



Boomslang 14-23 Fed No. 1H

Lea County, NM

August 30, 2017

Job No. LNM5147017

HOBBS OCD

APR 28 2018

RECEIVED

Survey Completion Report



Survey Certification Letter

August 30, 2017



Operator Name: Devon Energy Corp.
Well Name: Boomslang 14-23 Fed No. 1H
County/Parish: Lea County,
State: NM
Rig Name: Patterson 364
Job Number: LNM5147017

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

<u>Surveyor</u>	<u>Surveyed Depths</u>	<u>Projection to Bit</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
ProDirectional	148' MD – 19,225' MD	19,300' MD	07/28/17 – 08/14/17	MWD

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266

prodirectional.com

The Standard of Excellence in Directional Supervision



Devon Energy Corp.

Lea County, NM
Boomslang 14-23 Fed
No. 1H
OH

Survey: ProDirectional

Survey Report

30 August, 2017





ProDirectional
Survey Report



Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 1H
Project:	Lea County, NM (NAD83)	TVD Reference:	GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
Site:	Boomslang 14-23 Fed	MD Reference:	GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
Well:	1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD 148'-19225', PTB 19300'	Database:	WellPlanner1

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

Site	Boomslang 14-23 Fed		
Site Position:		Northing:	446,243.13 usft
From:	Map	Easting:	786,353.47 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.2243153
		Longitude:	-103.5410047
		Grid Convergence:	0.42 °

Well	1H					
Well Position	+N/-S	0.00 usft	Northing:	446,243.13 usft	Latitude:	32.2243153
	+E/-W	0.00 usft	Easting:	786,353.47 usft	Longitude:	-103.5410047
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,602.00 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/14/2017	6.83	60.00	48,127.80

Design		MWD 148'-19225', PTB 19300'		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.34

Survey Program		Date: 8/30/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
148.00	19,300.00	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM



ProDirectional
Survey Report



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Wellbore: OH
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MD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	446,243.13	786,353.47
148.00	0.40	154.50	148.00	0.47	-0.47	0.22	0.52	154.50	446,242.66	786,353.69
Pro MWD First Survey: 148' MD										
242.00	0.50	126.80	242.00	1.02	-1.01	0.69	1.22	145.53	446,242.12	786,354.16
336.00	0.70	137.60	335.99	1.69	-1.68	1.41	2.19	140.00	446,241.45	786,354.88
431.00	0.70	140.70	430.98	2.58	-2.56	2.17	3.35	139.71	446,240.57	786,355.64
523.00	0.60	155.90	522.98	3.46	-3.43	2.72	4.38	141.59	446,239.70	786,356.19
614.00	0.60	168.20	613.97	4.37	-4.33	3.01	5.28	145.19	446,238.80	786,356.48
705.00	0.70	165.30	704.97	5.37	-5.34	3.25	6.25	148.66	446,237.79	786,356.72
797.00	0.70	164.30	796.96	6.46	-6.42	3.54	7.33	151.10	446,236.71	786,357.01
889.00	0.70	175.10	888.95	7.56	-7.52	3.74	8.40	153.53	446,235.61	786,357.21
981.00	0.80	164.50	980.95	8.74	-8.70	3.96	9.56	155.50	446,234.43	786,357.43
1,072.00	0.70	194.90	1,071.94	9.89	-9.85	3.99	10.63	157.94	446,233.28	786,357.46
1,164.00	0.60	206.40	1,163.93	10.86	-10.82	3.63	11.42	161.45	446,232.31	786,357.10
1,255.00	0.80	210.60	1,254.93	11.83	-11.80	3.10	12.20	165.29	446,231.33	786,356.57
1,348.00	0.70	147.80	1,347.92	12.87	-12.84	3.07	13.20	166.55	446,230.29	786,356.54
1,456.00	0.40	201.30	1,455.91	13.78	-13.75	3.28	14.13	166.56	446,229.38	786,356.75
1,549.00	0.30	265.30	1,548.91	14.10	-14.07	2.92	14.37	168.26	446,229.06	786,356.39
1,641.00	0.30	297.20	1,640.91	14.01	-13.98	2.47	14.19	169.98	446,229.15	786,355.94
1,733.00	0.30	317.20	1,732.91	13.71	-13.69	2.09	13.85	171.32	446,229.44	786,355.56
1,828.00	0.40	347.70	1,827.91	13.21	-13.19	1.85	13.31	172.01	446,229.94	786,355.32
1,923.00	0.40	317.20	1,922.91	12.63	-12.62	1.56	12.71	172.97	446,230.51	786,355.03
2,018.00	0.40	316.80	2,017.90	12.14	-12.13	1.10	12.18	174.80	446,231.00	786,354.57
2,113.00	0.30	316.80	2,112.90	11.72	-11.71	0.71	11.73	176.55	446,231.42	786,354.18
2,208.00	0.50	316.10	2,207.90	11.23	-11.23	0.25	11.23	178.73	446,231.90	786,353.72
2,303.00	0.50	318.30	2,302.90	10.62	-10.62	-0.31	10.63	181.70	446,232.51	786,353.16
2,398.00	0.60	313.10	2,397.89	9.96	-9.97	-0.95	10.02	185.46	446,233.16	786,352.52



