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DISTRICT II-ARTESIA O.C.D.

January 8, 2019

Devon Energy Production Company, LP
Well: Tomb Raider 1-12 Fed Com 718H
County/Parish: Eddy County, NM

30-015-44811

LEAM MWD: (OH) from 0' MD – 12,035' MD

This Borehole Survey taken between 05/31/18 and 06/11/18 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: January 8, 2019



Survey Certification Form

State of New Mexico

Eddy County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Services, that I did on the day(s) of 05/31/2018 through 06/11/2018, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 12,035' 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 718H 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



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 718H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 718H
TVD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
MD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
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 718H		
Well Position	+N/-S	0.00 usft	Northing: 487,854.82 usft
	+E/-W	0.00 usft	Easting: 728,808.08 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 20' 23.0063 N
		Longitude:	103° 43' 34.7603 W
		Ground Level:	3,486.50 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	4/12/2018	6.93
			Dip Angle
			60.12
			Field Strength
			48,130

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			179.68

Survey Program	Date	1/8/2019		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
138.00	686.00	Survey #1 (OH)	MWD	MWD - Standard
781.00	12,035.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM
12,144.00	22,070.00	Survey #3 (OH)	MWD-ISCWSA	MWD - Standard
22,127.00	22,127.00	Survey #4 (OH)	Project	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
138.00	0.40	308.80	138.00	0.30	-0.38	-0.30	0.29	0.29	0.00
196.00	0.40	323.50	196.00	0.59	-0.65	-0.60	0.18	0.00	25.34
267.00	0.40	304.40	267.00	0.93	-1.01	-0.94	0.19	0.00	-26.90
327.00	0.50	318.60	326.99	1.25	-1.35	-1.25	0.25	0.17	23.67
419.00	0.40	296.50	418.99	1.69	-1.90	-1.70	0.22	-0.11	-24.02
510.00	0.60	310.90	509.99	2.14	-2.55	-2.16	0.26	0.22	15.82
601.00	0.50	304.70	600.98	2.68	-3.24	-2.70	0.13	-0.11	-6.81

