



HOBBS OCD
DEC 12 2018
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Seawolf 1-12 Fed No. 85H

Lea County, NM

March 19, 2018

Job No. LNM5156817

Survey Completion Report



PRODIRECTIONAL

Survey Certification Letter

March 19, 2018



Operator Name: Devon Energy Corp.
Well Name: Seawolf 1-12 Fed No. 85H
County/Parish: Lea County,
State: NM
Rig Name: ICD 209
Job Number: LNM5156817

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	1,071' MD – 22,674' MD	22,730' MD	12/16/17 – 02/16/18	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
Seawolf 1-12 Fed
No. 85H
OH**

Survey: ProDirectional

Survey Report

19 March, 2018





ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 85H
Wellbore: OH
Design: Surveys 155-22730 MD

Local Co-ordinate Reference: Well 85H
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Project Lea County, NM (NAD83)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Seawolf 1-12 Fed

Site Position:	Northing:	393,524.42 usft	Latitude:	32.0792675
From: Map	Easting:	793,262.30 usft	Longitude:	-103.5199528
Position Uncertainty: 0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well 85H

Well Position	+N/-S	0.00 usft	Northing:	393,494.14 usft	Latitude:	32.0791853
	+E/-W	0.00 usft	Easting:	793,212.57 usft	Longitude:	-103.5201141
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,325.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/30/2017	6.78	59.80	47,914.00

Design Surveys 155-22730 MD

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	179.57	



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Survey Program		Date 3/19/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
155.20	1,010.20	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM	
1,071.00	22,730.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HDGM	

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	393,494.14	793,212.57
155.20	0.40	130.47	155.20	0.35	-0.35	0.41	0.54	130.47	393,493.79	793,212.98
245.10	0.10	190.47	245.10	0.64	-0.63	0.64	0.90	134.81	393,493.51	793,213.21
339.20	0.20	141.47	339.20	0.85	-0.84	0.72	1.11	139.30	393,493.30	793,213.29
433.20	0.20	226.47	433.20	1.09	-1.08	0.71	1.29	146.85	393,493.06	793,213.28
527.20	0.20	174.47	527.20	1.36	-1.36	0.60	1.49	156.04	393,492.78	793,213.17
622.20	0.30	160.47	622.20	1.76	-1.76	0.70	1.89	158.21	393,492.38	793,213.27
716.20	0.30	169.47	716.19	2.24	-2.23	0.83	2.38	159.60	393,491.91	793,213.40
810.20	0.40	164.47	810.19	2.80	-2.79	0.96	2.95	160.96	393,491.35	793,213.53
905.30	0.50	160.47	905.29	3.51	-3.50	1.19	3.70	161.22	393,490.64	793,213.76
999.80	0.20	177.47	999.79	4.06	-4.05	1.34	4.27	161.76	393,490.09	793,213.91
1,010.20	0.30	172.47	1,010.19	4.11	-4.10	1.34	4.31	161.90	393,490.04	793,213.91
1,071.00	0.30	154.40	1,070.99	4.41	-4.40	1.43	4.63	162.00	393,489.74	793,214.00
First Pro Survey: 1071' MD										
1,165.00	0.30	180.60	1,164.99	4.88	-4.87	1.53	5.11	162.52	393,489.27	793,214.10
1,259.00	0.40	158.60	1,258.98	5.43	-5.42	1.65	5.67	163.06	393,488.72	793,214.22
1,353.00	0.70	155.90	1,352.98	6.27	-6.25	2.01	6.56	162.21	393,487.89	793,214.58
1,446.00	0.50	199.70	1,445.97	7.17	-7.15	2.10	7.45	163.63	393,486.99	793,214.67
1,540.00	0.40	202.00	1,539.97	7.86	-7.84	1.84	8.05	166.80	393,486.30	793,214.41
1,632.00	0.20	230.60	1,631.97	8.25	-8.24	1.59	8.39	169.05	393,485.90	793,214.16
1,725.00	0.30	248.80	1,724.97	8.44	-8.43	1.24	8.52	171.62	393,485.71	793,213.81