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 1H
Wellbore: OH
Design: MWD 148'-19225', PTB 19300'

Local Co-ordinate Reference: Well 1H
TVD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
MD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
2,493.00	0.30	304.40	2,492.89	9.47	-9.49	-1.52	9.61	189.11	446,233.64	786,351.95	
2,589.00	0.40	276.10	2,588.89	9.29	-9.31	-2.06	9.54	192.49	446,233.82	786,351.41	
2,684.00	0.30	303.00	2,683.89	9.11	-9.14	-2.60	9.51	195.88	446,233.99	786,350.87	
2,779.00	0.30	306.50	2,778.88	8.82	-8.86	-3.01	9.36	198.76	446,234.27	786,350.46	
2,874.00	0.70	283.40	2,873.88	8.53	-8.58	-3.77	9.37	203.75	446,234.55	786,349.70	
2,969.00	1.00	266.30	2,968.87	8.44	-8.50	-5.17	9.94	211.30	446,234.63	786,348.30	
3,064.00	1.20	266.50	3,063.85	8.53	-8.61	-6.99	11.09	219.05	446,234.52	786,346.48	
3,159.00	1.90	268.90	3,158.82	8.59	-8.70	-9.55	12.92	227.67	446,234.43	786,343.92	
3,254.00	2.20	270.40	3,253.76	8.57	-8.72	-12.95	15.61	236.05	446,234.41	786,340.52	
3,349.00	2.10	270.40	3,348.69	8.50	-8.69	-16.52	18.66	242.24	446,234.44	786,336.95	
3,444.00	2.00	277.70	3,443.63	8.23	-8.46	-19.90	21.62	246.97	446,234.67	786,333.57	
3,539.00	1.90	283.30	3,538.57	7.61	-7.88	-23.07	24.38	251.15	446,235.25	786,330.40	
3,634.00	1.80	283.40	3,633.52	6.87	-7.17	-26.06	27.03	254.62	446,235.96	786,327.41	
3,730.00	1.90	288.50	3,729.47	5.98	-6.31	-29.03	29.71	257.73	446,236.82	786,324.44	
3,824.00	1.50	285.70	3,823.43	5.12	-5.49	-31.70	32.17	260.18	446,237.64	786,321.77	
3,919.00	1.40	282.90	3,918.40	4.50	-4.89	-34.02	34.37	261.82	446,238.24	786,319.45	
4,014.00	1.60	275.70	4,013.37	4.08	-4.50	-36.48	36.75	262.97	446,238.63	786,316.99	
4,109.00	1.90	271.00	4,108.33	3.89	-4.34	-39.37	39.61	263.71	446,238.79	786,314.10	
4,204.00	1.50	267.40	4,203.28	3.88	-4.37	-42.19	42.41	264.09	446,238.76	786,311.28	
4,299.00	1.50	266.80	4,298.25	3.98	-4.50	-44.67	44.90	264.25	446,238.63	786,308.80	
4,394.00	1.10	269.20	4,393.23	4.04	-4.58	-46.82	47.05	264.42	446,238.55	786,306.65	
4,489.00	0.80	230.60	4,488.21	4.45	-5.01	-48.25	48.51	264.07	446,238.12	786,305.22	
4,585.00	1.50	200.10	4,584.19	6.05	-6.62	-49.20	49.64	262.34	446,236.51	786,304.27	
4,680.00	2.60	207.10	4,679.13	9.12	-9.70	-50.61	51.53	259.15	446,233.43	786,302.86	
4,775.00	2.30	196.20	4,774.05	12.85	-13.45	-52.12	53.83	255.53	446,229.68	786,301.35	
4,870.00	2.50	174.50	4,868.97	16.74	-17.34	-52.45	55.25	251.70	446,225.79	786,301.02	
4,965.00	2.90	162.10	4,963.86	21.10	-21.69	-51.52	55.90	247.16	446,221.44	786,301.95	