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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)
686.00	0.60	313.70	685.98	3.20	-3.86	-3.22	0.16	0.12	10.59
781.00	0.50	312.80	780.98	3.83	-4.53	-3.85	0.11	-0.11	-0.95
872.00	0.50	291.40	871.97	4.24	-5.19	-4.27	0.20	0.00	-23.52
963.00	0.40	277.00	962.97	4.42	-5.87	-4.46	0.17	-0.11	-15.82
1,054.00	0.50	289.60	1,053.97	4.60	-6.56	-4.63	0.15	0.11	13.85
1,145.00	0.50	283.80	1,144.96	4.82	-7.32	-4.86	0.06	0.00	-6.37
1,236.00	0.40	286.80	1,235.96	5.01	-8.01	-5.05	0.11	-0.11	3.30
1,327.00	0.40	289.10	1,326.96	5.21	-8.61	-5.25	0.02	0.00	2.53
1,418.00	0.30	313.30	1,417.96	5.47	-9.09	-5.52	0.19	-0.11	26.59
1,510.00	0.20	352.50	1,509.96	5.80	-9.28	-5.85	0.21	-0.11	42.61
1,601.00	0.20	271.30	1,600.95	5.96	-9.46	-6.01	0.29	0.00	-89.23
1,696.00	0.30	279.40	1,695.95	6.00	-9.88	-6.06	0.11	0.11	8.53
1,792.00	0.20	283.80	1,791.95	6.08	-10.29	-6.14	0.11	-0.10	4.58
1,886.00	0.20	180.50	1,885.95	5.96	-10.45	-6.02	0.33	0.00	-109.89
1,982.00	0.10	162.00	1,981.95	5.71	-10.42	-5.77	0.11	-0.10	-19.27
2,077.00	0.40	189.40	2,076.95	5.31	-10.45	-5.36	0.33	0.32	28.84
2,172.00	0.30	198.60	2,171.95	4.74	-10.58	-4.80	0.12	-0.11	9.68
2,266.00	0.20	185.70	2,265.95	4.35	-10.68	-4.41	0.12	-0.11	-13.72
2,362.00	0.30	227.40	2,361.95	4.01	-10.88	-4.07	0.21	0.10	43.44
2,456.00	0.20	203.80	2,455.95	3.69	-11.13	-3.75	0.15	-0.11	-25.11
2,552.00	0.20	223.50	2,551.95	3.42	-11.31	-3.48	0.07	0.00	20.52
2,647.00	0.20	232.80	2,646.95	3.20	-11.56	-3.26	0.03	0.00	9.79
2,742.00	0.20	272.60	2,741.95	3.10	-11.85	-3.17	0.14	0.00	41.89
2,837.00	0.20	255.70	2,836.94	3.07	-12.18	-3.14	0.06	0.00	-17.79
2,932.00	0.20	336.90	2,931.94	3.18	-12.41	-3.25	0.27	0.00	85.47
3,027.00	0.30	355.50	3,026.94	3.58	-12.49	-3.65	0.13	0.11	19.58
3,122.00	0.30	351.00	3,121.94	4.08	-12.55	-4.15	0.02	0.00	-4.74
3,217.00	0.40	341.60	3,216.94	4.64	-12.69	-4.71	0.12	0.11	-9.89
3,312.00	0.30	348.70	3,311.94	5.20	-12.85	-5.27	0.11	-0.11	7.47
3,408.00	0.30	338.30	3,407.94	5.68	-12.99	-5.75	0.06	0.00	-10.83
3,504.00	0.70	42.30	3,503.93	6.34	-12.69	-6.41	0.66	0.42	66.67
3,599.00	1.50	58.10	3,598.92	7.43	-11.24	-7.49	0.89	0.84	16.63
3,694.00	2.40	76.20	3,693.86	8.56	-8.25	-8.61	1.14	0.95	19.05
3,789.00	3.50	81.70	3,788.73	9.45	-3.45	-9.47	1.19	1.16	5.79
3,885.00	4.20	78.50	3,884.52	10.58	2.89	-10.56	0.76	0.73	-3.33
3,979.00	5.00	73.60	3,978.21	12.42	10.20	-12.36	0.95	0.85	-5.21
4,075.00	6.00	72.40	4,073.77	15.12	18.99	-15.01	1.05	1.04	-1.25
4,171.00	5.80	72.40	4,169.26	18.10	28.40	-17.94	0.21	-0.21	0.00
4,266.00	5.30	74.10	4,263.82	20.76	37.19	-20.55	0.55	-0.53	1.79
4,361.00	5.50	67.60	4,358.40	23.69	45.62	-23.44	0.68	0.21	-6.84
4,457.00	6.50	62.20	4,453.87	27.98	54.68	-27.67	1.20	1.04	-5.63
4,552.00	6.10	61.10	4,548.30	32.93	63.86	-32.57	0.44	-0.42	-1.16
4,648.00	5.80	61.10	4,643.78	37.74	72.57	-37.33	0.31	-0.31	0.00

