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FEB 03 2020

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (505) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-102
Revised August 1, 2011
One copy to appropriate
District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45486	² Pool Code 39350	³ Pool Name Livingston Ridge; Bone Spring
⁴ Property Code 322807	⁵ Property Name TOMB RAIDER 12-1 FED	⁶ Well Number 516H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3502.3

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
O	12	23 S	31 E		50	SOUTH	1420	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	36	22 S	31 E		27	SOUTH	1179	EAST	EDDY

¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NW CORNER SEC. 36 LAT. = 32.3552397°N LONG. = 103.7400617°W NMSP EAST (FT) N = 493475.63 E = 724533.44 W/4 CORNER SEC. 36 LAT. = 32.3479770°N LONG. = 103.7400589°W NMSP EAST (FT) N = 490833.46 E = 724548.94 NW CORNER SEC. 1 LAT. = 32.3407245°N LONG. = 103.7400566°W NMSP EAST (FT) N = 488195.03 E = 724564.59 W/4 CORNER SEC. 1 LAT. = 32.3334649°N LONG. = 103.7400345°W NMSP EAST (FT) N = 485554.08 E = 724585.72 NW CORNER SEC. 12 LAT. = 32.3262057°N LONG. = 103.7400123°W NMSP EAST (FT) N = 482913.26 E = 724607.20 W/4 CORNER SEC. 12 LAT. = 32.3189531°N LONG. = 103.7400200°W NMSP EAST (FT) N = 480274.75 E = 724619.44 SW CORNER SEC. 12 LAT. = 32.3116999°N LONG. = 103.7400280°W NMSP EAST (FT) N = 477636.10 E = 724631.57		NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD83. AS-DRILLED BOTTOM OF HOLE LAT. = 32.3407875°N LONG. = 103.7267720°W NMSP EAST (FT) N = 488240.95 E = 728667.02 N/4 CORNER SEC. 1 LAT. = 32.3407180°N LONG. = 103.7315040°W NMSP EAST (FT) N = 488207.42 E = 727005.71 S/4 CORNER SEC. 1 LAT. = 32.3262026°N LONG. = 103.7314852°W NMSP EAST (FT) N = 480226.80 E = 727041.16 TOMB RAIDER 12-1 FED 516H ELEV. = 3502.3' LAT. = 32.3118333°N (NAD83) LONG. = 103.7275550°W NMSP EAST (FT) N = 477706.24 E = 728484.73 S/4 CORNER SEC. 12 LAT. = 32.3116989°N LONG. = 103.7314958°W NMSP EAST (FT) N = 477650.42 E = 727267.52		NE CORNER SEC. 36 LAT. = 32.3551764°N LONG. = 103.7229288°W NMSP EAST (FT) N = 493482.33 E = 729824.11 E/4 CORNER SEC. 36 LAT. = 32.3479616°N LONG. = 103.7229568°W NMSP EAST (FT) N = 490857.56 E = 729830.67 AS-DRILLED LAST TAKE POINT 110° FNL, 1182° FEL LAT. = 32.3404117°N LONG. = 103.7257803°W NMSP EAST (FT) N = 488104.22 E = 728665.20 NE CORNER SEC. 1 LAT. = 32.3407105°N LONG. = 103.7229557°W NMSP EAST (FT) N = 488219.63 E = 729845.81 E/4 CORNER SEC. 1 LAT. = 32.3334554°N LONG. = 103.7229555°W NMSP EAST (FT) N = 485580.24 E = 729860.91 NE CORNER SEC. 12 LAT. = 32.3262014°N LONG. = 103.7229554°W NMSP EAST (FT) N = 482941.27 E = 729875.98 E/4 CORNER SEC. 12 LAT. = 32.3189486°N LONG. = 103.7229555°W NMSP EAST (FT) N = 480302.72 E = 729890.06 SE CORNER SEC. 12 LAT. = 32.3116930°N LONG. = 103.7229595°W NMSP EAST (FT) N = 477663.17 E = 729904.77 AS-DRILLED FIRST TAKE POINT 679° FSL, 1175° FEL LAT. = 32.3135629°N LONG. = 103.7267624°W NMSP EAST (FT) N = 478336.78 E = 728726.05		¹⁷ 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. <i>Jenny Harms</i> 9-11-2019 Signature Date Jenny Harms Printed Name Jenny.harms@dmv.com E-mail Address ¹⁸ 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. AUGUST 21, 2019 Date of Survey <i>William F. Jaramillo</i> Signature Certificate Number 12729 NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 216A
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RUP 3-12-20

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FEB 03 2020

EMNRD-OCD ARTESIA

Intent ☐ As Drilled ☒

API #

30-015-45486

Operator Name:

DEVON ENERGY PRODUCTION CO., L.P.

Property Name:

TOMB RAIDER 12-1 FED

Well Number

516H

Kick Off Point (KOP)

UL P	Section 12	Township 23S	Range 31E	Lot	Feet 240	From N/S SOUTH	Feet 1163	From E/W EAST	County EDDY
Latitude 32.3123546					Longitude 103.7267230			NAD 83	

First Take Point (FTP)

UL P	Section 12	Township 23S	Range 31E	Lot	Feet 679	From N/S SOUTH	Feet 1175	From E/W EAST	County EDDY
Latitude 32.3135629					Longitude 103.7267624			NAD 83	

Last Take Point (LTP)

UL	Section 1	Township 23S	Range 31E	Lot 1	Feet 110	From N/S NORTH	Feet 1182	From E/W EAST	County EDDY
Latitude 32.3404117					Longitude 103.7267803			NAD 83	

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

no

Is this well an infill well?

yes

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



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SEP 12 2019

DISTRICT//ARTESIAO.C.D.