ProDirectional
Survey Report



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Local Co-ordinate Reference: Well 1H
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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
5,060.00	2.50	153.70	5,058.75	25.26	-25.84	-49.86	56.16	242.61	446,217.29	786,303.61	
5,155.00	2.30	160.30	5,153.67	28.93	-29.49	-48.30	56.59	238.59	446,213.64	786,305.17	
5,232.00	2.10	161.40	5,230.61	31.73	-32.28	-47.33	57.29	235.70	446,210.85	786,306.14	
5,327.00	1.10	119.70	5,325.58	33.85	-34.38	-45.98	57.41	233.21	446,208.75	786,307.49	
5,422.00	1.20	15.60	5,420.57	33.36	-33.88	-44.92	56.26	232.98	446,209.25	786,308.55	
5,518.00	3.10	331.60	5,516.50	30.09	-30.62	-45.89	55.17	236.28	446,212.51	786,307.58	
5,612.00	5.50	323.20	5,610.23	24.21	-24.78	-49.79	55.62	243.54	446,218.35	786,303.68	
5,707.00	5.50	321.20	5,704.79	16.95	-17.59	-55.37	58.10	252.38	446,225.54	786,298.10	
5,802.00	5.10	320.40	5,799.39	10.08	-10.79	-60.92	61.86	259.96	446,232.34	786,292.55	
5,897.00	5.20	318.30	5,894.00	3.55	-4.32	-66.47	66.61	266.28	446,238.81	786,287.00	
5,992.00	5.20	317.90	5,988.61	-2.92	2.09	-72.22	72.25	271.66	446,245.22	786,281.25	
6,087.00	5.20	316.10	6,083.22	-9.29	8.39	-78.09	78.54	276.13	446,251.52	786,275.38	
6,183.00	4.40	314.70	6,178.88	-15.08	14.11	-83.73	84.91	279.57	446,257.24	786,269.74	
6,278.00	5.60	316.30	6,273.52	-21.06	20.03	-89.52	91.73	282.61	446,263.16	786,263.95	
6,373.00	5.80	315.80	6,368.05	-27.92	26.82	-96.07	99.74	285.60	446,269.95	786,257.40	
6,468.00	5.20	314.90	6,462.61	-34.48	33.30	-102.47	107.74	288.00	446,276.43	786,251.00	
6,563.00	5.10	314.10	6,557.23	-40.52	39.28	-108.55	115.43	289.89	446,282.41	786,244.92	
6,658.00	4.80	313.90	6,651.88	-46.29	44.97	-114.44	122.96	291.45	446,288.10	786,239.03	
6,753.00	5.40	313.30	6,746.50	-52.18	50.79	-120.56	130.82	292.85	446,293.92	786,232.91	
6,848.00	5.80	312.70	6,841.05	-58.58	57.11	-127.34	139.56	294.16	446,300.24	786,226.13	
6,943.00	5.10	313.10	6,935.62	-64.79	63.25	-133.95	148.14	295.28	446,306.38	786,219.52	
7,038.00	6.60	312.50	7,030.12	-71.45	69.83	-141.06	157.40	296.34	446,312.96	786,212.41	
7,133.00	6.40	313.20	7,124.51	-78.85	77.14	-148.95	167.74	297.38	446,320.27	786,204.52	
7,228.00	6.00	312.50	7,218.95	-85.92	84.12	-156.47	177.65	298.26	446,327.25	786,197.00	
7,323.00	5.60	309.80	7,313.47	-92.32	90.44	-163.69	187.01	298.92	446,333.57	786,189.78	
7,418.00	5.10	308.90	7,408.05	-98.02	96.06	-170.54	195.73	299.39	446,339.19	786,182.93	
7,513.00	5.60	311.10	7,502.64	-103.79	101.76	-177.32	204.44	299.85	446,344.89	786,176.15	



