161.50	5,937.55	1.20	0.95	0.74
17,651.00	91.90	181.50	11,632.48	-6,031.70	160.17	6,032.50	1.94	1.26	1.47
17,747.00	91.70	182.00	11,629.47	-6,127.61	157.24	6,128.39	0.56	-0.21	0.52
17,842.00	89.60	181.70	11,628.39	-6,222.55	154.18	6,223.31	2.23	-2.21	-0.32
17,937.00	89.70	182.20	11,628.97	-6,317.49	150.94	6,318.23	0.54	0.11	0.53
18,033.00	90.00	183.10	11,629.22	-6,413.39	146.51	6,414.10	0.99	0.31	0.94
18,129.00	89.70	181.90	11,629.47	-6,509.29	142.32	6,509.99	1.29	-0.31	-1.25
18,225.00	90.30	179.40	11,629.47	-6,605.28	141.23	6,605.96	2.68	0.63	-2.60
18,320.00	90.70	180.30	11,628.64	-6,700.27	141.48	6,700.96	1.04	0.42	0.95
18,416.00	89.50	179.40	11,628.47	-6,796.27	141.73	6,796.96	1.56	-1.25	-0.94
18,511.00	88.30	179.60	11,630.30	-6,891.25	142.56	6,891.94	1.28	-1.26	0.21
18,606.00	87.10	178.40	11,634.11	-6,986.15	144.21	6,986.85	1.79	-1.26	-1.26
18,701.00	87.60	178.70	11,638.50	-7,081.02	146.62	7,081.73	0.61	0.53	0.32
18,797.00	88.40	178.00	11,641.85	-7,176.92	149.38	7,177.64	1.11	0.83	-0.73
18,892.00	87.60	178.00	11,645.17	-7,271.80	152.69	7,272.54	0.84	-0.84	0.00
18,988.00	87.20	176.60	11,649.52	-7,367.60	157.21	7,368.36	1.52	-0.42	-1.46
19,083.00	88.40	177.70	11,653.17	-7,462.41	161.93	7,463.19	1.71	1.26	1.16
19,174.00	88.50	178.89	11,655.63	-7,553.33	164.64	7,554.13	1.31	0.11	1.31
19,270.00	88.50	178.53	11,658.15	-7,649.27	166.80	7,650.09	0.37	0.00	-0.38
19,365.00	89.00	178.70	11,660.22	-7,744.22	169.09	7,745.05	0.56	0.53	0.18
19,461.00	89.30	179.20	11,661.64	-7,840.20	170.85	7,841.03	0.61	0.31	0.52
19,556.00	89.80	177.70	11,662.39	-7,935.15	173.42	7,936.00	1.66	0.53	-1.58
19,652.00	90.70	180.80	11,661.97	-8,031.13	174.68	8,031.98	3.36	0.94	3.23
19,747.00	90.50	180.10	11,660.97	-8,126.12	173.93	8,126.97	0.77	-0.21	-0.74
19,842.00	90.60	180.50	11,660.06	-8,221.12	173.43	8,221.96	0.43	0.11	0.42
19,938.00	90.70	179.90	11,658.97	-8,317.11	173.10	8,317.95	0.63	0.10	-0.63
20,033.00	90.90	180.10	11,657.65	-8,412.10	173.10	8,412.94	0.30	0.21	0.21
20,129.00	90.30	180.60	11,656.64	-8,508.09	172.51	8,508.92	0.81	-0.63	0.52

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 1-12 Fed Com 334H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3480.5' GE + 23.5' KB @ 3504.00usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3480.5' GE + 23.5' KB @ 3504.00usft
Well:	Tomb Raider 1-12 Fed Com 334H	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)
20,225.00	90.00	179.90	11,656.39	-8,604.09	172.09	8,604.92	0.79	-0.31	-0.73
20,320.00	90.40	180.10	11,656.06	-8,699.09	172.09	8,699.92	0.47	0.42	0.21
20,415.00	90.70	179.80	11,655.15	-8,794.09	172.18	8,794.91	0.45	0.32	-0.32
20,510.00	91.20	179.90	11,653.57	-8,889.07	172.42	8,889.90	0.54	0.53	0.11
20,605.00	90.20	179.90	11,652.41	-8,984.06	172.59	8,984.89	1.05	-1.05	0.00
20,700.00	89.60	179.10	11,652.58	-9,079.06	173.42	9,079.89	1.05	-0.63	-0.84
20,796.00	88.50	178.70	11,654.17	-9,175.03	175.26	9,175.86	1.22	-1.15	-0.42
20,892.00	88.90	180.10	11,656.35	-9,270.99	176.27	9,271.83	1.52	0.42	1.46
20,986.00	89.10	179.40	11,657.99	-9,364.98	176.68	9,365.82	0.77	0.21	-0.74
21,082.00	89.30	179.20	11,659.33	-9,460.96	177.85	9,461.81	0.29	0.21	-0.21
21,177.00	89.10	179.10	11,660.65	-9,555.94	179.26	9,556.79	0.24	-0.21	-0.11
21,271.00	88.90	178.90	11,662.29	-9,649.91	180.90	9,650.77	0.30	-0.21	-0.21
21,366.00	90.60	179.10	11,662.71	-9,744.89	182.56	9,745.76	1.80	1.79	0.21
21,461.00	90.70	178.20	11,661.63	-9,839.86	184.79	9,840.74	0.95	0.11	-0.95
21,556.00	91.10	177.00	11,660.14	-9,934.76	188.77	9,935.66	1.33	0.42	-1.26
21,652.00	91.20	176.20	11,658.21	-10,030.57	194.46	10,031.50	0.84	0.10	-0.83
21,727.00	90.80	175.20	11,656.90	-10,105.35	200.09	10,106.31	1.44	-0.53	-1.33
21,781.00	90.80	175.20	11,656.15	-10,159.16	204.61	10,160.14	0.00	0.00	0.00
Projection									