February 19, 2019

Devon Energy Production Company, LP
Well: Tomb Raider 12-1 Fed 516H
County/Parish: Eddy County, NM

LEAM MWD: (OH) from 0' MD – 6,144' MD
Projection: 6,216' MD

This Borehole Survey taken between 01/26/19 and 01/27/19 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: February 19, 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 01/26/2019 through 01/27/2019, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 6,216' 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 12-1 Fed 516H (OH) 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 Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed.Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM 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	Latitude:	32° 20' 23.0068 N
From:	Map	Easting:	728,777.94 usft	Longitude:	103° 43' 35.1116 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well	Tomb Raider 12-1 Fed 516H					
Well Position	+N/-S	0.00 usft	Northing:	477,706.24 usft	Latitude:	32° 18' 42.6006 N
	+E/-W	0.00 usft	Easting:	728,484.73 usft	Longitude:	103° 43' 39.1980 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,502.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/18/2018	6.83	60.05	48,030.80000000

Design		OH	
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)
	0.00	0.00	Direction (°) 359.69

Survey Program		Date 2/27/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
109.00	6,144.00	Survey #1 - MWD (OH)	LEAM MWD+HDGM	MWD+HDGM
6,216.00	6,216.00	Projection (OH)	Project	Projection

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
109.00	0.40	316.40	109.00	0.28	-0.26	0.28	0.37	0.37	0.00
241.00	0.40	309.90	241.00	0.90	-0.93	0.91	0.03	0.00	-4.92
332.00	1.00	325.20	331.99	1.76	-1.63	1.77	0.68	0.66	16.81
424.00	0.90	333.80	423.98	3.07	-2.41	3.08	0.19	-0.11	9.35
514.00	0.90	337.50	513.97	4.36	-2.99	4.37	0.06	0.00	4.11
606.00	1.00	357.00	605.95	5.82	-3.31	5.84	0.37	0.11	21.20
697.00	0.90	345.80	696.94	7.31	-3.53	7.33	0.23	-0.11	-12.31
789.00	1.00	345.40	788.93	8.79	-3.91	8.81	0.11	0.11	-0.43
842.00	1.10	342.30	841.92	9.72	-4.18	9.74	0.22	0.19	-5.85

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM 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)	
973.00	1.41	346.12	972.89	12.48	-4.95	12.51	0.24	0.24	2.92	
1,064.00	1.32	7.21	1,063.86	14.61	-5.08	14.64	0.56	-0.10	23.18	
1,156.00	1.14	8.80	1,155.84	16.57	-4.81	16.59	0.20	-0.20	1.73	
1,248.00	0.70	17.41	1,247.83	18.01	-4.50	18.03	0.50	-0.48	9.36	
1,340.00	0.79	1.94	1,339.82	19.18	-4.31	19.20	0.24	0.10	-16.82	
1,430.00	0.79	1.24	1,429.81	20.42	-4.28	20.44	0.01	0.00	-0.78	
1,523.00	0.53	19.17	1,522.81	21.46	-4.12	21.49	0.35	-0.28	19.28	
1,616.00	0.40	20.22	1,615.80	22.17	-3.87	22.20	0.14	-0.14	1.13	
1,706.00	0.35	348.76	1,705.80	22.74	-3.81	22.76	0.23	-0.06	-34.96	
1,799.00	0.18	37.45	1,798.80	23.13	-3.78	23.15	0.29	-0.18	52.35	
1,894.00	0.26	324.10	1,893.80	23.43	-3.82	23.45	0.28	0.08	-77.21	
1,989.00	0.09	308.15	1,988.80	23.65	-4.00	23.67	0.18	-0.18	-16.79	
2,084.00	0.26	3.52	2,083.80	23.91	-4.05	23.93	0.23	0.18	58.28	
2,176.00	0.18	287.94	2,175.80	24.16	-4.17	24.18	0.30	-0.09	-82.15	
2,272.00	0.18	198.81	2,271.80	24.06	-4.36	24.09	0.26	0.00	-92.84	
2,366.00	0.26	53.80	2,365.80	24.05	-4.24	24.07	0.45	0.09	-154.27	
2,459.00	0.35	71.02	2,458.80	24.27	-3.80	24.29	0.14	0.10	-18.52	
2,553.00	0.53	60.83	2,552.79	24.57	-3.15	24.59	0.21	0.19	-10.84	
2,648.00	0.44	77.53	2,647.79	24.87	-2.41	24.88	0.18	-0.09	17.58	
2,742.00	0.70	54.15	2,741.79	25.28	-1.59	25.29	0.37	0.28	-24.87	
2,837.00	0.70	56.78	2,836.78	25.94	-0.64	25.94	0.03	0.00	2.77	
2,932.00	1.06	77.88	2,931.77	26.44	0.71	26.44	0.50	0.38	22.21	
3,025.00	1.58	86.31	3,024.74	26.70	2.83	26.69	0.60	0.56	9.06	
3,119.00	2.20	84.21	3,118.69	26.97	5.92	26.94	0.66	0.66	-2.23	
3,214.00	3.08	88.07	3,213.59	27.24	10.28	27.18	0.94	0.93	4.06	
3,309.00	3.08	91.76	3,308.45	27.25	15.38	27.16	0.21	0.00	3.88	
3,404.00	3.08	93.17	3,403.31	27.03	20.48	26.92	0.08	0.00	1.48	
3,499.00	2.99	93.35	3,498.18	26.74	25.51	26.60	0.10	-0.09	0.19	
3,593.00	3.08	90.01	3,592.05	26.60	30.48	26.43	0.21	0.10	-3.55	
3,687.00	3.61	88.07	3,685.89	26.70	35.96	26.50	0.58	0.56	-2.06	
3,781.00	3.96	104.24	3,779.69	26.00	42.07	25.77	1.19	0.37	17.20	
3,876.00	4.04	106.00	3,874.46	24.27	48.46	24.01	0.15	0.08	1.85	
3,971.00	3.78	110.40	3,969.23	22.25	54.61	21.96	0.42	-0.27	4.63	
4,066.00	4.22	109.34	4,064.00	20.01	60.85	19.68	0.47	0.46	-1.12	
4,163.00	4.40	107.23	4,160.73	17.72	67.77	17.35	0.25	0.19	-2.18	
4,257.00	4.75	114.09	4,254.43	15.06	74.77	14.66	0.69	0.37	7.30	
4,350.00	4.04	104.24	4,347.16	12.69	81.46	12.25	1.11	-0.76	-10.59	
4,444.00	3.96	93.35	4,440.93	11.68	87.91	11.21	0.81	-0.09	-11.59	
4,538.00	3.69	91.41	4,534.72	11.42	94.17	10.91	0.32	-0.29	-2.06	
4,633.00	4.04	90.01	4,629.50	11.34	100.57	10.80	0.38	0.37	-1.47	
4,727.00	5.36	89.30	4,723.19	11.40	108.28	10.81	1.41	1.40	-0.76	
4,822.00	5.63	90.18	4,817.75	11.44	117.37	10.80	0.30	0.28	0.93	
4,917.00	5.28	91.41	4,912.32	11.31	126.40	10.63	0.39	-0.37	1.29	