ProDirectional Survey Report



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1,819.00	0.30	272.80	1,818.97	8.51	-8.51	0.77	8.54	174.85	393,485.63	793,213.34
1,913.00	0.40	257.80	1,912.97	8.57	-8.57	0.20	8.57	178.66	393,485.57	793,212.77
2,007.00	0.50	274.40	2,006.96	8.60	-8.60	-0.53	8.62	183.52	393,485.54	793,212.04
2,101.00	0.60	268.30	2,100.96	8.58	-8.59	-1.43	8.71	189.45	393,485.55	793,211.14
2,195.00	0.50	257.90	2,194.96	8.67	-8.69	-2.32	8.99	194.97	393,485.45	793,210.25
2,289.00	0.40	266.30	2,288.95	8.77	-8.80	-3.05	9.31	199.13	393,485.34	793,209.52
2,383.00	0.30	262.20	2,382.95	8.82	-8.85	-3.62	9.56	202.26	393,485.29	793,208.95
2,476.00	0.20	238.30	2,475.95	8.94	-8.97	-4.00	9.82	204.05	393,485.17	793,208.57
2,570.00	0.20	174.70	2,569.95	9.19	-9.22	-4.13	10.10	204.12	393,484.92	793,208.44
2,664.00	0.30	99.90	2,663.95	9.39	-9.42	-3.87	10.19	202.32	393,484.72	793,208.70
2,758.00	0.40	99.40	2,757.95	9.49	-9.52	-3.30	10.08	199.13	393,484.62	793,209.27
2,852.00	0.70	87.30	2,851.94	9.53	-9.55	-2.41	9.84	194.14	393,484.59	793,210.16
2,946.00	0.90	71.60	2,945.93	9.28	-9.29	-1.13	9.35	186.95	393,484.85	793,211.44
3,040.00	1.20	66.50	3,039.92	8.66	-8.66	0.47	8.67	176.88	393,485.48	793,213.04
3,134.00	1.70	61.70	3,133.89	7.63	-7.61	2.60	8.04	161.12	393,486.53	793,215.17
3,228.00	2.50	66.20	3,227.82	6.16	-6.12	5.71	8.37	137.00	393,488.02	793,218.28
3,322.00	2.30	80.20	3,321.74	5.04	-4.97	9.44	10.67	117.77	393,489.17	793,222.01
3,416.00	2.30	87.70	3,415.67	4.67	-4.57	13.18	13.95	109.13	393,489.57	793,225.75
3,510.00	1.90	82.30	3,509.60	4.41	-4.29	16.61	17.16	104.48	393,489.85	793,229.18
3,604.00	1.70	76.70	3,603.56	3.91	-3.76	19.51	19.87	100.90	393,490.38	793,232.08
3,698.00	1.70	82.10	3,697.52	3.41	-3.25	22.25	22.49	98.30	393,490.89	793,234.82
3,791.00	1.70	86.30	3,790.47	3.16	-2.97	24.99	25.17	96.77	393,491.17	793,237.56
3,885.00	0.80	66.50	3,884.45	2.82	-2.62	26.99	27.11	95.54	393,491.52	793,239.56
3,979.00	0.90	30.40	3,978.44	1.93	-1.72	27.96	28.02	93.52	393,492.42	793,240.53
4,074.00	0.90	9.30	4,073.43	0.55	-0.34	28.46	28.46	90.68	393,493.80	793,241.03
4,168.00	1.30	312.00	4,167.42	-0.90	1.10	27.79	27.81	87.73	393,495.24	793,240.36
4,262.00	2.10	306.90	4,261.37	-2.66	2.85	25.62	25.78	83.65	393,496.99	793,238.19



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4,356.00	3.00	296.90	4,355.28	-4.83	5.00	22.05	22.61	77.23	393,499.14	793,234.62
4,450.00	3.70	301.70	4,449.12	-7.58	7.70	17.27	18.91	65.96	393,501.84	793,229.84
4,544.00	4.00	300.50	4,542.91	-10.87	10.96	11.87	16.16	47.27	393,505.10	793,224.44
4,639.00	4.80	296.90	4,637.63	-14.40	14.44	5.47	15.44	20.74	393,508.58	793,218.04
4,733.00	6.00	297.90	4,731.21	-18.54	18.52	-2.38	18.67	352.67	393,512.66	793,210.19
4,827.00	5.10	298.90	4,824.77	-22.92	22.84	-10.38	25.09	335.56	393,516.98	793,202.19
4,921.00	5.30	295.80	4,918.38	-26.88	26.75	-17.95	32.21	326.14	393,520.89	793,194.62
5,015.00	6.20	296.30	5,011.90	-31.08	30.89	-26.41	40.64	319.47	393,525.03	793,186.16
5,108.00	7.40	299.70	5,104.25	-36.35	36.08	-36.11	51.05	314.97	393,530.22	793,176.46
5,202.00	7.30	299.10	5,197.48	-42.33	41.98	-46.59	62.71	312.02	393,536.12	793,165.98
5,296.00	6.90	297.40	5,290.76	-47.91	47.49	-56.82	74.05	309.89	393,541.63	793,155.75
5,390.00	7.00	296.60	5,384.07	-53.15	52.65	-66.95	85.17	308.18	393,546.79	793,145.62
5,483.00	7.10	295.30	5,476.36	-58.22	57.64	-77.22	96.36	306.74	393,551.78	793,135.35
5,577.00	7.10	294.70	5,569.64	-63.21	62.55	-87.75	107.76	305.48	393,556.69	793,124.82
5,671.00	7.10	294.00	5,662.92	-68.08	67.34	-98.33	119.18	304.41	393,561.48	793,114.24
5,765.00	6.70	294.20	5,756.24	-72.77	71.95	-108.64	130.31	303.52	393,566.09	793,103.93
5,859.00	6.70	295.10	5,849.60	-77.42	76.53	-118.61	141.15	302.83	393,570.67	793,093.96
5,953.00	6.60	293.80	5,942.97	-82.00	81.03	-128.52	151.93	302.23	393,575.17	793,084.05
6,047.00	6.50	293.00	6,036.35	-86.33	85.29	-138.36	162.53	301.65	393,579.43	793,074.21
6,141.00	5.40	297.10	6,129.84	-90.49	89.39	-147.19	172.21	301.27	393,583.53	793,065.38
6,235.00	5.30	297.90	6,223.43	-94.59	93.43	-154.97	180.95	301.09	393,587.57	793,057.60
6,329.00	4.30	301.80	6,317.10	-98.53	97.32	-161.80	188.81	301.03	393,591.46	793,050.77
6,422.00	3.40	310.50	6,409.89	-102.20	100.95	-166.86	195.02	301.17	393,595.09	793,045.71
6,516.00	2.10	306.90	6,503.78	-105.07	103.79	-170.36	199.48	301.35	393,597.93	793,042.21
6,610.00	1.70	304.10	6,597.73	-106.90	105.61	-172.89	202.59	301.42	393,599.75	793,039.68
6,704.00	1.10	314.20	6,691.70	-108.33	107.02	-174.69	204.86	301.49	393,601.16	793,037.88
6,798.00	0.90	312.10	6,785.69	-109.46	108.14	-175.88	206.47	301.59	393,602.28	793,036.69