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4,743.00	5.30	61.10	4,738.33	42.18	80.61	-41.73	0.53	-0.53	0.00
4,839.00	5.70	52.10	4,833.89	47.25	88.26	-46.76	0.99	0.42	-9.38
4,935.00	6.90	66.40	4,929.32	52.49	97.30	-51.94	2.05	1.25	14.90
5,031.00	6.80	68.00	5,024.63	56.92	107.86	-56.32	0.22	-0.10	1.67
5,126.00	6.40	67.80	5,119.00	61.03	117.97	-60.37	0.42	-0.42	-0.21
5,221.00	6.00	67.80	5,213.45	64.91	127.47	-64.20	0.42	-0.42	0.00
5,317.00	5.60	67.10	5,308.95	68.63	136.43	-67.86	0.42	-0.42	-0.73
5,412.00	5.90	65.80	5,403.48	72.43	145.16	-71.62	0.34	0.32	-1.37
5,508.00	6.40	64.30	5,498.92	76.78	154.48	-75.91	0.55	0.52	-1.56
5,602.00	6.10	64.80	5,592.36	81.17	163.72	-80.26	0.32	-0.32	0.53
5,698.00	6.10	66.70	5,687.82	85.36	173.02	-84.40	0.21	0.00	1.98
5,793.00	6.50	66.60	5,782.25	89.49	182.59	-88.47	0.42	0.42	-0.11
5,889.00	6.30	66.70	5,877.65	93.74	192.41	-92.66	0.21	-0.21	0.10
5,983.00	6.70	64.80	5,971.04	98.11	202.11	-96.98	0.48	0.43	-2.02
6,079.00	6.70	64.60	6,066.39	102.90	212.24	-101.71	0.02	0.00	-0.21
6,174.00	6.00	66.30	6,160.81	107.27	221.79	-106.03	0.76	-0.74	1.79
6,269.00	6.40	62.50	6,255.25	111.71	231.03	-110.42	0.60	0.42	-4.00
6,365.00	7.00	62.70	6,350.59	116.86	240.98	-115.52	0.63	0.63	0.21
6,460.00	6.90	64.30	6,444.90	121.99	251.27	-120.59	0.23	-0.11	1.68
6,556.00	6.60	64.80	6,540.23	126.84	261.45	-125.38	0.32	-0.31	0.52
6,652.00	6.10	65.10	6,635.64	131.34	271.07	-129.82	0.52	-0.52	0.31
6,747.00	6.10	64.80	6,730.10	135.62	280.22	-134.05	0.03	0.00	-0.32
6,843.00	6.60	64.60	6,825.51	140.15	289.82	-138.53	0.52	0.52	-0.21
6,938.00	6.50	65.30	6,919.89	144.74	299.63	-143.07	0.13	-0.11	0.74
7,034.00	6.10	65.80	7,015.31	149.10	309.22	-147.37	0.42	-0.42	0.52
7,129.00	6.30	64.80	7,109.76	153.39	318.54	-151.61	0.24	0.21	-1.05
7,224.00	6.20	66.60	7,204.19	157.65	327.97	-155.81	0.23	-0.11	1.89
7,320.00	5.70	65.80	7,299.68	161.66	337.07	-159.78	0.53	-0.52	-0.83
7,415.00	5.70	66.70	7,394.21	165.46	345.71	-163.53	0.09	0.00	0.95
7,511.00	6.30	65.70	7,489.68	169.52	354.89	-167.53	0.63	0.63	-1.04
7,607.00	6.70	62.70	7,585.06	174.25	364.67	-172.21	0.55	0.42	-3.13
7,702.00	6.70	62.30	7,679.41	179.37	374.50	-177.27	0.05	0.00	-0.42
7,798.00	6.20	63.90	7,774.81	184.25	384.11	-182.10	0.55	-0.52	1.67
7,892.00	6.00	65.70	7,868.27	188.51	393.15	-186.31	0.29	-0.21	1.91
7,987.00	5.90	63.40	7,962.76	192.74	402.04	-190.49	0.27	-0.11	-2.42
8,082.00	6.30	61.30	8,057.22	197.43	410.98	-195.13	0.48	0.42	-2.21
8,178.00	6.00	62.70	8,152.67	202.26	420.05	-199.91	0.35	-0.31	1.46
8,273.00	5.80	63.40	8,247.17	206.68	428.76	-204.29	0.22	-0.21	0.74
8,368.00	6.20	65.80	8,357.56	211.65	439.24	-209.20	0.43	0.36	2.16
8,460.00	5.50	65.10	8,453.06	215.71	448.14	-213.21	0.73	-0.73	-0.73
8,575.00	5.50	60.60	8,547.62	219.87	456.24	-217.31	0.45	0.00	-4.74
8,671.00	5.10	57.40	8,643.21	224.42	463.84	-221.83	0.52	-0.42	-3.33
8,766.00	5.90	55.70	8,737.77	229.45	471.43	-226.81	0.86	0.84	-1.79
8,861.00	6.60	60.00	8,832.21	234.93	480.19	-232.25	0.89	0.74	4.53

