



HOBBS OCD
MAY 04 2018
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Boomslang 14-23 Fed No. 2H

Lea County, NM

November 09, 2017

Job No. LNM5153117

Survey Completion Report



PRODIRECTIONAL

Survey Certification Letter

November 09, 2017



Operator Name: Devon Energy Corp.
Well Name: Boomslang 14-23 Fed No. 2H
County/Parish: Lea County,
State: NM
Rig Name: Patterson 364
Job Number: LNM5153117

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	1,533' MD – 19,372' MD	19,432' MD	10/06/17 – 10/17/17	MWD

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

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

prodirectional.com



Devon Energy Corp.

Lea County, NM
Boomslang 14-23 Fed
No. 2H
OH

Survey: ProDirectional

Survey Report

09 November, 2017





ProDirectional
Survey Report



Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD83)	TVD Reference:	GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
Site:	Boomslang 14-23 Fed	MD Reference:	GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
Well:	2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Surveys 1533'-19372'	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		2H				
Well Position	+N/-S	0.00 usft	Northing:	446,204.70 usft	Latitude:	32.2242469
	+E/-W	0.00 usft	Easting:	784,509.02 usft	Longitude:	-103.5469697
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,600.00 usft	

Wellbore	OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)	
	HDGM	9/29/2017	6.82	60.00	48,095.70	

Design	Surveys 1533'-19372'				
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	180.00	



ProDirectional
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Local Co-ordinate Reference: Well 2H
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey Program Date 11/9/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
97.00	1,407.00	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
1,533.00	19,432.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

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	446,204.70	784,509.02
97.00	0.70	336.95	97.00	-0.55	0.55	-0.23	0.59	336.95	446,205.25	784,508.79
187.00	0.50	337.95	186.99	-1.42	1.42	-0.59	1.53	337.21	446,206.12	784,508.43
270.00	0.50	357.95	269.99	-2.11	2.11	-0.74	2.24	340.61	446,206.81	784,508.28
364.00	0.70	336.95	363.98	-3.05	3.05	-0.98	3.21	342.14	446,207.75	784,508.04
458.00	0.80	328.95	457.98	-4.14	4.14	-1.55	4.42	339.53	446,208.84	784,507.47
557.00	0.30	297.95	556.97	-4.86	4.86	-2.13	5.30	336.29	446,209.56	784,506.89
648.00	0.30	297.95	647.97	-5.08	5.08	-2.55	5.68	333.31	446,209.78	784,506.47
743.00	0.60	355.95	742.97	-5.69	5.69	-2.81	6.35	333.74	446,210.39	784,506.21
837.00	0.50	300.95	836.96	-6.39	6.39	-3.19	7.15	333.45	446,211.09	784,505.83
932.00	0.60	336.95	931.96	-7.06	7.06	-3.74	7.99	332.07	446,211.76	784,505.28
1,133.00	0.60	293.95	1,132.95	-8.46	8.46	-5.12	9.89	328.83	446,213.16	784,503.90
1,233.00	0.40	337.95	1,232.95	-9.00	9.00	-5.73	10.66	327.51	446,213.70	784,503.29
1,333.00	0.40	353.95	1,332.94	-9.67	9.67	-5.90	11.32	328.62	446,214.37	784,503.12
1,407.00	0.40	310.95	1,406.94	-10.09	10.09	-6.12	11.80	328.78	446,214.79	784,502.90
1,533.00	0.50	327.10	1,532.94	-10.84	10.84	-6.75	12.77	328.10	446,215.54	784,502.27
First Pro Survey: 1533' MD										
1,624.00	0.50	320.40	1,623.94	-11.48	11.48	-7.22	13.56	327.85	446,216.18	784,501.80
1,717.00	0.50	316.00	1,716.93	-12.09	12.09	-7.76	14.36	327.30	446,216.79	784,501.26
1,812.00	1.00	84.30	1,811.93	-12.47	12.47	-7.22	14.41	329.92	446,217.17	784,501.80
1,907.00	2.30	93.20	1,906.89	-12.44	12.44	-4.49	13.23	340.15	446,217.14	784,504.53



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 2H
Wellbore: OH
Design: Surveys 1533'-19372'