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7,608.00	5.00	314.00	7,597.23	-109.79	107.68	-183.79	213.01	300.37	446,350.81	786,169.68	
7,703.00	4.50	312.10	7,691.90	-115.23	113.06	-189.53	220.69	300.82	446,356.19	786,163.94	
7,798.00	3.80	311.00	7,786.65	-119.85	117.62	-194.67	227.44	301.14	446,360.75	786,158.80	
7,893.00	3.10	311.60	7,881.48	-123.67	121.39	-198.97	233.07	301.39	446,364.52	786,154.50	
7,988.00	2.80	308.70	7,976.36	-126.87	124.55	-202.70	237.91	301.57	446,367.68	786,150.77	
8,083.00	2.90	308.00	8,071.24	-129.85	127.48	-206.40	242.60	301.70	446,370.61	786,147.07	
8,178.00	2.60	309.70	8,166.13	-132.74	130.33	-209.96	247.12	301.83	446,373.46	786,143.51	
8,273.00	2.20	311.70	8,261.05	-135.37	132.92	-212.97	251.05	301.97	446,376.05	786,140.50	
8,368.00	1.90	308.80	8,355.98	-137.60	135.12	-215.56	254.41	302.08	446,378.25	786,137.91	
8,463.00	0.50	306.10	8,450.96	-138.85	136.35	-217.13	256.39	302.13	446,379.48	786,136.34	
8,558.00	0.60	308.90	8,545.96	-139.41	136.91	-217.85	257.30	302.15	446,380.04	786,135.62	
8,653.00	0.70	308.60	8,640.95	-140.09	137.58	-218.69	258.37	302.18	446,380.71	786,134.78	
8,748.00	0.40	315.20	8,735.95	-140.70	138.18	-219.38	259.27	302.21	446,381.31	786,134.09	
8,777.00	0.50	318.50	8,764.95	-140.87	138.35	-219.53	259.49	302.22	446,381.48	786,133.94	
8,840.00	1.90	186.10	8,827.94	-140.04	137.52	-219.82	259.29	302.03	446,380.65	786,133.65	
8,887.00	8.30	182.90	8,874.72	-135.87	133.35	-220.08	257.33	301.21	446,376.48	786,133.39	
8,935.00	12.80	181.60	8,921.90	-127.10	124.57	-220.40	253.17	299.47	446,367.70	786,133.07	
8,982.00	19.10	178.00	8,967.07	-114.20	111.67	-220.28	246.97	296.88	446,354.80	786,133.19	
9,030.00	27.30	174.60	9,011.15	-95.34	92.83	-218.97	237.83	292.97	446,335.96	786,134.50	
9,077.00	35.10	172.70	9,051.32	-71.14	68.65	-216.23	226.87	287.61	446,311.78	786,137.24	
9,125.00	40.10	171.60	9,089.34	-42.10	39.65	-212.22	215.89	280.58	446,282.78	786,141.25	
9,172.00	44.00	171.60	9,124.24	-10.91	8.52	-207.62	207.79	272.35	446,251.65	786,145.85	
9,220.00	46.30	172.10	9,158.09	22.83	-25.17	-202.80	204.35	262.93	446,217.96	786,150.67	
9,267.00	48.60	173.00	9,189.87	57.21	-59.50	-198.31	207.05	253.30	446,183.63	786,155.16	
9,315.00	50.80	174.00	9,220.91	93.62	-95.87	-194.18	216.55	243.72	446,147.26	786,159.29	
9,362.00	52.50	176.60	9,250.08	130.38	-132.59	-191.17	232.65	235.25	446,110.54	786,162.30	
9,410.00	55.80	179.80	9,278.19	169.27	-171.47	-189.97	255.91	227.93	446,071.66	786,163.50	



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 1H
Wellbore: OH
Design: MWD 148'-19225', PTB 19300'