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8,957.00	6.50	63.40	8,927.58	240.12	489.83	-237.38	0.42	-0.10	3.54
9,051.00	5.50	63.60	9,021.07	244.51	498.62	-241.72	1.06	-1.06	0.21
9,147.00	5.80	62.30	9,116.60	248.81	507.04	-245.97	0.34	0.31	-1.35
9,242.00	6.10	68.70	9,211.09	252.87	515.99	-249.99	0.77	0.32	6.74
9,337.00	6.20	62.90	9,305.54	257.04	525.26	-254.11	0.66	0.11	-6.11
9,432.00	6.80	60.60	9,399.93	262.14	534.73	-259.15	0.69	0.63	-2.42
9,528.00	6.40	57.80	9,495.30	267.78	544.21	-264.74	0.53	-0.42	-2.92
9,623.00	6.40	65.80	9,589.71	272.78	553.52	-269.68	0.94	0.00	8.42
9,719.00	5.70	62.90	9,685.17	277.14	562.64	-273.99	0.80	-0.73	-3.02
9,815.00	6.20	60.60	9,780.65	281.86	571.40	-278.66	0.58	0.52	-2.40
9,910.00	6.60	62.30	9,875.06	286.91	580.70	-283.67	0.47	0.42	1.79
10,006.00	6.20	62.20	9,970.46	291.90	590.17	-288.59	0.42	-0.42	-0.10
10,102.00	5.50	63.60	10,065.96	296.36	598.88	-293.01	0.74	-0.73	1.46
10,197.00	5.60	66.90	10,160.52	300.20	607.22	-296.81	0.35	0.11	3.47
10,292.00	5.80	66.60	10,255.05	303.93	615.89	-300.48	0.21	0.21	-0.32
10,387.00	4.20	72.90	10,349.68	306.86	623.62	-303.37	1.78	-1.68	6.63
10,483.00	2.90	79.70	10,445.50	308.32	629.37	-304.80	1.42	-1.35	7.08
10,578.00	1.90	93.80	10,540.42	308.65	633.31	-305.11	1.21	-1.05	14.84
10,674.00	1.00	158.30	10,636.39	307.77	635.21	-304.21	1.80	-0.94	67.19
10,769.00	1.20	171.10	10,731.37	306.01	635.67	-302.46	0.33	0.21	13.47
10,861.00	0.80	164.50	10,823.36	304.44	635.99	-300.89	0.45	-0.43	-7.17
10,956.00	0.70	186.40	10,918.35	303.23	636.10	-299.67	0.32	-0.11	23.05
11,051.00	1.00	197.70	11,013.34	301.86	635.78	-298.30	0.36	0.32	11.89
11,147.00	1.50	183.80	11,109.32	299.81	635.45	-296.25	0.61	0.52	-14.48
11,242.00	1.80	180.60	11,204.28	297.08	635.35	-293.52	0.33	0.32	-3.37
11,338.00	3.30	180.10	11,300.18	292.80	635.33	-289.25	1.56	1.56	-0.52
11,386.00	7.40	178.20	11,347.96	288.33	635.42	-284.78	8.55	8.54	-3.96
11,433.00	11.40	180.10	11,394.32	280.66	635.51	-277.10	8.54	8.51	4.04
11,528.00	20.70	178.90	11,485.52	254.42	635.81	-250.87	9.80	9.79	-1.26
11,624.00	30.80	182.00	11,571.87	212.79	635.28	-209.24	10.61	10.52	3.23
11,672.00	35.60	183.10	11,612.03	186.54	634.10	-183.00	10.08	10.00	2.29
11,719.00	40.40	181.70	11,649.05	157.64	632.90	-154.10	10.38	10.21	-2.98
11,767.00	45.30	180.50	11,684.24	125.01	632.29	-121.48	10.35	10.21	-2.50
11,815.00	50.50	180.50	11,716.40	89.41	631.98	-85.88	10.83	10.83	0.00
11,863.00	54.70	180.60	11,745.55	51.29	631.62	-47.76	8.75	8.75	0.21
11,911.00	58.60	180.30	11,771.94	11.20	631.30	-7.68	8.14	8.13	-0.63
11,959.00	63.30	180.30	11,795.24	-30.75	631.08	34.27	9.79	9.79	0.00
11,992.00	67.50	180.10	11,808.97	-60.74	630.98	64.27	12.74	12.73	-0.61
12,035.00	70.30	178.70	11,824.45	-100.85	631.40	104.38	7.19	6.51	-3.26
12,144.00	73.20	177.53	11,858.58	-204.30	634.82	207.84	2.85	2.66	-1.07
12,175.00	74.10	178.30	11,867.31	-234.03	635.90	237.58	3.76	2.90	2.48
12,205.00	73.90	178.46	11,875.58	-262.85	636.71	266.41	0.84	-0.67	0.53
12,236.00	73.76	177.80	11,884.21	-292.61	637.69	296.17	2.09	-0.45	-2.13