Local Co-ordinate Reference: Well 2H
TVD Reference: GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
MD Reference: GL 3600'+KB 21' @ 3621.00usft (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)
2,002.00	3.30	89.70	2,001.77	-12.35	12.35	0.14	12.35	0.67	446,217.05	784,509.16
2,096.00	4.30	91.80	2,095.56	-12.25	12.25	6.37	13.81	27.48	446,216.95	784,515.39
2,191.00	5.30	90.60	2,190.23	-12.10	12.10	14.32	18.75	49.81	446,216.80	784,523.34
2,286.00	6.50	89.30	2,284.72	-12.12	12.12	24.08	26.96	63.30	446,216.82	784,533.10
2,380.00	7.40	88.10	2,378.03	-12.38	12.38	35.46	37.55	70.75	446,217.08	784,544.48
2,475.00	8.30	86.60	2,472.14	-12.99	12.99	48.41	50.13	74.98	446,217.69	784,557.43
2,570.00	8.30	85.00	2,566.15	-14.00	14.00	62.09	63.65	77.30	446,218.70	784,571.11
2,665.00	8.10	83.10	2,660.18	-15.40	15.40	75.57	77.12	78.48	446,220.10	784,584.59
2,760.00	7.90	82.60	2,754.25	-17.04	17.04	88.68	90.31	79.12	446,221.74	784,597.70
2,855.00	7.40	80.80	2,848.41	-18.86	18.86	101.20	102.94	79.44	446,223.56	784,610.22
2,950.00	7.60	81.60	2,942.59	-20.76	20.76	113.45	115.33	79.63	446,225.46	784,622.47
3,045.00	7.80	81.60	3,036.74	-22.62	22.62	126.04	128.06	79.83	446,227.32	784,635.06
3,140.00	7.90	80.40	3,130.85	-24.65	24.65	138.86	141.03	79.94	446,229.35	784,647.88
3,235.00	7.40	78.80	3,225.00	-26.92	26.92	151.30	153.67	79.91	446,231.62	784,660.32
3,330.00	7.80	80.80	3,319.17	-29.14	29.14	163.66	166.24	79.90	446,233.84	784,672.68
3,424.00	7.70	81.90	3,412.31	-31.05	31.05	176.19	178.91	80.01	446,235.75	784,685.21
3,519.00	7.40	79.30	3,506.48	-33.08	33.08	188.51	191.39	80.05	446,237.78	784,697.53
3,614.00	7.90	78.40	3,600.64	-35.53	35.53	200.91	204.03	79.97	446,240.23	784,709.93
3,709.00	8.20	81.70	3,694.70	-37.82	37.82	214.01	217.33	79.98	446,242.52	784,723.03
3,804.00	7.90	82.70	3,788.77	-39.63	39.63	227.19	230.62	80.11	446,244.33	784,736.21
3,899.00	6.90	82.80	3,882.97	-41.17	41.17	239.33	242.84	80.24	446,245.87	784,748.35
3,993.00	6.60	83.40	3,976.32	-42.50	42.50	250.30	253.88	80.36	446,247.20	784,759.32
4,088.00	6.20	85.10	4,070.73	-43.57	43.57	260.83	264.44	80.52	446,248.27	784,769.85
4,182.00	5.70	86.50	4,164.22	-44.29	44.29	270.55	274.15	80.70	446,248.99	784,779.57
4,277.00	6.30	86.90	4,258.70	-44.86	44.86	280.46	284.03	80.91	446,249.56	784,789.48
4,372.00	7.00	84.70	4,353.06	-45.67	45.67	291.43	294.99	81.09	446,250.37	784,800.45
4,467.00	7.80	82.90	4,447.27	-47.01	47.01	303.59	307.21	81.20	446,251.71	784,812.61



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Survey Report



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Site: Boomslang 14-23 Fed
Well: 2H
Wellbore: OH
Design: Surveys 1533'-19372'