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	LEAM 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)	
5,012.00	5.01	89.83	5,006.94	11.22	134.92	10.49	0.32	-0.28	-1.66	
5,106.00	4.75	89.65	5,100.60	11.25	142.92	10.48	0.28	-0.28	-0.19	
5,201.00	5.10	96.86	5,195.25	10.77	151.04	9.96	0.75	0.37	7.59	
5,295.00	5.28	101.78	5,288.86	9.39	159.42	8.53	0.51	0.19	5.23	
5,390.00	4.75	103.01	5,383.50	7.61	167.54	6.71	0.57	-0.56	1.29	
5,484.00	4.31	101.96	5,477.20	6.01	174.78	5.06	0.48	-0.47	-1.12	
5,578.00	4.13	103.72	5,570.95	4.47	181.53	3.49	0.24	-0.19	1.87	
5,672.00	3.52	102.66	5,664.74	3.04	187.63	2.02	0.65	-0.65	-1.13	
5,767.00	3.43	103.54	5,759.56	1.73	193.24	0.69	0.11	-0.09	0.93	
5,862.00	3.17	104.77	5,854.41	0.40	198.54	-0.68	0.28	-0.27	1.29	
5,957.00	2.81	102.84	5,949.28	-0.79	203.35	-1.89	0.39	-0.38	-2.03	
6,050.00	2.55	104.95	6,042.17	-1.83	207.57	-2.95	0.30	-0.28	2.27	
6,144.00	2.29	108.11	6,136.09	-2.95	211.38	-4.10	0.31	-0.28	3.36	
6,216.00	2.29	108.11	6,208.03	-3.85	214.11	-5.01	0.00	0.00	0.00	
Projection										



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SEP 12 2019

DISTRICT 7 / ARTESIA O.C.D.

February 19, 2019

Devon Energy Production Company, LP
Well: Tomb Raider 12-1 Fed 516H
County/Parish: Eddy County, NM

LEAM MWD: (ST01) from 4,964' MD – 19,055' MD
Projection: 19,116' MD

This Borehole Survey taken between 02/02/19 and 02/18/19 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: February 19, 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 02/02/2019 through 02/18/2019, conduct or supervise the taking of MWD Survey from a depth of 4,964' MD to 19,116' 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 12-1 Fed 516H (ST01) 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 Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	LEAM 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	Latitude:	32° 20' 23.0068 N
From:	Map	Easting:	728,777.94 usft	Longitude:	103° 43' 35.1116 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well		Tomb Raider 12-1 Fed 516H				
Well Position	+N/-S	0.00 usft	Northing:	477,706.24 usft	Latitude:	32° 18' 42.6006 N
	+E/-W	0.00 usft	Easting:	728,484.73 usft	Longitude:	103° 43' 39.1980 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,502.30 usft	

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/31/2018	6.85	60.07	48,020.60000000