ProDirectional
Survey Report



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6,892.00	0.90	317.60	6,879.68	-110.51	109.19	-176.93	207.91	301.68	393,603.33	793,035.64
6,986.00	0.90	314.70	6,973.67	-111.58	110.25	-177.95	209.34	301.78	393,604.39	793,034.62
7,079.00	0.90	305.90	7,066.65	-112.53	111.19	-179.06	210.78	301.84	393,605.33	793,033.51
7,173.00	0.70	306.60	7,160.65	-113.32	111.97	-180.12	212.09	301.87	393,606.11	793,032.45
7,267.00	0.80	299.90	7,254.64	-113.99	112.64	-181.15	213.31	301.87	393,606.78	793,031.42
7,361.00	0.90	287.20	7,348.63	-114.55	113.18	-182.43	214.68	301.82	393,607.32	793,030.14
7,455.00	0.80	331.50	7,442.62	-115.35	113.98	-183.44	215.97	301.85	393,608.12	793,029.13
7,549.00	0.80	334.50	7,536.61	-116.52	115.15	-184.04	217.09	302.03	393,609.29	793,028.53
7,642.00	0.80	335.30	7,629.60	-117.70	116.32	-184.59	218.18	302.22	393,610.46	793,027.98
7,736.00	0.50	324.90	7,723.59	-118.64	117.25	-185.10	219.11	302.35	393,611.39	793,027.47
7,830.00	0.40	321.50	7,817.59	-119.23	117.85	-185.54	219.80	302.42	393,611.99	793,027.03
7,924.00	0.50	288.20	7,911.59	-119.62	118.23	-186.13	220.51	302.42	393,612.37	793,026.44
8,018.00	0.50	277.50	8,005.58	-119.81	118.41	-186.93	221.28	302.35	393,612.55	793,025.64
8,112.00	0.60	265.90	8,099.58	-119.84	118.43	-187.83	222.05	302.23	393,612.57	793,024.74
8,206.00	0.60	260.40	8,193.57	-119.73	118.31	-188.80	222.81	302.07	393,612.45	793,023.77
8,300.00	0.50	271.00	8,287.57	-119.66	118.24	-189.70	223.53	301.93	393,612.38	793,022.87
8,393.00	0.50	266.90	8,380.57	-119.65	118.22	-190.51	224.21	301.82	393,612.36	793,022.06
8,487.00	0.40	262.50	8,474.56	-119.59	118.16	-191.25	224.80	301.71	393,612.30	793,021.32
8,581.00	0.30	246.00	8,568.56	-119.45	118.02	-191.80	225.20	301.60	393,612.16	793,020.77
8,675.00	0.50	238.10	8,662.56	-119.14	117.70	-192.37	225.52	301.46	393,611.84	793,020.20
8,768.00	0.40	230.90	8,755.56	-118.72	117.28	-192.96	225.81	301.29	393,611.42	793,019.61
8,862.00	0.50	240.60	8,849.55	-118.32	116.87	-193.58	226.12	301.12	393,611.01	793,018.99
8,956.00	0.50	234.60	8,943.55	-117.89	116.43	-194.27	226.49	300.94	393,610.57	793,018.30
9,050.00	0.60	235.40	9,037.55	-117.38	115.92	-195.01	226.86	300.73	393,610.06	793,017.56
9,143.00	0.70	218.60	9,130.54	-116.66	115.19	-195.76	227.14	300.47	393,609.33	793,016.81
9,237.00	0.70	218.70	9,224.53	-115.77	114.30	-196.48	227.31	300.19	393,608.44	793,016.09
9,331.00	0.80	225.00	9,318.53	-114.86	113.39	-197.30	227.56	299.89	393,607.53	793,015.27