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well 2H
GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
Grid
Minimum Curvature
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)	
4,562.00	8.10	85.70	4,541.36	-48.30	48.30	316.66	320.33	81.33	446,253.00	784,825.68	
4,657.00	7.80	86.80	4,635.44	-49.17	49.17	329.77	333.42	81.52	446,253.87	784,838.79	
4,752.00	7.60	88.40	4,729.59	-49.70	49.70	342.49	346.08	81.74	446,254.40	784,851.51	
4,847.00	7.60	92.40	4,823.75	-49.61	49.61	355.05	358.50	82.05	446,254.31	784,864.07	
4,942.00	8.20	90.70	4,917.85	-49.27	49.27	368.10	371.38	82.38	446,253.97	784,877.12	
5,037.00	7.90	90.40	5,011.92	-49.14	49.14	381.40	384.55	82.66	446,253.84	784,890.42	
5,132.00	7.30	89.70	5,106.08	-49.12	49.12	393.96	397.02	82.89	446,253.82	784,902.98	
5,155.00	7.10	89.20	5,128.90	-49.15	49.15	396.85	399.88	82.94	446,253.85	784,905.87	
5,215.00	6.60	88.20	5,188.47	-49.31	49.31	404.00	407.00	83.04	446,254.01	784,913.02	
5,309.00	6.00	85.20	5,281.90	-49.89	49.89	414.30	417.29	83.13	446,254.59	784,923.32	
5,404.00	6.90	84.40	5,376.30	-50.87	50.87	424.92	427.96	83.17	446,255.57	784,933.94	
5,499.00	8.80	83.30	5,470.41	-52.27	52.27	437.82	440.93	83.19	446,256.97	784,946.84	
5,594.00	9.10	82.30	5,564.25	-54.12	54.12	452.48	455.71	83.18	446,258.82	784,961.50	
5,688.00	9.00	82.30	5,657.08	-56.11	56.11	467.14	470.49	83.15	446,260.81	784,976.16	
5,783.00	9.40	81.80	5,750.86	-58.21	58.21	482.18	485.68	83.12	446,262.91	784,991.20	
5,878.00	9.40	82.50	5,844.58	-60.33	60.33	497.55	501.19	83.09	446,265.03	785,006.57	
5,973.00	9.60	82.10	5,938.28	-62.43	62.43	513.09	516.87	83.06	446,267.13	785,022.11	
6,067.00	10.10	80.20	6,030.89	-64.91	64.91	528.97	532.94	83.00	446,269.61	785,037.99	
6,162.00	9.10	80.50	6,124.56	-67.57	67.57	544.59	548.77	82.93	446,272.27	785,053.61	
6,257.00	8.10	80.30	6,218.49	-69.93	69.93	558.60	562.96	82.86	446,274.63	785,067.62	
6,352.00	8.20	79.40	6,312.53	-72.31	72.31	571.85	576.41	82.79	446,277.01	785,080.87	
6,447.00	8.00	78.70	6,406.59	-74.85	74.85	585.00	589.76	82.71	446,279.55	785,094.02	
6,542.00	8.00	77.30	6,500.66	-77.60	77.60	597.93	602.94	82.61	446,282.30	785,106.95	
6,637.00	8.40	77.30	6,594.69	-80.58	80.58	611.15	616.43	82.49	446,285.28	785,120.17	
6,732.00	8.60	77.80	6,688.65	-83.60	83.60	624.86	630.42	82.38	446,288.30	785,133.88	
6,827.00	8.40	77.90	6,782.60	-86.56	86.56	638.58	644.42	82.28	446,291.26	785,147.60	
6,922.00	7.70	78.40	6,876.67	-89.29	89.29	651.60	657.69	82.20	446,293.99	785,160.62	