Design		ST01			
Audit Notes:					
Version:		1.0		Phase: ACTUAL	
				Tie On Depth: 4,822.00	
Vertical Section:		Depth From (TVD) (usft)		+N/-S (usft)	
		0.00		0.00	
				+E/-W (usft)	
				Direction (°)	
				0.00 359.69	

Survey Program		Date 2/22/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
109.00	4,822.00	Survey #1 - MWD (OH)	LEAM MWD+HDGM	MWD+HDGM
4,964.00	19,055.00	Survey #1 - MWD (ST01)	LEAM MWD+HDGM	MWD+HDGM
19,116.00	19,116.00	Projection (ST01)	Project	Projection

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
109.00	0.40	316.40	109.00	0.28	-0.26	0.28	0.37	0.37	0.00
241.00	0.40	309.90	241.00	0.90	-0.93	0.91	0.03	0.00	-4.92
332.00	1.00	325.20	331.99	1.76	-1.63	1.77	0.68	0.66	16.81
424.00	0.90	333.80	423.98	3.07	-2.41	3.08	0.19	-0.11	9.35
514.00	0.90	337.50	513.97	4.36	-2.99	4.37	0.06	0.00	4.11
606.00	1.00	357.00	605.95	5.82	-3.31	5.84	0.37	0.11	21.20
697.00	0.90	345.80	696.94	7.31	-3.53	7.33	0.23	-0.11	-12.31
789.00	1.00	345.40	788.93	8.79	-3.91	8.81	0.11	0.11	-0.43

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 12-1 Fed Corn	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	LEAM Multi_User Db

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)
842.00	1.10	342.30	841.92	9.72	-4.18	9.74	0.22	0.19	-5.85
973.00	1.41	346.12	972.89	12.48	-4.95	12.51	0.24	0.24	2.92
1,064.00	1.32	7.21	1,063.86	14.61	-5.08	14.64	0.56	-0.10	23.18
1,156.00	1.14	8.80	1,155.84	16.57	-4.81	16.59	0.20	-0.20	1.73
1,248.00	0.70	17.41	1,247.83	18.01	-4.50	18.03	0.50	-0.48	9.36
1,340.00	0.79	1.94	1,339.82	19.18	-4.31	19.20	0.24	0.10	-16.82
1,430.00	0.79	1.24	1,429.81	20.42	-4.28	20.44	0.01	0.00	-0.78
1,523.00	0.53	19.17	1,522.81	21.46	-4.12	21.49	0.35	-0.28	19.28
1,616.00	0.40	20.22	1,615.80	22.17	-3.87	22.20	0.14	-0.14	1.13
1,706.00	0.35	348.76	1,705.80	22.74	-3.81	22.76	0.23	-0.06	-34.96
1,799.00	0.18	37.45	1,798.80	23.13	-3.78	23.15	0.29	-0.18	52.35
1,894.00	0.26	324.10	1,893.80	23.43	-3.82	23.45	0.28	0.08	-77.21
1,989.00	0.09	308.15	1,988.80	23.65	-4.00	23.67	0.18	-0.18	-16.79
2,084.00	0.26	3.52	2,083.80	23.91	-4.05	23.93	0.23	0.18	58.28
2,176.00	0.18	287.94	2,175.80	24.16	-4.17	24.18	0.30	-0.09	-82.15
2,272.00	0.18	198.81	2,271.80	24.06	-4.36	24.09	0.26	0.00	-92.84
2,366.00	0.26	53.80	2,365.80	24.05	-4.24	24.07	0.45	0.09	-154.27
2,459.00	0.35	71.02	2,458.80	24.27	-3.80	24.29	0.14	0.10	18.52
2,553.00	0.53	60.83	2,552.79	24.57	-3.15	24.59	0.21	0.19	-10.84
2,648.00	0.44	77.53	2,647.79	24.87	-2.41	24.88	0.18	-0.09	17.58
2,742.00	0.70	54.15	2,741.79	25.28	-1.59	25.29	0.37	0.28	-24.87
2,837.00	0.70	56.78	2,836.78	25.94	-0.64	25.94	0.03	0.00	2.77
2,932.00	1.06	77.88	2,931.77	26.44	0.71	26.44	0.50	0.38	22.21
3,025.00	1.58	86.31	3,024.74	26.70	2.83	26.69	0.60	0.56	9.06
3,119.00	2.20	84.21	3,118.69	26.97	5.92	26.94	0.66	0.66	-2.23
3,214.00	3.08	88.07	3,213.59	27.24	10.28	27.18	0.94	0.93	4.06
3,309.00	3.08	91.76	3,308.45	27.25	15.38	27.16	0.21	0.00	3.88
3,404.00	3.08	93.17	3,403.31	27.03	20.48	26.92	0.08	0.00	1.48
3,499.00	2.99	93.35	3,498.18	26.74	25.51	26.60	0.10	-0.09	0.19
3,593.00	3.08	90.01	3,592.05	26.60	30.48	26.43	0.21	0.10	-3.55
3,687.00	3.61	88.07	3,685.89	26.70	35.96	26.50	0.58	0.56	-2.06
3,781.00	3.96	104.24	3,779.69	26.00	42.07	25.77	1.19	0.37	17.20
3,876.00	4.04	106.00	3,874.46	24.27	48.46	24.01	0.15	0.08	1.85
3,971.00	3.78	110.40	3,969.23	22.25	54.61	21.96	0.42	-0.27	4.63
4,066.00	4.22	109.34	4,064.00	20.01	60.85	19.68	0.47	0.46	-1.12
4,163.00	4.40	107.23	4,160.73	17.72	67.77	17.35	0.25	0.19	-2.18
4,257.00	4.75	114.09	4,254.43	15.06	74.77	14.66	0.69	0.37	7.30
4,350.00	4.04	104.24	4,347.16	12.69	81.46	12.25	1.11	-0.76	-10.59
4,444.00	3.96	93.35	4,440.93	11.68	87.91	11.21	0.81	-0.09	-11.59
4,538.00	3.69	91.41	4,534.72	11.42	94.17	10.91	0.32	-0.29	-2.06
4,633.00	4.04	90.01	4,629.50	11.34	100.57	10.80	0.38	0.37	-1.47
4,727.00	5.36	89.30	4,723.19	11.40	108.28	10.81	1.41	1.40	-0.76
4,822.00	5.63	90.18	4,817.75	11.44	117.37	10.80	0.30	0.28	0.93