Local Co-ordinate Reference: Well 1H
TVD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
MD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
9,457.00	60.70	182.30	9,302.92	209.20	-211.41	-190.72	284.73	222.05	446,031.72	786,162.75
9,505.00	63.50	184.20	9,325.38	251.51	-253.76	-193.14	318.89	217.28	445,989.37	786,160.33
9,552.00	67.60	184.90	9,344.83	294.11	-296.40	-196.53	355.64	213.55	445,946.73	786,156.94
9,600.00	73.30	183.60	9,360.88	339.16	-341.49	-199.87	395.68	210.34	445,901.64	786,153.60
9,647.00	76.80	182.80	9,373.01	384.46	-386.82	-202.41	436.57	207.62	445,856.31	786,151.06
9,696.00	81.80	181.10	9,382.10	432.54	-434.92	-204.04	480.40	205.13	445,808.21	786,149.43
9,764.00	87.80	178.10	9,388.26	500.22	-502.60	-203.56	542.26	202.05	445,740.53	786,149.91
9,859.00	88.10	177.80	9,391.66	595.13	-597.48	-200.16	630.11	198.52	445,645.65	786,153.31
9,954.00	88.80	177.90	9,394.23	690.07	-692.38	-196.60	719.75	195.85	445,550.75	786,156.87
10,049.00	88.00	178.90	9,396.88	785.01	-787.30	-193.95	810.84	193.84	445,455.83	786,159.52
10,144.00	87.70	180.00	9,400.45	879.94	-882.23	-193.04	903.10	192.34	445,360.90	786,160.43
10,239.00	88.40	180.70	9,403.68	974.87	-977.17	-193.62	996.17	191.21	445,265.96	786,159.85
10,334.00	89.10	180.70	9,405.75	1,069.82	-1,072.14	-194.78	1,089.69	190.30	445,170.99	786,158.69
10,429.00	89.90	181.30	9,406.58	1,164.78	-1,167.12	-196.43	1,183.53	189.55	445,076.01	786,157.04
10,524.00	89.70	181.40	9,406.91	1,259.72	-1,262.09	-198.67	1,277.63	188.95	444,981.04	786,154.80
10,619.00	90.30	180.60	9,406.91	1,354.68	-1,357.08	-200.33	1,371.78	188.40	444,886.05	786,153.14
10,714.00	91.10	180.80	9,405.75	1,449.64	-1,452.06	-201.49	1,465.97	187.90	444,791.07	786,151.98
10,809.00	90.00	181.30	9,404.84	1,544.60	-1,547.04	-203.23	1,560.33	187.48	444,696.09	786,150.24
10,902.00	89.40	182.30	9,405.33	1,637.51	-1,639.99	-206.15	1,652.90	187.16	444,603.14	786,147.32
10,994.00	88.00	181.50	9,407.41	1,729.39	-1,731.91	-209.20	1,744.50	186.89	444,511.22	786,144.27
11,086.00	88.30	181.30	9,410.38	1,821.28	-1,823.84	-211.45	1,836.05	186.61	444,419.29	786,142.02
11,177.00	86.30	181.10	9,414.67	1,912.13	-1,914.71	-213.35	1,926.56	186.36	444,328.42	786,140.12
11,268.00	85.70	180.60	9,421.02	2,002.87	-2,005.48	-214.70	2,016.94	186.11	444,237.65	786,138.77
11,360.00	85.90	180.90	9,427.76	2,094.60	-2,097.22	-215.90	2,108.31	185.88	444,145.91	786,137.57
11,452.00	85.80	181.10	9,434.41	2,186.32	-2,188.97	-217.50	2,199.75	185.67	444,054.16	786,135.97
11,544.00	87.70	180.40	9,439.63	2,278.14	-2,280.81	-218.70	2,291.27	185.48	443,962.32	786,134.77
11,636.00	89.50	180.90	9,441.88	2,370.08	-2,372.77	-219.75	2,382.93	185.29	443,870.36	786,133.72



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 1H
Wellbore: OH
Design: MWD 148'-19225', PTB 19300'