ProDirectional
Survey Report



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Well: 2H
Wellbore: OH
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Local Co-ordinate Reference:
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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)	
7,017.00	7.50	80.70	6,970.83	-91.58	91.58	663.96	670.24	82.15	446,296.28	785,172.98	
7,112.00	7.60	84.00	7,065.01	-93.23	93.23	676.32	682.72	82.15	446,297.93	785,185.34	
7,207.00	7.50	86.10	7,159.18	-94.31	94.31	688.76	695.18	82.20	446,299.01	785,197.78	
7,302.00	7.40	87.00	7,253.38	-95.05	95.05	701.05	707.47	82.28	446,299.75	785,210.07	
7,397.00	7.20	88.20	7,347.61	-95.56	95.56	713.11	719.49	82.37	446,300.26	785,222.13	
7,492.00	7.00	90.50	7,441.88	-95.70	95.70	724.85	731.14	82.48	446,300.40	785,233.87	
7,587.00	6.70	89.50	7,536.21	-95.70	95.70	736.18	742.37	82.59	446,300.40	785,245.20	
7,682.00	6.20	90.00	7,630.60	-95.74	95.74	746.85	752.96	82.69	446,300.44	785,255.87	
7,777.00	6.20	90.60	7,725.05	-95.69	95.69	757.11	763.13	82.80	446,300.39	785,266.13	
7,872.00	5.40	89.80	7,819.56	-95.65	95.65	766.71	772.66	82.89	446,300.35	785,275.73	
7,967.00	4.60	92.70	7,914.20	-95.49	95.49	774.99	780.85	82.98	446,300.19	785,284.01	
8,062.00	3.50	98.90	8,008.96	-94.86	94.86	781.66	787.39	83.08	446,299.56	785,290.68	
8,157.00	2.30	105.60	8,103.84	-93.90	93.90	786.36	791.94	83.19	446,298.60	785,295.38	
8,252.00	1.80	106.90	8,198.78	-92.95	92.95	789.62	795.07	83.29	446,297.65	785,298.64	
8,347.00	1.80	116.20	8,293.73	-91.86	91.86	792.39	797.70	83.39	446,296.56	785,301.41	
8,443.00	0.80	134.80	8,389.70	-90.72	90.72	794.22	799.38	83.48	446,295.42	785,303.24	
8,537.00	0.80	128.70	8,483.70	-89.85	89.85	795.19	800.25	83.55	446,294.55	785,304.21	
8,632.00	1.00	122.60	8,578.68	-88.99	88.99	796.41	801.37	83.62	446,293.69	785,305.43	
8,727.00	1.20	123.40	8,673.67	-87.99	87.99	797.94	802.78	83.71	446,292.69	785,306.96	
8,822.00	1.60	123.70	8,768.64	-86.71	86.71	799.87	804.56	83.81	446,291.41	785,308.89	
8,918.00	2.60	147.40	8,864.57	-84.13	84.13	802.16	806.56	84.01	446,288.83	785,311.18	
9,013.00	13.30	176.60	8,958.55	-71.37	71.37	803.98	807.14	84.93	446,276.07	785,313.00	
9,108.00	21.50	175.90	9,049.12	-43.05	43.05	805.87	807.02	86.94	446,247.75	785,314.89	
9,203.00	30.10	179.50	9,134.58	-1.78	1.78	807.33	807.33	89.87	446,206.48	785,316.35	
9,298.00	39.00	182.40	9,212.75	52.02	-52.02	806.28	807.96	93.69	446,152.68	785,315.30	
9,366.00	46.94	180.89	9,262.46	98.31	-98.31	805.00	810.98	96.96	446,106.39	785,314.02	
FTP Line: 9366' MD											



ProDirectional Survey Report



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Site: Boomslang 14-23 Fed
Well: 2H
Wellbore: OH
Design: Surveys 1533'-19372'