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	LEAM 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)	
4,964.00	4.84	85.44	4,959.16	11.89	130.31	11.18	0.63	-0.56	-3.34	
5,011.00	4.92	80.16	5,005.99	12.39	134.27	11.67	0.97	0.17	-11.23	
5,058.00	5.01	74.19	5,052.81	13.30	138.23	12.55	1.12	0.19	-12.70	
5,105.00	5.10	65.75	5,099.63	14.71	142.11	13.94	1.59	0.19	-17.96	
5,152.00	5.36	59.07	5,146.43	16.70	145.90	15.91	1.41	0.55	-14.21	
5,199.00	5.54	52.04	5,193.22	19.22	149.57	18.41	1.47	0.38	-14.96	
5,247.00	5.89	46.06	5,240.98	22.36	153.17	21.53	1.44	0.73	-12.46	
5,294.00	6.42	41.31	5,287.71	26.00	156.64	25.16	1.56	1.13	-10.11	
5,342.00	6.95	38.85	5,335.39	30.28	160.24	29.41	1.25	1.10	-5.13	
5,437.00	6.95	37.10	5,429.69	39.34	167.31	38.44	0.22	0.00	-1.84	
5,530.00	7.30	37.62	5,521.97	48.51	174.31	47.57	0.38	0.38	0.56	
5,624.00	7.56	37.97	5,615.18	58.12	181.76	57.13	0.28	0.28	0.37	
5,718.00	8.35	38.50	5,708.27	68.33	189.81	67.30	0.84	0.84	0.56	
5,813.00	7.56	36.57	5,802.36	78.75	197.83	77.68	0.88	-0.83	-2.03	
5,908.00	6.24	32.00	5,896.67	88.15	204.29	87.04	1.50	-1.39	-4.81	
6,002.00	6.07	30.06	5,990.13	96.78	209.49	95.65	0.29	-0.18	-2.06	
6,096.00	5.45	25.67	6,083.65	105.11	213.91	103.95	0.81	-0.66	-4.67	
6,191.00	4.22	23.71	6,178.31	112.37	217.27	111.20	1.31	-1.29	-2.06	
6,285.00	3.78	23.21	6,272.08	118.39	219.88	117.20	0.47	-0.47	-0.53	
6,379.00	3.17	20.75	6,365.91	123.67	222.02	122.46	0.67	-0.65	-2.62	
6,474.00	3.08	24.62	6,460.77	128.44	224.02	127.23	0.24	-0.09	4.07	
6,568.00	2.64	23.03	6,554.65	132.73	225.92	131.51	0.48	-0.47	-1.69	
6,663.00	1.85	20.57	6,649.58	136.18	227.31	134.95	0.84	-0.83	-2.59	
6,758.00	1.32	2.47	6,744.54	138.71	227.90	137.47	0.76	-0.56	-19.05	
7,041.00	1.06	11.78	7,027.48	144.53	228.57	143.29	0.11	-0.09	3.29	
7,231.00	0.88	38.85	7,217.46	147.38	229.85	146.14	0.26	-0.09	14.25	
7,325.00	0.70	26.55	7,311.45	148.46	230.55	147.21	0.26	-0.19	-13.09	
7,420.00	0.53	13.89	7,406.44	149.41	230.92	148.15	0.23	-0.18	-13.33	
7,515.00	0.35	21.80	7,501.44	150.10	231.13	148.85	0.20	-0.19	8.33	
7,609.00	0.35	37.62	7,595.44	150.60	231.41	149.34	0.10	0.00	16.83	
7,703.00	0.26	135.18	7,689.44	150.67	231.74	149.42	0.49	-0.10	103.79	
7,797.00	0.26	157.86	7,783.44	150.32	231.97	149.07	0.11	0.00	24.13	
7,892.00	0.53	211.82	7,878.43	149.75	231.82	148.49	0.45	0.28	56.80	
7,986.00	0.70	209.01	7,972.43	148.88	231.31	147.62	0.18	0.18	-2.99	
8,081.00	0.79	217.45	8,067.42	147.85	230.63	146.60	0.15	0.09	8.88	
8,175.00	0.97	188.44	8,161.41	146.55	230.12	145.30	0.50	0.19	-30.86	
8,270.00	0.97	182.12	8,256.40	144.95	229.97	143.70	0.11	0.00	-6.65	
8,362.00	1.32	188.62	8,348.38	143.12	229.79	141.88	0.41	0.38	7.07	
8,427.00	0.97	197.20	8,413.36	141.86	229.51	140.61	0.60	-0.54	13.20	
8,508.00	0.88	306.30	8,494.36	141.57	228.81	140.33	1.86	-0.11	134.69	
8,602.00	14.68	352.62	8,587.29	153.87	226.69	152.64	14.99	14.68	49.28	
8,650.00	22.69	355.96	8,632.72	169.17	225.25	167.94	16.83	16.69	6.96	
8,698.00	29.81	355.61	8,675.74	190.32	223.68	189.11	14.84	14.83	-0.73	