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 718H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 718H
 TVD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
 MD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
 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)
12,267.00	73.73	177.75	11,892.89	-322.35	638.84	325.91	0.18	-0.10	-0.16
12,299.00	75.94	176.99	11,901.26	-353.20	640.26	356.77	7.28	6.91	-2.38
12,330.00	81.35	179.02	11,907.36	-383.56	641.31	387.14	18.59	17.45	6.55
12,362.00	88.93	179.75	11,910.07	-415.42	641.65	419.00	23.80	23.69	2.28
12,393.00	91.41	180.00	11,909.98	-446.42	641.72	450.00	8.04	8.00	0.81
12,394.00	91.11	180.27	11,909.96	-447.42	641.72	451.00	40.36	-30.00	27.00
12,487.00	91.61	179.38	11,907.75	-540.39	642.00	543.97	1.10	0.54	-0.96
12,581.00	92.45	178.36	11,904.42	-634.31	643.85	637.90	1.41	0.89	-1.09
12,674.00	91.18	176.92	11,901.47	-727.18	647.68	730.79	2.06	-1.37	-1.55
12,767.00	89.93	175.83	11,900.57	-819.99	653.56	823.63	1.78	-1.34	-1.17
12,861.00	93.49	178.90	11,897.77	-913.82	657.88	917.48	5.00	3.79	3.27
12,955.00	93.39	180.11	11,892.13	-1,007.65	658.69	1,011.31	1.29	-0.11	1.29
13,050.00	92.89	179.81	11,886.92	-1,102.50	658.76	1,106.17	0.61	-0.53	-0.32
13,144.00	90.64	181.12	11,884.03	-1,196.45	658.00	1,200.10	2.77	-2.39	1.39
13,238.00	91.38	181.20	11,882.37	-1,290.41	656.09	1,294.06	0.79	0.79	0.09
13,332.00	89.63	181.52	11,881.54	-1,384.38	653.86	1,388.01	1.89	-1.86	0.34
13,427.00	90.61	184.78	11,881.34	-1,479.22	648.64	1,482.82	3.58	1.03	3.43
13,521.00	89.60	182.65	11,881.17	-1,573.02	642.55	1,576.58	2.51	-1.07	-2.27
13,615.00	88.82	178.91	11,882.47	-1,666.98	641.27	1,670.54	4.06	-0.83	-3.98
13,709.00	89.56	178.05	11,883.80	-1,760.94	643.77	1,764.51	1.21	0.79	-0.91
13,803.00	86.47	176.94	11,887.05	-1,854.78	647.87	1,858.37	3.49	-3.29	-1.18
13,897.00	87.58	176.49	11,891.93	-1,948.50	653.25	1,952.11	1.27	1.18	-0.48
13,991.00	90.84	175.93	11,893.23	-2,042.27	659.46	2,045.92	3.52	3.47	-0.60
14,085.00	93.43	176.95	11,889.72	-2,136.01	665.30	2,139.70	2.96	2.76	1.09
14,180.00	94.54	177.76	11,883.12	-2,230.68	669.67	2,234.39	1.45	1.17	0.85
14,274.00	93.93	179.57	11,876.18	-2,324.39	671.85	2,328.11	2.03	-0.65	1.93
14,368.00	91.71	181.05	11,871.56	-2,418.27	671.34	2,421.98	2.84	-2.36	1.57
14,463.00	89.03	180.24	11,870.94	-2,513.25	670.27	2,516.96	2.95	-2.82	-0.85
14,557.00	89.63	180.19	11,872.04	-2,607.25	669.92	2,610.95	0.64	0.64	-0.05
14,651.00	91.44	180.73	11,871.16	-2,701.23	669.17	2,704.93	2.01	1.93	0.57
14,746.00	87.31	180.83	11,872.20	-2,796.20	667.87	2,799.89	4.35	-4.35	0.11
14,840.00	91.01	179.11	11,873.58	-2,890.17	667.92	2,893.85	4.34	3.94	-1.83
14,935.00	90.61	179.92	11,872.23	-2,985.16	668.73	2,988.84	0.95	-0.42	0.85
15,029.00	86.24	178.32	11,874.82	-3,079.08	670.17	3,082.78	4.95	-4.65	-1.70
15,123.00	88.15	178.76	11,879.42	-3,172.94	672.56	3,176.64	2.09	2.03	0.47
15,217.00	88.99	178.13	11,881.76	-3,266.87	675.11	3,270.59	1.12	0.89	-0.67
15,311.00	92.96	178.42	11,880.16	-3,360.79	677.94	3,364.53	4.23	4.22	0.31
15,405.00	91.58	181.53	11,876.44	-3,454.71	677.98	3,458.44	3.62	-1.47	3.31
15,500.00	93.76	182.16	11,872.02	-3,549.55	674.93	3,553.26	2.39	2.29	0.66
15,594.00	90.20	181.58	11,868.77	-3,643.43	671.86	3,647.12	3.84	-3.79	-0.62
15,688.00	91.01	181.70	11,867.78	-3,737.38	669.17	3,741.06	0.87	0.86	0.13
15,782.00	89.26	182.90	11,867.55	-3,831.30	665.40	3,834.96	2.26	-1.86	1.28
15,876.00	88.02	181.64	11,869.78	-3,925.20	661.68	3,928.83	1.88	-1.32	-1.34