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Survey											
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9,393.00	50.10	180.40	9,280.35	118.53	-118.53	804.77	813.45	98.38	446,086.17	785,313.79	
9,440.00	56.20	177.40	9,308.52	156.11	-156.11	805.53	820.52	100.97	446,048.59	785,314.55	
9,488.00	63.00	178.40	9,332.80	197.46	-197.46	807.03	830.84	103.75	446,007.24	785,316.05	
9,535.00	64.80	179.30	9,353.48	239.66	-239.66	807.88	842.68	106.52	445,965.04	785,316.90	
9,582.00	68.80	181.20	9,371.99	282.84	-282.84	807.68	855.77	109.30	445,921.86	785,316.70	
9,629.00	70.70	181.80	9,388.26	326.92	-326.92	806.52	870.26	112.06	445,877.78	785,315.54	
9,677.00	75.00	180.70	9,402.41	372.76	-372.76	805.53	887.60	114.83	445,831.94	785,314.55	
9,724.00	80.30	180.80	9,412.46	418.66	-418.66	804.93	907.29	117.48	445,786.04	785,313.95	
9,772.00	84.10	180.90	9,418.97	466.20	-466.20	804.22	929.58	120.10	445,738.50	785,313.24	
9,822.00	89.60	179.50	9,421.72	516.10	-516.10	804.05	955.44	122.70	445,688.60	785,313.07	
9,847.00	90.20	179.00	9,421.76	541.10	-541.10	804.38	969.44	123.93	445,663.60	785,313.40	
9,943.00	89.10	179.20	9,422.35	637.08	-637.08	805.89	1,027.29	128.33	445,567.62	785,314.91	
10,038.00	88.30	178.10	9,424.50	732.03	-732.03	808.12	1,090.38	132.17	445,472.67	785,317.14	
10,133.00	89.00	177.70	9,426.74	826.94	-826.94	811.60	1,158.68	135.54	445,377.76	785,320.62	
10,228.00	89.40	178.80	9,428.07	921.88	-921.88	814.50	1,230.16	138.54	445,282.82	785,323.52	
10,323.00	87.90	179.30	9,430.30	1,016.84	-1,016.84	816.08	1,303.82	141.25	445,187.86	785,325.10	
10,418.00	86.40	178.80	9,435.03	1,111.71	-1,111.71	817.65	1,380.02	143.67	445,092.99	785,326.67	
10,513.00	86.60	178.40	9,440.83	1,206.50	-1,206.50	819.97	1,458.77	145.80	444,998.20	785,328.99	
10,608.00	87.50	178.30	9,445.72	1,301.34	-1,301.34	822.70	1,539.58	147.70	444,903.36	785,331.72	
10,700.00	87.50	179.30	9,449.73	1,393.23	-1,393.23	824.62	1,618.98	149.38	444,811.47	785,333.64	
10,791.00	86.10	180.20	9,454.81	1,484.08	-1,484.08	825.02	1,697.99	150.93	444,720.62	785,334.04	
10,884.00	85.90	179.80	9,461.30	1,576.86	-1,576.86	825.02	1,779.64	152.38	444,627.84	785,334.04	
10,975.00	86.80	180.50	9,467.09	1,667.67	-1,667.67	824.78	1,860.48	153.68	444,537.03	785,333.80	
11,066.00	88.10	181.30	9,471.14	1,758.56	-1,758.56	823.36	1,941.77	154.91	444,446.14	785,332.38	
11,157.00	88.80	181.40	9,473.60	1,849.51	-1,849.51	821.21	2,023.63	156.06	444,355.19	785,330.23	
11,249.00	89.20	180.90	9,475.21	1,941.47	-1,941.47	819.37	2,107.29	157.12	444,263.23	785,328.39	
11,340.00	90.20	180.90	9,475.68	2,032.46	-2,032.46	817.94	2,190.87	158.08	444,172.24	785,326.96	



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 2H
Wellbore: OH
Design: Surveys 1533'-19372'