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9,425.00	0.70	233.30	9,412.52	-114.06	112.58	-198.23	227.97	299.59	393,606.72	793,014.34
9,519.00	0.70	227.80	9,506.51	-113.34	111.85	-199.11	228.38	299.32	393,605.99	793,013.46
9,623.00	0.50	230.50	9,610.50	-112.63	111.13	-199.93	228.75	299.07	393,605.27	793,012.64
9,717.00	0.40	274.10	9,704.50	-112.40	110.90	-200.58	229.19	298.94	393,605.04	793,011.99
9,811.00	0.40	303.60	9,798.50	-112.61	111.10	-201.18	229.82	298.91	393,605.24	793,011.39
9,905.00	0.30	319.10	9,892.50	-112.98	111.47	-201.61	230.38	298.94	393,605.61	793,010.96
9,998.00	0.40	326.90	9,985.50	-113.44	111.93	-201.95	230.89	299.00	393,606.07	793,010.62
10,092.00	0.40	325.70	10,079.49	-113.99	112.47	-202.31	231.47	299.07	393,606.61	793,010.26
10,186.00	0.80	305.90	10,173.49	-114.65	113.13	-203.03	232.42	299.13	393,607.27	793,009.54
10,280.00	0.90	288.10	10,267.48	-115.27	113.74	-204.26	233.80	299.11	393,607.88	793,008.31
10,374.00	0.80	348.30	10,361.47	-116.15	114.61	-205.10	234.95	299.20	393,608.75	793,007.47
10,468.00	0.70	325.00	10,455.46	-117.27	115.73	-205.56	235.90	299.38	393,609.87	793,007.01
10,562.00	1.30	320.50	10,549.45	-118.57	117.02	-206.57	237.41	299.53	393,611.16	793,006.00
10,656.00	1.40	331.80	10,643.42	-120.41	118.85	-207.79	239.38	299.77	393,612.99	793,004.78
10,750.00	1.60	62.00	10,737.40	-122.03	120.48	-207.17	239.66	300.18	393,614.62	793,005.40
10,844.00	1.20	167.30	10,831.38	-121.68	120.14	-205.80	238.30	300.28	393,614.28	793,006.77
10,938.00	2.10	212.00	10,925.35	-119.26	117.72	-206.49	237.69	299.69	393,611.86	793,006.08
11,031.00	0.90	237.60	11,018.31	-117.44	115.88	-208.01	238.11	299.12	393,610.02	793,004.56
11,125.00	1.00	280.00	11,112.30	-117.20	115.63	-209.44	239.24	298.90	393,609.77	793,003.13
11,219.00	1.90	284.20	11,206.27	-117.74	116.15	-211.76	241.53	298.74	393,610.29	793,000.81
11,314.00	2.40	296.70	11,301.20	-119.04	117.43	-215.07	245.04	298.64	393,611.57	792,997.50
11,408.00	1.40	293.00	11,395.15	-120.40	118.77	-217.88	248.15	298.59	393,612.91	792,994.69
11,502.00	1.60	259.60	11,489.12	-120.63	118.98	-220.23	250.31	298.38	393,613.12	792,992.34
11,596.00	1.00	263.50	11,583.10	-120.31	118.65	-222.34	252.01	298.09	393,612.79	792,990.23
11,690.00	1.50	266.90	11,677.07	-120.17	118.49	-224.38	253.74	297.84	393,612.63	792,988.19
11,784.00	1.80	266.40	11,771.03	-120.03	118.33	-227.08	256.06	297.52	393,612.47	792,985.49
11,878.00	1.30	279.30	11,865.00	-120.13	118.41	-229.61	258.34	297.28	393,612.55	792,982.96



ProDirectional Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 85H
Wellbore: OH
Design: Surveys 155-22730 MD