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 718H
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 718H
 TVD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
 MD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
 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)
15,971.00	93.66	183.47	11,868.39	-4,020.05	657.45	4,023.66	6.24	5.94	1.93
16,065.00	89.70	181.74	11,865.64	-4,113.89	653.18	4,117.47	4.60	-4.21	-1.84
16,159.00	88.02	181.34	11,867.51	-4,207.83	650.65	4,211.40	1.84	-1.79	-0.43
16,253.00	87.72	179.52	11,871.00	-4,301.76	649.95	4,305.33	1.96	-0.32	-1.94
16,347.00	86.88	177.93	11,875.43	-4,395.63	652.04	4,399.20	1.91	-0.89	-1.69
16,441.00	88.15	179.20	11,879.51	-4,489.51	654.39	4,493.09	1.91	1.35	1.35
16,535.00	86.91	176.43	11,883.56	-4,583.34	657.97	4,586.95	3.23	-1.32	-2.95
16,629.00	89.26	177.17	11,886.70	-4,677.14	663.21	4,680.77	2.62	2.50	0.79
16,723.00	84.36	173.79	11,891.93	-4,770.66	670.60	4,774.33	6.33	-5.21	-3.60
16,817.00	85.30	173.56	11,900.40	-4,863.70	680.91	4,867.43	1.03	1.00	-0.24
16,911.00	88.56	173.74	11,905.43	-4,956.98	691.29	4,960.76	3.47	3.47	0.19
17,005.00	90.30	171.23	11,906.37	-5,050.16	703.58	5,054.01	3.25	1.85	-2.67
17,100.00	93.46	170.96	11,903.25	-5,143.95	718.28	5,147.88	3.34	3.33	-0.28
17,194.00	93.93	173.51	11,897.19	-5,236.89	730.95	5,240.89	2.75	0.50	2.71
17,288.00	91.04	177.82	11,893.12	-5,330.50	738.04	5,334.54	5.52	-3.07	4.59
17,382.00	94.37	182.69	11,888.68	-5,424.35	737.63	5,428.39	6.27	3.54	5.18
17,477.00	91.78	183.47	11,883.58	-5,519.07	732.53	5,523.07	2.85	-2.73	0.82
17,572.00	94.63	185.35	11,878.27	-5,613.62	725.24	5,617.59	3.59	3.00	1.98
17,665.00	88.69	184.78	11,875.58	-5,706.18	717.04	5,710.10	6.42	-6.39	-0.61
17,759.00	88.39	184.13	11,877.97	-5,799.87	709.74	5,803.74	0.76	-0.32	-0.69