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	LEAM Multi_User Db

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)
8,745.00	37.64	355.08	8,714.80	216.31	221.55	215.11	16.67	16.66	-1.13
8,791.00	41.59	355.61	8,750.23	245.54	219.18	244.35	8.62	8.59	1.15
8,838.00	45.02	357.02	8,784.43	277.70	217.12	276.52	7.58	7.30	3.00
8,886.00	47.84	358.07	8,817.51	312.44	215.64	311.27	6.08	5.88	2.19
8,933.00	51.79	358.42	8,847.83	348.33	214.54	347.16	8.42	8.40	0.74
8,980.00	55.57	358.60	8,875.67	386.18	213.56	385.02	8.05	8.04	0.38
9,027.00	58.65	0.18	8,901.19	425.63	213.15	424.47	7.14	6.55	3.36
9,076.00	61.73	1.59	8,925.54	468.14	213.81	466.97	6.76	6.29	2.88
9,123.00	64.54	0.71	8,946.78	510.05	214.65	508.88	6.21	5.98	-1.87
9,171.00	68.06	359.30	8,966.07	554.00	214.65	552.83	7.81	7.33	-2.94
9,218.00	72.63	359.83	8,981.88	598.24	214.31	597.08	9.78	9.72	1.13
9,265.00	77.65	1.06	8,993.93	643.66	214.67	642.48	10.98	10.68	2.62
9,312.00	81.78	1.24	9,002.32	689.88	215.60	688.70	8.80	8.79	0.38
9,360.00	85.12	0.71	9,007.79	737.55	216.41	736.37	7.04	6.96	-1.10
9,427.00	87.23	0.01	9,012.26	804.40	216.83	803.21	3.32	3.15	-1.04
9,521.00	88.55	0.01	9,015.72	898.33	216.85	897.15	1.40	1.40	0.00
9,616.00	89.96	0.53	9,016.96	993.32	217.29	992.13	1.58	1.48	0.55
9,710.00	89.96	1.06	9,017.02	1,087.31	218.60	1,086.11	0.56	0.00	0.56
9,804.00	90.66	359.65	9,016.51	1,181.31	219.18	1,180.10	1.67	0.74	-1.50
9,898.00	90.77	358.95	9,015.34	1,275.29	218.03	1,274.09	0.75	0.12	-0.74
9,993.00	90.82	358.42	9,014.02	1,370.26	215.85	1,369.07	0.56	0.05	-0.56
10,087.00	90.40	358.78	9,013.02	1,464.22	213.56	1,463.05	0.59	-0.45	0.38
10,183.00	90.31	358.42	9,012.43	1,560.19	211.21	1,559.03	0.39	-0.09	-0.38
10,278.00	91.10	358.25	9,011.26	1,655.14	208.45	1,653.99	0.85	0.83	-0.18
10,373.00	89.52	357.19	9,010.74	1,750.06	204.67	1,748.93	2.00	-1.66	-1.12
10,468.00	89.34	357.02	9,011.69	1,844.94	199.87	1,843.83	0.26	-0.19	-0.18
10,563.00	90.57	356.84	9,011.76	1,939.80	194.79	1,938.72	1.31	1.29	-0.19
10,658.00	89.16	358.25	9,011.99	2,034.71	190.72	2,033.64	2.10	-1.48	1.48
10,749.00	88.72	0.71	9,013.67	2,125.68	189.89	2,124.62	2.75	-0.48	2.70
10,840.00	88.99	0.89	9,015.49	2,216.65	191.16	2,215.59	0.36	0.30	0.20
10,932.00	89.25	0.01	9,016.90	2,308.64	191.88	2,307.57	1.00	0.28	-0.96
11,023.00	88.20	358.42	9,018.93	2,399.60	190.64	2,398.54	2.09	-1.15	-1.75
11,114.00	90.22	0.01	9,020.18	2,490.58	189.39	2,489.52	2.82	2.22	1.75
11,205.00	91.28	1.76	9,018.99	2,581.55	190.80	2,580.48	2.25	1.16	1.92
11,297.00	91.63	1.59	9,016.65	2,673.49	193.49	2,672.40	0.42	0.38	-0.18
11,390.00	90.84	1.59	9,014.65	2,766.43	196.07	2,765.33	0.85	-0.85	0.00
11,482.00	90.92	2.12	9,013.24	2,858.37	199.04	2,857.25	0.58	0.09	0.58
11,574.00	89.69	0.71	9,012.75	2,950.33	201.31	2,949.20	2.03	-1.34	-1.53
11,665.00	89.43	0.53	9,013.45	3,041.33	202.30	3,040.19	0.35	-0.29	-0.20
11,758.00	90.57	359.30	9,013.45	3,134.32	202.16	3,133.18	1.80	1.23	-1.32
11,850.00	89.60	359.13	9,013.31	3,226.31	200.90	3,225.18	1.07	-1.05	-0.18
11,943.00	89.25	359.13	9,014.24	3,319.30	199.49	3,318.17	0.38	-0.38	0.00
12,035.00	89.43	359.13	9,015.30	3,411.28	198.09	3,410.16	0.20	0.20	0.00
12,130.00	89.69	359.13	9,016.03	3,506.27	196.65	3,505.15	0.27	0.27	0.00