Local Co-ordinate Reference: Well 85H
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
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)
11,972.00	1.80	293.30	11,958.97	-120.90	119.16	-232.02	260.83	297.19	393,613.30	792,980.55
11,993.00	1.90	290.90	11,979.96	-121.16	119.42	-232.64	261.50	297.17	393,613.56	792,979.93
12,066.00	1.40	256.20	12,052.93	-121.40	119.64	-234.64	263.38	297.02	393,613.78	792,977.93
12,160.00	8.50	169.40	12,146.57	-114.28	112.52	-234.48	260.08	295.64	393,606.66	792,978.09
12,207.00	13.90	165.40	12,192.66	-105.38	103.64	-232.41	254.47	294.03	393,597.78	792,980.16
12,254.00	18.90	163.60	12,237.73	-92.58	90.87	-228.84	246.22	291.66	393,585.01	792,983.73
12,301.00	23.30	164.30	12,281.57	-76.29	74.61	-224.17	236.26	288.41	393,568.75	792,988.40
12,348.00	27.60	164.90	12,324.00	-56.78	55.14	-218.82	225.66	284.14	393,549.28	792,993.75
12,395.00	32.80	166.60	12,364.61	-33.82	32.23	-213.03	215.45	278.60	393,526.37	792,999.54
12,442.00	36.00	169.20	12,403.38	-7.82	6.27	-207.49	207.58	271.73	393,500.41	793,005.08
12,489.00	39.00	171.90	12,440.67	20.43	-21.95	-202.81	204.00	263.82	393,472.19	793,009.76
12,536.00	42.40	173.20	12,476.30	50.84	-52.34	-198.85	205.63	255.25	393,441.80	793,013.72
12,583.00	44.90	173.30	12,510.30	83.09	-84.55	-195.04	212.58	246.56	393,409.59	793,017.53
12,630.00	48.50	173.30	12,542.53	117.08	-118.52	-191.05	224.83	238.19	393,375.62	793,021.52
12,647.00	50.42	172.88	12,553.58	129.92	-131.34	-189.50	230.56	235.27	393,362.80	793,023.07
330' FNL: 12647' MD										
12,677.00	53.80	172.20	12,572.00	153.41	-154.81	-186.42	242.32	230.29	393,339.33	793,026.15
12,724.00	57.60	172.40	12,598.48	191.92	-193.28	-181.22	264.95	223.16	393,300.86	793,031.35
12,767.00	61.20	173.50	12,620.37	228.68	-230.01	-176.69	290.04	217.53	393,264.13	793,035.88
12,854.00	66.60	174.80	12,658.63	306.43	-307.70	-168.75	350.93	208.74	393,186.44	793,043.82
12,886.00	69.90	175.80	12,670.49	336.06	-337.32	-166.31	376.09	206.25	393,156.82	793,046.26
12,918.00	71.20	175.60	12,681.14	366.17	-367.41	-164.05	402.37	204.06	393,126.73	793,048.52
12,976.00	73.70	177.50	12,698.63	421.38	-422.60	-160.73	452.13	200.82	393,071.54	793,051.84
12,996.00	76.70	177.80	12,703.74	440.71	-441.92	-159.94	469.97	199.90	393,052.22	793,052.63
13,033.00	82.70	179.20	12,710.35	477.09	-478.29	-158.99	504.02	198.39	393,015.85	793,053.58
13,089.00	91.70	181.80	12,713.09	532.95	-534.16	-159.48	557.46	196.62	392,959.98	793,053.09
13,140.00	93.30	182.00	12,710.86	583.86	-585.08	-161.17	606.88	195.40	392,909.06	793,051.40



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 85H
Wellbore: OH
Design: Surveys 155-22730 MD

Local Co-ordinate Reference: Well 85H
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
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)
13,235.00	93.70	181.60	12,705.06	678.61	-679.86	-164.15	699.39	193.57	392,814.28	793,048.42
13,329.00	94.20	181.30	12,698.59	772.33	-773.60	-166.52	791.32	192.15	392,720.54	793,046.05
13,424.00	90.60	177.20	12,694.61	867.21	-868.48	-165.28	884.06	190.77	392,625.66	793,047.29
13,519.00	92.40	177.00	12,692.12	962.09	-963.32	-160.47	976.59	189.46	392,530.82	793,052.10
13,613.00	89.40	176.50	12,690.65	1,055.95	-1,057.15	-155.14	1,068.47	188.35	392,436.99	793,057.43
13,708.00	89.60	176.40	12,691.47	1,150.81	-1,151.96	-149.26	1,161.59	187.38	392,342.18	793,063.31
13,803.00	89.60	175.00	12,692.14	1,245.59	-1,246.69	-142.14	1,254.76	186.50	392,247.45	793,070.43
13,898.00	89.90	175.00	12,692.55	1,340.28	-1,341.32	-133.86	1,347.99	185.70	392,152.82	793,078.71
13,993.00	89.10	182.50	12,693.38	1,435.20	-1,436.23	-131.79	1,442.26	185.24	392,057.91	793,080.78
14,088.00	90.20	184.00	12,693.96	1,530.00	-1,531.07	-137.17	1,537.20	185.12	391,963.07	793,075.40
14,182.00	89.90	185.60	12,693.88	1,623.60	-1,624.74	-145.04	1,631.20	185.10	391,869.40	793,067.53
14,277.00	93.10	184.10	12,691.39	1,718.15	-1,719.35	-153.07	1,726.15	185.09	391,774.79	793,059.50
14,372.00	90.80	182.20	12,688.16	1,812.90	-1,814.14	-158.28	1,821.03	184.99	391,680.00	793,054.29
14,466.00	86.90	178.80	12,690.05	1,906.84	-1,908.09	-159.10	1,914.71	184.77	391,586.05	793,053.47
14,560.00	90.10	177.80	12,692.51	2,000.77	-2,002.00	-156.32	2,008.09	184.46	391,492.14	793,056.25
14,654.00	89.20	178.80	12,693.08	2,094.74	-2,095.95	-153.53	2,101.57	184.19	391,398.19	793,059.04
14,749.00	88.80	177.70	12,694.74	2,189.70	-2,190.89	-150.63	2,196.07	183.93	391,303.25	793,061.94
14,843.00	87.10	176.70	12,698.10	2,283.56	-2,284.72	-146.04	2,289.38	183.66	391,209.42	793,066.53
14,938.00	87.60	176.90	12,702.50	2,378.34	-2,379.47	-140.74	2,383.63	183.39	391,114.67	793,071.83
15,032.00	89.40	180.30	12,704.96	2,472.28	-2,473.39	-138.45	2,477.26	183.20	391,020.75	793,074.12
15,126.00	91.30	184.60	12,704.38	2,566.13	-2,567.28	-142.46	2,571.23	183.18	390,926.86	793,070.11
15,221.00	90.90	182.00	12,702.56	2,660.91	-2,662.09	-147.93	2,666.20	183.18	390,832.05	793,064.64
15,315.00	89.90	180.80	12,701.90	2,754.85	-2,756.06	-150.23	2,760.15	183.12	390,738.08	793,062.34
15,410.00	89.80	180.70	12,702.15	2,849.83	-2,851.05	-151.47	2,855.07	183.04	390,643.09	793,061.10
15,504.00	90.30	180.60	12,702.07	2,943.82	-2,945.04	-152.54	2,948.99	182.96	390,549.10	793,060.03
15,598.00	82.70	176.90	12,707.81	3,037.55	-3,038.76	-150.51	3,042.49	182.84	390,455.38	793,062.06
15,693.00	85.10	177.20	12,717.90	3,131.91	-3,133.09	-145.64	3,136.47	182.66	390,361.05	793,066.93