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:
Well 2H
GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
Grid
Minimum Curvature
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)
11,431.00	91.10	181.00	9,474.65	2,123.44	-2,123.44	816.43	2,274.98	158.97	444,081.26	785,325.45
11,521.00	92.00	181.40	9,472.21	2,213.39	-2,213.39	814.54	2,358.51	159.80	443,991.31	785,323.56
11,612.00	91.00	181.40	9,469.83	2,304.33	-2,304.33	812.32	2,443.31	160.58	443,900.37	785,321.34
11,704.00	90.20	181.00	9,468.87	2,396.30	-2,396.30	810.39	2,529.62	161.32	443,808.40	785,319.41
11,796.00	89.40	180.90	9,469.19	2,488.29	-2,488.29	808.87	2,616.46	161.99	443,716.41	785,317.89
11,887.00	89.70	181.40	9,469.91	2,579.26	-2,579.26	807.04	2,702.58	162.63	443,625.44	785,316.06
11,979.00	86.80	179.50	9,472.71	2,671.20	-2,671.20	806.32	2,790.25	163.20	443,533.50	785,315.34
12,074.00	86.20	179.20	9,478.51	2,766.02	-2,766.02	807.40	2,881.45	163.73	443,438.68	785,316.42
12,169.00	86.10	179.70	9,484.89	2,860.80	-2,860.80	808.31	2,972.80	164.22	443,343.90	785,317.33
12,264.00	85.80	179.70	9,491.60	2,955.56	-2,955.56	808.80	3,064.23	164.70	443,249.14	785,317.82
12,358.00	87.70	179.10	9,496.93	3,049.40	-3,049.40	809.78	3,155.09	165.13	443,155.30	785,318.80
12,453.00	89.80	178.10	9,499.00	3,144.34	-3,144.34	812.11	3,247.53	165.52	443,060.36	785,321.13
12,548.00	89.40	177.10	9,499.67	3,239.26	-3,239.26	816.08	3,340.48	165.86	442,965.44	785,325.10
12,643.00	90.30	177.80	9,499.92	3,334.16	-3,334.16	820.31	3,433.59	166.18	442,870.54	785,329.33
12,738.00	91.10	179.90	9,498.76	3,429.13	-3,429.13	822.22	3,526.33	166.52	442,775.57	785,331.24
12,833.00	92.00	180.30	9,496.19	3,524.09	-3,524.09	822.05	3,618.70	166.87	442,680.61	785,331.07
12,928.00	90.60	179.50	9,494.03	3,619.07	-3,619.07	822.22	3,711.29	167.20	442,585.63	785,331.24
13,024.00	90.30	180.30	9,493.28	3,715.06	-3,715.06	822.38	3,805.00	167.52	442,489.64	785,331.40
13,119.00	88.90	180.40	9,493.94	3,810.06	-3,810.06	821.80	3,897.68	167.83	442,394.64	785,330.82
13,214.00	89.50	180.70	9,495.27	3,905.04	-3,905.04	820.89	3,990.39	168.13	442,299.66	785,329.91
13,309.00	87.30	180.60	9,497.92	3,999.99	-3,999.99	819.81	4,083.14	168.42	442,204.71	785,328.83
13,403.00	87.90	181.20	9,501.85	4,093.90	-4,093.90	818.34	4,174.89	168.70	442,110.80	785,327.36
13,498.00	88.00	182.40	9,505.25	4,188.79	-4,188.79	815.36	4,267.41	168.98	442,015.91	785,324.38
13,592.00	88.10	182.40	9,508.45	4,282.65	-4,282.65	811.42	4,358.84	169.27	441,922.05	785,320.44
13,688.00	88.00	181.90	9,511.72	4,378.53	-4,378.53	807.82	4,452.42	169.55	441,826.17	785,316.84
13,783.00	90.80	181.30	9,512.71	4,473.48	-4,473.48	805.17	4,545.36	169.80	441,731.22	785,314.19
13,878.00	91.00	181.10	9,511.22	4,568.44	-4,568.44	803.18	4,638.51	170.03	441,636.26	785,312.20



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 2H
Wellbore: OH
Design: Surveys 1533'-19372'