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	LEAM 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)	
12,224.00	90.75	357.19	9,015.67	3,600.21	193.63	3,599.11	2.35	1.13	-2.06	
12,319.00	89.96	358.25	9,015.08	3,695.13	189.85	3,694.05	1.39	-0.83	1.12	
12,414.00	90.48	358.07	9,014.72	3,790.08	186.80	3,789.02	0.58	0.55	-0.19	
12,507.00	88.99	359.65	9,015.15	3,883.06	184.95	3,882.00	2.34	-1.60	1.70	
12,601.00	89.16	0.71	9,016.67	3,977.04	185.25	3,975.98	1.14	0.18	1.13	
12,696.00	89.25	0.53	9,017.98	4,072.03	186.28	4,070.96	0.21	0.09	-0.19	
12,790.00	89.16	0.36	9,019.29	4,166.02	187.01	4,164.94	0.20	-0.10	-0.18	
12,884.00	88.64	0.36	9,021.09	4,260.00	187.60	4,258.92	0.55	-0.55	0.00	
12,979.00	88.64	1.06	9,023.35	4,354.96	188.77	4,353.88	0.74	0.00	0.74	
13,074.00	90.22	1.76	9,024.29	4,449.93	191.11	4,448.83	1.82	1.66	0.74	
13,169.00	90.40	1.41	9,023.78	4,544.89	193.74	4,543.77	0.41	0.19	-0.37	
13,263.00	92.51	2.29	9,021.39	4,638.80	196.77	4,637.67	2.43	2.24	0.94	
13,358.00	93.56	2.47	9,016.36	4,733.59	200.71	4,732.43	1.12	1.11	0.19	
13,451.00	92.33	0.89	9,011.58	4,826.42	203.43	4,825.25	2.15	-1.32	-1.70	
13,546.00	92.33	0.36	9,007.72	4,921.33	204.47	4,920.16	0.56	0.00	-0.56	
13,640.00	90.92	0.01	9,005.06	5,015.29	204.77	5,014.11	1.55	-1.50	-0.37	
13,735.00	88.20	357.90	9,005.79	5,110.26	203.04	5,109.09	3.62	-2.86	-2.22	
13,830.00	88.64	359.65	9,008.40	5,205.20	201.01	5,204.03	1.90	0.46	1.84	
13,924.00	87.93	359.13	9,011.22	5,299.15	200.01	5,297.99	0.94	-0.76	-0.55	
14,019.00	89.16	1.59	9,013.63	5,394.11	200.61	5,392.94	2.89	1.29	2.59	
14,115.00	90.22	1.24	9,014.15	5,490.08	202.98	5,488.90	1.16	1.10	-0.36	
14,209.00	91.28	0.36	9,012.92	5,584.06	204.29	5,582.87	1.47	1.13	-0.94	
14,303.00	91.63	359.83	9,010.53	5,678.03	204.45	5,676.84	0.68	0.37	-0.56	
14,397.00	90.92	359.30	9,008.44	5,772.00	203.73	5,770.81	0.94	-0.76	-0.56	
14,491.00	90.31	358.95	9,007.43	5,865.98	202.30	5,864.80	0.75	-0.65	-0.37	
14,586.00	91.10	358.25	9,006.26	5,960.95	199.98	5,959.78	1.11	0.83	-0.74	
14,681.00	92.42	358.60	9,003.35	6,055.86	197.37	6,054.71	1.44	1.39	0.37	
14,776.00	90.48	358.60	9,000.94	6,150.80	195.05	6,149.65	2.04	-2.04	0.00	
14,870.00	90.48	358.95	9,000.15	6,244.77	193.04	6,243.64	0.37	0.00	0.37	
14,965.00	89.78	359.65	8,999.94	6,339.77	191.88	6,338.63	1.04	-0.74	0.74	
15,059.00	89.96	359.65	9,000.15	6,433.76	191.30	6,432.63	0.19	0.19	0.00	
15,155.00	88.37	358.42	9,001.55	6,529.73	189.68	6,528.61	2.09	-1.66	-1.28	
15,249.00	88.37	358.25	9,004.22	6,623.66	186.95	6,622.55	0.18	0.00	-0.18	
15,343.00	88.02	359.13	9,007.19	6,717.58	184.81	6,716.49	1.01	-0.37	0.94	
15,438.00	88.90	359.30	9,009.74	6,812.54	183.51	6,811.45	0.94	0.93	0.18	
15,532.00	90.48	359.65	9,010.25	6,906.53	182.64	6,905.44	1.72	1.68	0.37	
15,627.00	90.57	358.42	9,009.38	7,001.51	181.04	7,000.43	1.30	0.09	-1.29	
15,720.00	90.66	358.07	9,008.38	7,094.46	178.20	7,093.40	0.39	0.10	-0.38	
15,815.00	91.70	357.72	9,006.42	7,189.38	174.71	7,188.33	1.16	1.09	-0.37	
15,909.00	89.60	358.95	9,005.36	7,283.33	171.98	7,282.29	2.59	-2.23	1.31	
16,004.00	88.81	358.42	9,006.67	7,378.29	169.80	7,377.26	1.00	-0.83	-0.56	
16,099.00	87.67	358.60	9,009.59	7,473.21	167.33	7,472.20	1.21	-1.20	0.19	
16,194.00	90.40	0.36	9,011.19	7,568.18	166.47	7,567.17	3.42	2.87	1.85	