17,864.00	88.79	183.74	11,880.56	-5,904.59	702.54	5,908.42	0.53	0.38	-0.37
17,959.00	90.54	183.97	11,881.11	-5,999.37	696.15	6,003.16	1.86	1.84	0.24
18,054.00	87.85	180.77	11,882.45	-6,094.25	692.22	6,098.03	4.40	-2.83	-3.37
18,148.00	89.90	182.63	11,884.29	-6,188.19	689.43	6,191.94	2.94	2.18	1.98
18,242.00	88.22	181.33	11,885.83	-6,282.11	686.19	6,285.85	2.26	-1.79	-1.38
18,336.00	87.08	179.94	11,889.69	-6,376.02	685.15	6,379.75	1.91	-1.21	-1.48
18,430.00	86.47	177.87	11,894.98	-6,469.85	686.94	6,473.59	2.29	-0.65	-2.20
18,524.00	90.20	177.99	11,897.71	-6,563.73	690.33	6,567.49	3.97	3.97	0.13
18,618.00	91.35	179.82	11,896.44	-6,657.70	692.13	6,661.46	2.30	1.22	1.95
18,713.00	93.46	178.44	11,892.45	-6,752.60	693.57	6,756.37	2.65	2.22	-1.45
18,807.00	95.45	180.98	11,885.15	-6,846.30	694.05	6,850.07	3.43	2.12	2.70
18,902.00	95.98	180.73	11,875.69	-6,940.82	692.63	6,944.58	0.62	0.56	-0.26
18,997.00	93.12	181.32	11,868.15	-7,035.49	690.94	7,039.24	3.07	-3.01	0.62
19,091.00	88.28	181.64	11,867.00	-7,129.43	688.51	7,133.16	5.16	-5.15	0.34
19,185.00	88.96	180.58	11,869.27	-7,223.38	686.69	7,227.10	1.34	0.72	-1.13
19,279.00	88.92	181.00	11,871.01	-7,317.36	685.40	7,321.07	0.45	-0.04	0.45
19,373.00	87.11	180.21	11,874.26	-7,411.29	684.40	7,415.00	2.10	-1.93	-0.84
19,467.00	88.42	179.41	11,877.93	-7,505.21	684.72	7,508.92	1.63	1.39	-0.85
19,561.00	90.67	181.25	11,878.68	-7,599.20	684.17	7,602.90	3.09	2.39	1.96
19,655.00	87.79	180.37	11,879.94	-7,693.17	682.85	7,696.87	3.20	-3.06	-0.94
19,749.00	87.76	182.90	11,883.59	-7,787.05	680.17	7,790.73	2.69	-0.03	2.69
19,843.00	86.78	183.00	11,888.07	-7,880.82	675.33	7,884.47	1.05	-1.04	0.11
19,939.00	85.97	180.88	11,894.14	-7,976.57	672.09	7,980.20	2.36	-0.84	-2.21
20,034.00	85.87	179.88	11,900.90	-8,071.32	671.46	8,074.95	1.06	-0.11	-1.05