ProDirectional Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 85H
Wellbore: OH
Design: Surveys 155-22730 MD

Local Co-ordinate Reference: Well 85H
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
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)
15,787.00	87.00	177.40	12,724.37	3,225.61	-3,226.76	-141.23	3,229.85	182.51	390,267.38	793,071.34
15,881.00	88.90	177.00	12,727.74	3,319.46	-3,320.58	-136.64	3,323.39	182.36	390,173.56	793,075.93
15,976.00	90.40	179.00	12,728.32	3,414.42	-3,415.52	-133.32	3,418.12	182.24	390,078.62	793,079.25
16,070.00	90.40	178.80	12,727.66	3,508.41	-3,509.50	-131.52	3,511.96	182.15	389,984.64	793,081.05
16,164.00	88.70	180.60	12,728.40	3,602.40	-3,603.48	-131.03	3,605.87	182.08	389,890.66	793,081.54
16,259.00	92.10	181.70	12,727.74	3,697.35	-3,698.45	-132.93	3,700.84	182.06	389,795.69	793,079.64
16,353.00	86.90	181.50	12,728.56	3,791.25	-3,792.38	-135.56	3,794.80	182.05	389,701.76	793,077.01
16,448.00	89.10	181.60	12,731.87	3,886.13	-3,887.28	-138.12	3,889.73	182.04	389,606.86	793,074.45
16,543.00	86.70	180.40	12,735.35	3,981.03	-3,982.19	-139.78	3,984.64	182.01	389,511.95	793,072.79
16,637.00	86.60	180.30	12,740.85	4,074.86	-4,076.03	-140.36	4,078.44	181.97	389,418.11	793,072.21
16,732.00	88.10	180.10	12,745.24	4,169.75	-4,170.92	-140.69	4,173.29	181.93	389,323.22	793,071.88
16,826.00	88.80	180.60	12,747.78	4,263.71	-4,264.89	-141.26	4,267.22	181.90	389,229.25	793,071.31
16,921.00	86.90	179.40	12,751.34	4,358.63	-4,359.81	-141.26	4,362.10	181.86	389,134.33	793,071.31
17,015.00	90.80	179.30	12,753.23	4,452.59	-4,453.77	-140.20	4,455.98	181.80	389,040.37	793,072.37
17,110.00	92.70	181.40	12,750.33	4,547.53	-4,548.71	-140.77	4,550.89	181.77	388,945.43	793,071.80
17,204.00	92.10	182.20	12,746.39	4,641.37	-4,642.58	-143.72	4,644.81	181.77	388,851.56	793,068.85
17,299.00	88.00	182.30	12,746.31	4,736.25	-4,737.49	-147.45	4,739.78	181.78	388,756.65	793,065.12
17,393.00	88.20	181.90	12,749.43	4,830.11	-4,831.38	-150.90	4,833.73	181.79	388,662.76	793,061.67
17,487.00	85.90	178.60	12,754.27	4,923.96	-4,925.23	-151.31	4,927.55	181.76	388,568.91	793,061.26
17,582.00	87.70	177.60	12,759.57	5,018.77	-5,020.02	-148.16	5,022.21	181.69	388,474.12	793,064.41
17,676.00	88.10	177.30	12,763.01	5,112.64	-5,113.87	-143.98	5,115.89	181.61	388,380.27	793,068.59
17,770.00	88.30	176.60	12,765.97	5,206.50	-5,207.69	-138.98	5,209.54	181.53	388,286.45	793,073.59
17,865.00	89.00	175.50	12,768.20	5,301.29	-5,302.43	-132.44	5,304.09	181.43	388,191.71	793,080.13
17,960.00	89.80	176.40	12,769.20	5,396.09	-5,397.19	-125.73	5,398.65	181.33	388,096.95	793,086.84
18,054.00	92.30	177.50	12,767.48	5,489.97	-5,491.03	-120.73	5,492.36	181.26	388,003.11	793,091.84
18,149.00	92.80	175.90	12,763.25	5,584.76	-5,585.78	-115.27	5,586.97	181.18	387,908.36	793,097.30
18,243.00	93.50	175.40	12,758.08	5,678.39	-5,679.36	-108.15	5,680.39	181.09	387,814.78	793,104.42