Local Co-ordinate Reference: Well 2H
TVD Reference: GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
MD Reference: GL 3600'+KB 21' @ 3621.00usft (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)	
13,972.00	92.70	181.30	9,508.19	4,662.37	-4,662.37	801.22	4,730.71	170.25	441,542.33	785,310.24	
14,067.00	92.30	181.60	9,504.04	4,757.25	-4,757.25	798.81	4,823.85	170.47	441,447.45	785,307.83	
14,162.00	90.80	181.30	9,501.47	4,852.18	-4,852.18	796.41	4,917.11	170.68	441,352.52	785,305.43	
14,257.00	90.70	178.90	9,500.23	4,947.17	-4,947.17	796.25	5,010.83	170.86	441,257.53	785,305.27	
14,352.00	90.00	177.00	9,499.65	5,042.10	-5,042.10	799.64	5,105.11	170.99	441,162.60	785,308.66	
14,446.00	91.10	177.00	9,498.75	5,135.96	-5,135.96	804.56	5,198.60	171.10	441,068.74	785,313.58	
14,541.00	88.70	177.90	9,498.91	5,230.86	-5,230.86	808.79	5,293.02	171.21	440,973.84	785,317.81	
14,637.00	89.10	178.20	9,500.76	5,326.79	-5,326.79	812.05	5,388.33	171.33	440,877.91	785,321.07	
14,731.00	89.60	178.60	9,501.82	5,420.74	-5,420.74	814.68	5,481.62	171.45	440,783.96	785,323.70	
14,826.00	91.90	180.00	9,500.58	5,515.72	-5,515.72	815.84	5,575.73	171.59	440,688.98	785,324.86	
14,921.00	91.60	180.80	9,497.68	5,610.67	-5,610.67	815.18	5,669.58	171.73	440,594.03	785,324.20	
15,016.00	90.00	180.40	9,496.35	5,705.65	-5,705.65	814.18	5,763.45	171.88	440,499.05	785,323.20	
15,109.00	89.10	181.10	9,497.08	5,798.64	-5,798.64	812.97	5,855.35	172.02	440,406.06	785,321.99	
15,204.00	87.60	180.60	9,499.82	5,893.59	-5,893.59	811.56	5,949.20	172.16	440,311.11	785,320.58	
15,299.00	88.60	179.80	9,502.97	5,988.53	-5,988.53	811.22	6,043.23	172.29	440,216.17	785,320.24	
15,394.00	91.20	177.90	9,503.13	6,083.50	-6,083.50	813.13	6,137.60	172.39	440,121.20	785,322.15	
15,488.00	89.40	177.60	9,502.64	6,177.43	-6,177.43	816.82	6,231.19	172.47	440,027.27	785,325.84	
15,583.00	88.80	178.60	9,504.13	6,272.36	-6,272.36	819.97	6,325.73	172.55	439,932.34	785,328.99	
15,678.00	88.00	178.50	9,506.78	6,367.29	-6,367.29	822.37	6,420.18	172.64	439,837.41	785,331.39	
15,772.00	87.70	178.00	9,510.31	6,461.18	-6,461.18	825.24	6,513.67	172.72	439,743.52	785,334.26	
15,868.00	88.80	179.40	9,513.24	6,557.11	-6,557.11	827.42	6,609.11	172.81	439,647.59	785,336.44	
15,962.00	88.90	179.80	9,515.13	6,651.09	-6,651.09	828.08	6,702.44	172.90	439,553.61	785,337.10	
16,057.00	88.50	178.90	9,517.28	6,746.05	-6,746.05	829.15	6,796.82	172.99	439,458.65	785,338.17	
16,152.00	89.40	180.40	9,519.03	6,841.03	-6,841.03	829.73	6,891.17	173.08	439,363.67	785,338.75	
16,248.00	90.60	181.20	9,519.03	6,937.02	-6,937.02	828.39	6,986.31	173.19	439,267.68	785,337.41	
16,343.00	90.50	180.70	9,518.11	7,032.00	-7,032.00	826.82	7,080.45	173.29	439,172.70	785,335.84	
16,438.00	91.20	180.90	9,516.70	7,126.98	-7,126.98	825.49	7,174.63	173.39	439,077.72	785,334.51	



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Boomslang 14-23 Fed
Well: 2H
Wellbore: OH
Design: Surveys 1533'-19372'