Local Co-ordinate Reference: Well 1H
TVD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
MD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
11,727.00	89.20	181.10	9,442.91	2,461.04	-2,463.75	-221.34	2,473.67	185.13	443,779.38	786,132.13
11,819.00	91.80	181.50	9,442.11	2,552.97	-2,555.72	-223.42	2,565.46	185.00	443,687.41	786,130.05
11,911.00	92.40	181.30	9,438.74	2,644.85	-2,647.63	-225.67	2,657.23	184.87	443,595.50	786,127.80
12,003.00	90.00	180.70	9,436.81	2,736.79	-2,739.59	-227.27	2,749.00	184.74	443,503.54	786,126.20
12,096.00	90.10	180.40	9,436.73	2,829.76	-2,832.58	-228.17	2,841.76	184.61	443,410.55	786,125.30
12,187.00	91.50	181.40	9,435.46	2,920.72	-2,923.56	-229.59	2,932.56	184.49	443,319.57	786,123.88
12,282.00	90.70	179.70	9,433.63	3,015.68	-3,018.53	-230.51	3,027.32	184.37	443,224.60	786,122.96
12,377.00	89.10	178.90	9,433.80	3,110.67	-3,113.52	-229.35	3,121.96	184.21	443,129.61	786,124.12
12,472.00	88.80	178.30	9,435.54	3,205.65	-3,208.48	-227.03	3,216.50	184.05	443,034.65	786,126.44
12,568.00	89.30	178.90	9,437.13	3,301.63	-3,304.43	-224.68	3,312.06	183.89	442,938.70	786,128.79
12,663.00	89.80	180.40	9,437.88	3,396.62	-3,399.43	-224.10	3,406.80	183.77	442,843.70	786,129.37
12,758.00	87.40	178.90	9,440.20	3,491.58	-3,494.39	-223.52	3,501.53	183.66	442,748.74	786,129.95
12,853.00	88.80	179.00	9,443.35	3,586.52	-3,589.31	-221.78	3,596.16	183.54	442,653.82	786,131.69
12,948.00	90.40	179.60	9,444.01	3,681.52	-3,684.30	-220.62	3,690.90	183.43	442,558.83	786,132.85
13,043.00	88.60	178.20	9,444.84	3,776.50	-3,779.27	-218.80	3,785.60	183.31	442,463.86	786,134.67
13,138.00	88.90	178.50	9,446.91	3,871.47	-3,874.21	-216.06	3,880.23	183.19	442,368.92	786,137.41
13,234.00	85.90	178.40	9,451.27	3,967.35	-3,970.07	-213.47	3,975.80	183.08	442,273.06	786,140.00
13,329.00	86.60	178.30	9,457.48	4,062.13	-4,064.82	-210.74	4,070.28	182.97	442,178.31	786,142.73
13,424.00	87.60	179.20	9,462.29	4,157.00	-4,159.68	-208.67	4,164.91	182.87	442,083.45	786,144.80
13,519.00	89.10	180.00	9,465.02	4,251.95	-4,254.63	-208.01	4,259.71	182.80	441,988.50	786,145.46
13,614.00	90.00	180.00	9,465.77	4,346.94	-4,349.63	-208.01	4,354.60	182.74	441,893.50	786,145.46
13,709.00	91.00	179.90	9,464.94	4,441.93	-4,444.62	-207.92	4,449.48	182.68	441,798.51	786,145.55
13,804.00	89.10	180.40	9,464.86	4,536.92	-4,539.62	-208.17	4,544.39	182.63	441,703.51	786,145.30
13,899.00	89.20	179.70	9,466.27	4,631.90	-4,634.61	-208.26	4,639.28	182.57	441,608.52	786,145.21
13,994.00	89.30	180.00	9,467.51	4,726.89	-4,729.60	-208.01	4,734.17	182.52	441,513.53	786,145.46
14,089.00	89.40	180.80	9,468.59	4,821.87	-4,824.59	-208.67	4,829.10	182.48	441,418.54	786,144.80
14,184.00	89.80	180.80	9,469.25	4,916.83	-4,919.58	-210.00	4,924.06	182.44	441,323.55	786,143.47



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 1H
Wellbore: OH
Design: MWD 148'-19225', PTB 19300'