LEAM Drilling Systems

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Tomb Raider 12-1 Fed 516H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Site:	Tomb Raider 1-12 Fed Com	MD Reference:	3502.3' GE + 32' KB @ 3534.30usft
Well:	Tomb Raider 12-1 Fed 516H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	LEAM 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)
16,289.00	90.92	1.76	9,010.10	7,663.16	168.22	7,662.13	1.57	0.55	1.47
16,383.00	91.36	2.12	9,008.23	7,757.08	171.41	7,756.04	0.60	0.47	0.38
16,478.00	92.86	1.94	9,004.73	7,851.96	174.77	7,850.90	1.59	1.58	-0.19
16,572.00	91.10	1.94	9,001.48	7,945.84	177.95	7,944.76	1.87	-1.87	0.00
16,668.00	89.08	0.71	9,001.33	8,041.81	180.17	8,040.72	2.46	-2.10	-1.28
16,762.00	88.72	0.53	9,003.14	8,135.79	181.19	8,134.69	0.43	-0.38	-0.19
16,857.00	89.43	2.29	9,004.67	8,230.74	183.52	8,229.63	2.00	0.75	1.85
16,951.00	90.57	4.40	9,004.67	8,324.57	189.01	8,323.43	2.55	1.21	2.24
17,045.00	90.13	2.99	9,004.10	8,418.38	195.06	8,417.20	1.57	-0.47	-1.50
17,140.00	89.96	0.53	9,004.02	8,513.32	197.98	8,512.13	2.60	-0.18	-2.59
17,235.00	88.55	359.48	9,005.26	8,608.31	197.99	8,607.11	1.85	-1.48	-1.11
17,330.00	89.52	358.42	9,006.86	8,703.28	196.25	8,702.09	1.51	1.02	-1.12
17,424.00	89.52	357.37	9,007.64	8,797.21	192.80	8,796.04	1.12	0.00	-1.12
17,519.00	89.08	357.37	9,008.80	8,892.10	188.44	8,890.95	0.46	-0.46	0.00
17,613.00	89.87	358.60	9,009.67	8,986.04	185.13	8,984.91	1.56	0.84	1.31
17,706.00	89.08	358.42	9,010.52	9,079.00	182.72	9,077.88	0.87	-0.85	-0.19
17,801.00	92.15	0.18	9,009.50	9,173.98	181.55	9,172.86	3.72	3.23	1.85
17,895.00	90.40	359.13	9,007.41	9,267.95	180.99	9,266.83	2.17	-1.86	-1.12
17,989.00	91.36	0.18	9,005.96	9,361.93	180.42	9,360.82	1.51	1.02	1.12
18,083.00	88.55	358.42	9,006.04	9,455.91	179.27	9,454.80	3.53	-2.99	-1.87
18,177.00	87.14	357.55	9,009.57	9,549.78	175.97	9,548.69	1.76	-1.50	-0.93
18,272.00	86.97	358.78	9,014.45	9,644.61	172.93	9,643.53	1.31	-0.18	1.29
18,366.00	91.54	0.89	9,015.67	9,738.57	172.66	9,737.49	5.35	4.86	2.24
18,460.00	91.19	357.20	9,013.43	9,832.51	171.10	9,831.44	3.94	-0.37	-3.93
18,555.00	89.52	356.31	9,012.85	9,927.35	165.72	9,926.31	1.99	-1.76	-0.94
18,649.00	91.28	357.19	9,012.19	10,021.20	160.39	10,020.18	2.09	1.87	0.94
18,744.00	90.40	356.84	9,010.80	10,116.05	155.45	10,115.07	1.00	-0.93	-0.37
18,839.00	91.71	359.83	9,009.05	10,210.99	152.69	10,210.01	3.44	1.38	3.15
18,934.00	92.51	0.71	9,005.55	10,305.92	153.13	10,304.94	1.25	0.84	0.93
19,028.00	93.39	0.53	9,000.71	10,399.79	154.15	10,398.80	0.96	0.94	-0.19
19,055.00	93.47	0.89	8,999.10	10,426.74	154.48	10,425.75	1.36	0.30	1.33
19,116.00	93.47	0.89	8,995.40	10,487.62	155.43	10,486.62	0.00	0.00	0.00
TD Projection									