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 85H
Wellbore: OH
Design: Surveys 155-22730 MD

Local Co-ordinate Reference: Well 85H
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
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)
18,338.00	92.20	177.30	12,753.36	5,773.12	-5,774.05	-102.11	5,774.95	181.01	387,720.09	793,110.46
18,433.00	91.00	181.70	12,750.71	5,868.06	-5,868.98	-101.28	5,869.86	180.99	387,625.16	793,111.29
18,527.00	89.90	184.80	12,749.97	5,961.85	-5,962.82	-106.61	5,963.77	181.02	387,531.32	793,105.96
18,622.00	89.40	187.60	12,750.55	6,056.20	-6,057.25	-116.87	6,058.38	181.11	387,436.89	793,095.70
18,716.00	89.30	189.90	12,751.61	6,148.98	-6,150.14	-131.17	6,151.54	181.22	387,344.00	793,081.40
18,811.00	87.90	188.80	12,753.94	6,242.57	-6,243.85	-146.60	6,245.57	181.34	387,250.29	793,065.97
18,906.00	93.00	188.00	12,753.19	6,336.41	-6,337.79	-160.47	6,339.83	181.45	387,156.35	793,052.10
18,998.00	93.20	182.80	12,748.21	6,427.77	-6,429.22	-169.11	6,431.44	181.51	387,064.92	793,043.46
19,092.00	89.10	180.80	12,746.32	6,521.65	-6,523.13	-172.06	6,525.40	181.51	386,971.01	793,040.51
19,187.00	90.30	178.40	12,746.82	6,616.64	-6,618.12	-171.40	6,620.34	181.48	386,876.02	793,041.17
19,281.00	91.60	176.80	12,745.26	6,710.57	-6,712.02	-167.47	6,714.11	181.43	386,782.12	793,045.10
19,376.00	92.90	176.50	12,741.53	6,805.37	-6,806.78	-161.92	6,808.71	181.36	386,687.36	793,050.65
19,470.00	93.50	178.30	12,736.29	6,899.15	-6,900.53	-157.66	6,902.33	181.31	386,593.61	793,054.91
19,565.00	88.70	177.60	12,734.46	6,994.07	-6,995.43	-154.26	6,997.13	181.26	386,498.71	793,058.31
19,660.00	91.20	180.60	12,734.55	7,089.05	-7,090.40	-152.77	7,092.04	181.23	386,403.74	793,059.80
19,754.00	88.30	177.00	12,734.96	7,183.01	-7,184.35	-150.80	7,185.93	181.20	386,309.79	793,061.77
19,848.00	89.20	177.90	12,737.01	7,276.93	-7,278.23	-146.62	7,279.71	181.15	386,215.91	793,065.95
19,943.00	89.50	177.80	12,738.08	7,371.88	-7,373.16	-143.06	7,374.55	181.11	386,120.98	793,069.51
20,038.00	90.20	177.70	12,738.33	7,466.83	-7,468.08	-139.33	7,469.38	181.07	386,026.06	793,073.24
20,132.00	90.70	177.60	12,737.59	7,560.77	-7,562.00	-135.48	7,563.21	181.03	385,932.14	793,077.09
20,227.00	91.50	178.00	12,735.77	7,655.71	-7,656.91	-131.83	7,658.05	180.99	385,837.23	793,080.74
20,322.00	91.70	177.90	12,733.12	7,750.63	-7,751.82	-128.43	7,752.88	180.95	385,742.32	793,084.14
20,416.00	88.90	176.90	12,732.63	7,844.55	-7,845.71	-124.17	7,846.69	180.91	385,648.43	793,088.40
20,511.00	88.90	174.20	12,734.45	7,939.29	-7,940.39	-116.80	7,941.25	180.84	385,553.75	793,095.77
20,605.00	92.00	175.60	12,733.71	8,032.97	-8,034.01	-108.45	8,034.74	180.77	385,460.13	793,104.12
20,699.00	92.90	176.00	12,729.69	8,126.67	-8,127.67	-101.57	8,128.30	180.72	385,366.47	793,111.00
20,794.00	93.20	177.50	12,724.64	8,221.42	-8,222.38	-96.19	8,222.94	180.67	385,271.76	793,116.38