Local Co-ordinate Reference: Well 1H
TVD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
MD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
14,282.00	91.30	182.10	9,468.31	5,014.76	-5,017.54	-212.48	5,022.03	182.42	441,225.59	786,140.99	
14,377.00	90.80	182.00	9,466.57	5,109.63	-5,112.46	-215.87	5,117.02	182.42	441,130.67	786,137.60	
14,472.00	88.40	180.10	9,467.23	5,204.58	-5,207.43	-217.61	5,211.98	182.39	441,035.70	786,135.86	
14,567.00	88.50	179.80	9,469.80	5,299.54	-5,302.40	-217.53	5,306.86	182.35	440,940.73	786,135.94	
14,662.00	88.20	179.00	9,472.54	5,394.50	-5,397.35	-216.54	5,401.69	182.30	440,845.78	786,136.93	
14,757.00	88.70	177.00	9,475.11	5,489.43	-5,492.25	-213.22	5,496.39	182.22	440,750.88	786,140.25	
14,852.00	90.40	177.30	9,475.85	5,584.36	-5,587.13	-208.50	5,591.02	182.14	440,656.00	786,144.97	
14,947.00	89.80	176.20	9,475.69	5,679.26	-5,681.97	-203.11	5,685.60	182.05	440,561.16	786,150.36	
15,042.00	90.70	176.50	9,475.27	5,774.13	-5,776.78	-197.07	5,780.14	181.95	440,466.35	786,156.40	
15,137.00	92.20	177.30	9,472.87	5,869.01	-5,871.61	-191.93	5,874.74	181.87	440,371.52	786,161.54	
15,232.00	93.40	177.90	9,468.23	5,963.85	-5,966.41	-187.96	5,969.37	181.80	440,276.72	786,165.51	
15,327.00	92.80	178.70	9,463.09	6,058.69	-6,061.23	-185.14	6,064.05	181.75	440,181.90	786,168.33	
15,423.00	90.60	178.90	9,460.24	6,154.64	-6,157.16	-183.13	6,159.88	181.70	440,085.97	786,170.34	
15,518.00	88.20	179.90	9,461.24	6,249.62	-6,252.14	-182.14	6,254.79	181.67	439,990.99	786,171.33	
15,613.00	87.70	179.90	9,464.64	6,344.56	-6,347.08	-181.97	6,349.68	181.64	439,896.05	786,171.50	
15,708.00	88.80	179.30	9,467.54	6,439.51	-6,442.03	-181.31	6,444.58	181.61	439,801.10	786,172.16	
15,803.00	90.00	179.70	9,468.53	6,534.50	-6,537.02	-180.48	6,539.51	181.58	439,706.11	786,172.99	
15,898.00	90.80	179.60	9,467.87	6,629.50	-6,632.01	-179.90	6,634.45	181.55	439,611.12	786,173.57	
15,994.00	89.50	179.70	9,467.62	6,725.50	-6,728.01	-179.31	6,730.40	181.53	439,515.12	786,174.16	
16,089.00	87.10	179.30	9,470.44	6,820.45	-6,822.96	-178.49	6,825.29	181.50	439,420.17	786,174.98	
16,184.00	86.70	179.20	9,475.57	6,915.31	-6,917.81	-177.24	6,920.08	181.47	439,325.32	786,176.23	
16,279.00	87.40	179.40	9,480.46	7,010.18	-7,012.67	-176.09	7,014.88	181.44	439,230.46	786,177.38	
16,374.00	88.40	179.10	9,483.94	7,105.12	-7,107.60	-174.84	7,109.75	181.41	439,135.53	786,178.63	
16,469.00	89.30	178.70	9,485.85	7,200.09	-7,202.56	-173.02	7,204.64	181.38	439,040.57	786,180.45	
16,565.00	89.80	179.00	9,486.60	7,296.09	-7,298.54	-171.09	7,300.55	181.34	438,944.59	786,182.38	
16,660.00	89.40	178.10	9,487.27	7,391.07	-7,393.51	-168.69	7,395.43	181.31	438,849.62	786,184.78	
16,755.00	89.70	178.10	9,488.01	7,486.05	-7,488.45	-165.54	7,490.28	181.27	438,754.68	786,187.93	



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 1H
Wellbore: OH
Design: MWD 148'-19225', PTB 19300'