Local Co-ordinate Reference: Well 2H
TVD Reference: GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
MD Reference: GL 3600'+KB 21' @ 3621.00usft (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)
16,533.00	93.20	181.30		9,513.06	7,221.89	-7,221.89	823.67	7,268.71	173.49	438,982.81	785,332.69
16,628.00	91.80	180.70		9,508.91	7,316.78	-7,316.78	822.01	7,362.81	173.59	438,887.92	785,331.03
16,723.00	91.90	181.00		9,505.85	7,411.72	-7,411.72	820.60	7,457.01	173.68	438,792.98	785,329.62
16,819.00	89.20	180.80		9,504.93	7,507.70	-7,507.70	819.10	7,552.25	173.77	438,697.00	785,328.12
16,914.00	89.50	180.90		9,506.00	7,602.68	-7,602.68	817.69	7,646.53	173.86	438,602.02	785,326.71
17,009.00	90.90	180.30		9,505.67	7,697.67	-7,697.67	816.69	7,740.88	173.94	438,507.03	785,325.71
17,104.00	87.40	179.20		9,507.08	7,792.64	-7,792.64	817.11	7,835.37	174.01	438,412.06	785,326.13
17,198.00	86.50	178.60		9,512.08	7,886.49	-7,886.49	818.91	7,928.90	174.07	438,318.21	785,327.93
17,294.00	89.00	180.30		9,515.85	7,982.40	-7,982.40	819.83	8,024.39	174.14	438,222.30	785,328.85
17,388.00	90.40	181.30		9,516.34	8,076.39	-8,076.39	818.52	8,117.76	174.21	438,128.31	785,327.54
17,484.00	92.20	182.00		9,514.17	8,172.32	-8,172.32	815.75	8,212.93	174.30	438,032.38	785,324.77
17,579.00	92.30	182.30		9,510.44	8,267.18	-8,267.18	812.19	8,306.98	174.39	437,937.52	785,321.21
17,674.00	90.30	181.60		9,508.28	8,362.10	-8,362.10	808.96	8,401.13	174.47	437,842.60	785,317.98
17,769.00	90.00	180.60		9,508.03	8,457.08	-8,457.08	807.14	8,495.51	174.55	437,747.62	785,316.16
17,864.00	89.60	180.50		9,508.36	8,552.07	-8,552.07	806.22	8,589.99	174.61	437,652.63	785,315.24
17,959.00	90.70	180.60		9,508.11	8,647.07	-8,647.07	805.31	8,684.48	174.68	437,557.63	785,314.33
18,054.00	88.20	179.40		9,509.03	8,742.05	-8,742.05	805.31	8,779.07	174.74	437,462.65	785,314.33
18,149.00	87.80	178.50		9,512.34	8,836.98	-8,836.98	807.05	8,873.75	174.78	437,367.72	785,316.07
18,244.00	88.00	178.80		9,515.82	8,931.89	-8,931.89	809.29	8,968.47	174.82	437,272.81	785,318.31
18,339.00	90.10	179.40		9,517.40	9,026.86	-9,026.86	810.78	9,063.19	174.87	437,177.84	785,319.80
18,434.00	91.30	179.20		9,516.24	9,121.84	-9,121.84	811.94	9,157.90	174.91	437,082.86	785,320.96
18,529.00	93.20	179.30		9,512.51	9,216.75	-9,216.75	813.18	9,252.56	174.96	436,987.95	785,322.20
18,623.00	92.00	180.50		9,508.24	9,310.65	-9,310.65	813.35	9,346.11	175.01	436,894.05	785,322.37
18,718.00	91.70	180.70		9,505.18	9,405.60	-9,405.60	812.35	9,440.61	175.06	436,799.10	785,321.37
18,813.00	93.20	180.90		9,501.12	9,500.50	-9,500.50	811.03	9,535.05	175.12	436,704.20	785,320.05
18,908.00	91.80	181.60		9,496.97	9,595.38	-9,595.38	808.96	9,629.42	175.18	436,609.32	785,317.98
19,003.00	89.50	182.10		9,495.89	9,690.32	-9,690.32	805.89	9,723.77	175.25	436,514.38	785,314.91



ProDirectional
Survey Report



Company:	Devon Energy Corp.	Local Co-ordinate Reference:	Well 2H
Project:	Lea County, NM (NAD83)	TVD Reference:	GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
Site:	Boomslang 14-23 Fed	MD Reference:	GL 3600'+KB 21' @ 3621.00usft (Patterson 364)
Well:	2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Surveys 1533'-19372'	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)
19,098.00	90.20	182.30	9,496.14	9,785.25	-9,785.25	802.24	9,818.08	175.31	436,419.45	785,311.26
19,193.00	90.60	182.00	9,495.48	9,880.18	-9,880.18	798.68	9,912.41	175.38	436,324.52	785,307.70
19,288.00	92.00	181.50	9,493.32	9,975.11	-9,975.11	795.78	10,006.80	175.44	436,229.59	785,304.80
19,308.00	92.43	181.60	9,492.55	9,995.09	-9,995.09	795.24	10,026.67	175.45	436,209.61	785,304.26
LTP Line: 19308' MD										
19,372.00	93.80	181.90	9,489.08	10,058.96	-10,058.96	793.29	10,090.19	175.49	436,145.74	785,302.31
Final Survey: 19372' MD										
19,432.00	93.80	181.90	9,485.10	10,118.80	-10,118.80	791.31	10,149.69	175.53	436,085.90	785,300.33
Final TD: 19432' MD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,533.00	1,532.94	10.84	-6.75	First Pro Survey: 1533' MD
9,366.00	9,262.46	-98.31	805.00	FTP Line: 9366' MD
19,308.00	9,492.55	-9,995.09	795.24	LTP Line: 19308' MD
19,372.00	9,489.08	-10,058.96	793.29	Final Survey: 19372' MD
19,432.00	9,485.10	-10,118.80	791.31	Final TD: 19432' MD