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 85H
Wellbore: OH
Design: Surveys 155-22730 MD

Local Co-ordinate Reference: Well 85H
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
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)
20,888.00	92.80	177.70	12,719.72	8,315.24	-8,316.16	-92.26	8,316.68	180.64	385,177.98	793,120.31
20,983.00	92.30	178.40	12,715.49	8,410.11	-8,411.01	-89.03	8,411.49	180.61	385,083.13	793,123.54
21,077.00	89.40	178.30	12,714.10	8,504.07	-8,504.96	-86.32	8,505.39	180.58	384,989.18	793,126.25
21,172.00	88.20	178.70	12,716.09	8,599.03	-8,599.90	-83.84	8,600.31	180.56	384,894.24	793,128.73
21,267.00	88.50	178.90	12,718.82	8,693.98	-8,694.84	-81.85	8,695.22	180.54	384,799.30	793,130.72
21,362.00	89.30	179.80	12,720.65	8,788.96	-8,789.81	-80.77	8,790.19	180.53	384,704.33	793,131.80
21,456.00	90.80	191.20	12,720.57	8,882.30	-8,883.22	-89.76	8,883.68	180.58	384,610.92	793,122.81
21,551.00	90.60	201.00	12,719.40	8,973.26	-8,974.38	-116.08	8,975.13	180.74	384,519.76	793,096.49
21,645.00	91.70	205.40	12,717.51	9,059.34	-9,060.74	-153.09	9,062.03	180.97	384,433.40	793,059.48
21,739.00	92.90	199.00	12,713.74	9,145.98	-9,147.65	-188.56	9,149.60	181.18	384,346.49	793,024.01
21,834.00	90.80	189.50	12,710.66	9,237.72	-9,239.57	-211.90	9,242.00	181.31	384,254.57	793,000.67
21,928.00	91.30	190.20	12,708.94	9,330.20	-9,332.17	-227.98	9,334.95	181.40	384,161.97	792,984.59
22,023.00	89.90	181.30	12,707.94	9,424.54	-9,426.59	-237.48	9,429.58	181.44	384,067.55	792,975.09
22,117.00	91.70	177.30	12,706.63	9,518.51	-9,520.55	-236.34	9,523.48	181.42	383,973.59	792,976.23
22,212.00	91.10	172.20	12,704.31	9,613.11	-9,615.09	-227.65	9,617.79	181.36	383,879.05	792,984.92
22,307.00	91.40	171.10	12,702.24	9,707.18	-9,709.06	-213.86	9,711.42	181.26	383,785.08	792,998.71
22,402.00	86.80	168.60	12,703.73	9,800.78	-9,802.53	-197.12	9,804.51	181.15	383,691.61	793,015.45
22,497.00	86.30	167.60	12,709.45	9,893.71	-9,895.32	-177.57	9,896.91	181.03	383,598.82	793,035.00
22,592.00	86.20	166.70	12,715.66	9,986.29	-9,987.74	-156.49	9,988.97	180.90	383,506.40	793,056.08
22,641.00	86.68	166.34	12,718.70	10,033.93	-10,035.30	-145.09	10,036.35	180.83	383,458.84	793,067.48
330' FSL: 22641' MD										
22,674.00	87.00	166.10	12,720.52	10,065.99	-10,067.30	-137.24	10,068.24	180.78	383,426.84	793,075.33
Final Survey: 22674' MD										
22,730.00	87.00	166.10	12,723.45	10,120.37	-10,121.59	-123.81	10,122.34	180.70	383,372.55	793,088.76
Final TD: 22730' MD										



ProDirectional Survey Report



Company: Devon Energy Corp.
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Well: 85H
Wellbore: OH
Design: Surveys 155-22730 MD

Local Co-ordinate Reference: Well 85H
TVD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
MD Reference: GL 3325'+KB 27' @ 3352.00usft (ICD 209)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,071.00	1,070.99	-4.40	1.43	First Pro Survey: 1071' MD
12,647.00	12,553.58	-131.34	-189.50	330' FNL: 12647' MD
22,641.00	12,718.70	-10,035.30	-145.09	330' FSL: 22641' MD
22,674.00	12,720.52	-10,067.30	-137.24	Final Survey: 22674' MD
22,730.00	12,723.45	-10,121.59	-123.81	Final TD: 22730' MD