Local Co-ordinate Reference: Well 1H
TVD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
MD Reference: GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
16,850.00	89.30	177.90	9,488.84	7,581.02	-7,583.39	-162.22	7,585.12	181.23	438,659.74	786,191.25
16,945.00	88.60	177.60	9,490.58	7,675.96	-7,678.30	-158.49	7,679.94	181.18	438,564.83	786,194.98
17,041.00	89.20	177.90	9,492.43	7,771.91	-7,774.21	-154.73	7,775.75	181.14	438,468.92	786,198.74
17,136.00	89.90	178.40	9,493.17	7,866.89	-7,869.15	-151.66	7,870.62	181.10	438,373.98	786,201.81
17,231.00	91.00	178.70	9,492.43	7,961.87	-7,964.12	-149.26	7,965.52	181.07	438,279.01	786,204.21
17,326.00	91.30	178.80	9,490.52	8,056.85	-8,059.08	-147.18	8,060.42	181.05	438,184.05	786,206.29
17,421.00	92.40	178.80	9,487.45	8,151.79	-8,154.01	-145.20	8,155.30	181.02	438,089.12	786,208.27
17,516.00	90.60	178.80	9,484.97	8,246.75	-8,248.95	-143.21	8,250.19	180.99	437,994.18	786,210.26
17,611.00	88.30	179.30	9,485.88	8,341.74	-8,343.92	-141.63	8,345.13	180.97	437,899.21	786,211.84
17,706.00	88.70	179.50	9,488.37	8,436.71	-8,438.89	-140.64	8,440.06	180.95	437,804.24	786,212.83
17,801.00	86.40	179.60	9,492.43	8,531.61	-8,533.79	-139.89	8,534.94	180.94	437,709.34	786,213.58
17,896.00	86.20	179.60	9,498.56	8,626.41	-8,628.59	-139.23	8,629.71	180.92	437,614.54	786,214.24
17,992.00	88.20	180.40	9,503.25	8,722.29	-8,724.47	-139.23	8,725.58	180.91	437,518.66	786,214.24
18,087.00	89.00	179.70	9,505.57	8,817.25	-8,819.44	-139.31	8,820.54	180.90	437,423.69	786,214.16
18,182.00	88.80	178.50	9,507.39	8,912.23	-8,914.41	-137.82	8,915.47	180.89	437,328.72	786,215.65
18,277.00	90.10	179.60	9,508.30	9,007.22	-9,009.39	-136.25	9,010.42	180.87	437,233.74	786,217.22
18,376.00	90.40	179.60	9,507.87	9,106.22	-9,108.38	-135.56	9,109.39	180.85	437,134.75	786,217.91
18,471.00	91.30	179.70	9,506.46	9,201.21	-9,203.37	-134.98	9,204.36	180.84	437,039.76	786,218.49
18,566.00	90.50	180.10	9,504.97	9,296.19	-9,298.36	-134.81	9,299.34	180.83	436,944.77	786,218.66
18,660.00	87.90	180.10	9,506.28	9,390.16	-9,392.34	-134.97	9,393.31	180.82	436,850.79	786,218.50
18,755.00	87.30	179.80	9,510.26	9,485.07	-9,487.26	-134.89	9,488.22	180.81	436,755.87	786,218.58
18,849.00	88.20	180.10	9,513.95	9,578.99	-9,581.18	-134.81	9,582.13	180.81	436,661.95	786,218.66
18,943.00	89.30	181.70	9,516.00	9,672.93	-9,675.14	-136.28	9,676.10	180.81	436,567.99	786,217.19
19,037.00	89.30	182.30	9,517.15	9,766.82	-9,769.08	-139.57	9,770.08	180.82	436,474.05	786,213.90
19,131.00	90.20	183.10	9,517.56	9,860.66	-9,862.97	-143.99	9,864.02	180.84	436,380.16	786,209.48
19,225.00	90.80	183.40	9,516.74	9,954.44	-9,956.82	-149.32	9,957.94	180.86	436,286.31	786,204.15

Final Survey: 19225' MD



ProDirectional
Survey Report



Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 1H
Project:	Lea County, NM (NAD83)	TVD Reference:	GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
Site:	Boomslang 14-23 Fed	MD Reference:	GL 3602'+KB 21' @ 3623.00usft (Patterson 364)
Well:	1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD 148'-19225', PTB 19300'	Database:	WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
19,300.00	90.80	183.40	9,515.69	10,029.24	-10,031.68	-153.77	10,032.86	180.88	436,211.45	786,199.70
Final TD: 19300' MD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
148.00	148.00	-0.47	0.22	Pro MWD First Survey: 148' MD
19,225.00	9,516.74	-9,956.82	-149.32	Final Survey: 19225' MD
19,300.00	9,515.69	-10,031.68	-153.77	Final TD: 19300' MD