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 718H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Tomb Raider 1-12 Fed Com 718H
TVD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
MD Reference: 3486.5' GE + 23.5' KB @ 3510.00usft
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)
20,128.00	87.78	179.97	11,906.10	-8,165.18	671.58	8,168.80	2.03	2.03	0.10
20,222.00	88.79	179.58	11,908.91	-8,259.13	671.95	8,262.76	1.15	1.07	-0.41
20,317.00	87.88	179.01	11,911.67	-8,354.08	673.12	8,357.71	1.13	-0.96	-0.60
20,411.00	89.60	178.97	11,913.74	-8,448.04	674.78	8,451.68	1.83	1.83	-0.04
20,505.00	90.64	177.58	11,913.54	-8,542.00	677.61	8,545.65	1.85	1.11	-1.48
20,600.00	89.06	176.82	11,913.79	-8,636.88	682.25	8,640.55	1.85	-1.66	-0.80
20,695.00	89.36	176.30	11,915.10	-8,731.70	687.95	8,735.40	0.63	0.32	-0.55
20,789.00	90.44	177.69	11,915.27	-8,825.56	692.88	8,829.30	1.87	1.15	1.48
20,883.00	91.27	177.95	11,913.86	-8,919.49	696.45	8,923.24	0.93	0.88	0.28
20,978.00	92.62	179.93	11,910.64	-9,014.41	698.21	9,018.17	2.52	1.42	2.08
21,072.00	90.67	181.47	11,907.94	-9,108.35	697.06	9,112.11	2.64	-2.07	1.64
21,166.00	88.63	182.43	11,908.52	-9,202.29	693.86	9,206.02	2.40	-2.17	1.02
21,261.00	87.82	182.33	11,911.46	-9,297.16	689.92	9,300.87	0.86	-0.85	-0.11
21,355.00	85.87	182.22	11,916.63	-9,390.94	686.19	9,394.63	2.08	-2.07	-0.12
21,449.00	86.14	180.88	11,923.18	-9,484.68	683.66	9,488.35	1.45	0.29	-1.43
21,543.00	89.66	179.84	11,926.63	-9,578.60	683.07	9,582.26	3.90	3.74	-1.11
21,638.00	89.36	179.77	11,927.44	-9,673.59	683.39	9,677.26	0.32	-0.32	-0.07
21,732.00	88.76	178.63	11,928.98	-9,767.57	684.70	9,771.24	1.37	-0.64	-1.21
21,826.00	90.00	178.23	11,930.00	-9,861.53	687.28	9,865.21	1.39	1.32	-0.43
21,920.00	90.74	178.60	11,929.39	-9,955.49	689.88	9,959.19	0.88	0.79	0.39
22,015.00	91.85	179.91	11,927.24	-10,050.45	691.11	10,054.15	1.81	1.17	1.38
22,070.00	92.18	180.19	11,925.31	-10,105.42	691.06	10,109.12	0.79	0.60	0.51
22,127.00	92.18	180.19	11,923.14	-10,162.38	690.88	10,166.08	0.00	0.00	0.00
Projection									