



Seawolf 1-12 Fed No. 86H

Lea County, NM

April 06, 2018

Job No. LNM5156717

HOBBS OCD

DEC 12 2018

RECEIVED

Survey Completion Report



PRODIRECTIONAL

Survey Certification Letter

April 06, 2018



Operator Name: Devon Energy Corp.
Well Name: Seawolf 1-12 Fed No. 86H
County/Parish: Lea County,
State: NM
Rig Name: ICD 209
Job Number: LNM5156717

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:

Surveyor	Surveyed Depths	Projection to Bit	Dates Performed	Type of Survey
ProDirectional	1,053' MD – 22,587' MD	22,645' MD	12/01/17 – 03/08/18	MWD

Sincerely,

Mike Coats

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. 86H
OH**

Survey: ProDirectional

Survey Report

06 April, 2018





ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 86H
Wellbore: OH
Design: Surveys 155-22645 MD

Local Co-ordinate Reference: Well 86H
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:	32.0793
From: Map	Easting:	793,262.30 usft	Longitude:	-103.5200
Position Uncertainty: 0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well 86H

Well Position	+N/-S	0.00 usft	Northing:	393,494.43 usft	Latitude:	32.0792
	+E/-W	0.00 usft	Easting:	793,262.54 usft	Longitude:	-103.5200
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 155-22645 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	4/6/2018		
From (usft)	To (usft)	Survey (Wellbore)		Tool Name	Description
155.20	1,005.20	Survey #1 (OH)		MWD+HDGM	OWSG MWD + HDGM
1,053.00	22,645.00	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	393,494.43 793,262.54
155.20	0.30	109.49		155.20	0.14	-0.14	0.38	0.41	109.49	393,494.29	793,262.92
185.20	0.40	168.49		185.20	0.27	-0.26	0.48	0.55	118.95	393,494.17	793,263.02
215.10	0.40	99.49		215.10	0.39	-0.38	0.60	0.71	122.53	393,494.05	793,263.14
245.10	0.30	82.49		245.10	0.40	-0.39	0.78	0.88	116.53	393,494.04	793,263.32
275.50	0.40	112.49		275.50	0.43	-0.42	0.96	1.05	113.69	393,494.01	793,263.50
307.80	0.20	76.49		307.80	0.46	-0.45	1.12	1.21	111.95	393,493.98	793,263.66
339.20	0.50	75.49		339.20	0.41	-0.40	1.30	1.37	107.20	393,494.03	793,263.84
370.60	0.60	78.49		370.59	0.35	-0.34	1.60	1.63	101.90	393,494.09	793,264.14
402.00	0.50	81.49		401.99	0.30	-0.28	1.90	1.92	98.51	393,494.15	793,264.44
433.50	0.30	72.49		433.49	0.25	-0.24	2.11	2.12	96.45	393,494.19	793,264.65
464.80	0.40	94.49		464.79	0.24	-0.22	2.30	2.31	95.53	393,494.21	793,264.84
496.30	0.60	94.49		496.29	0.26	-0.24	2.57	2.58	95.42	393,494.19	793,265.11
527.80	0.40	102.49		527.79	0.30	-0.28	2.84	2.86	95.64	393,494.15	793,265.38
559.20	0.50	76.49		559.19	0.30	-0.27	3.08	3.09	95.05	393,494.16	793,265.62
590.70	0.50	86.49		590.69	0.26	-0.23	3.35	3.36	93.95	393,494.20	793,265.89
622.20	0.40	79.49		622.19	0.23	-0.20	3.60	3.60	93.23	393,494.23	793,266.14
653.20	0.50	94.49		653.19	0.22	-0.19	3.84	3.85	92.89	393,494.24	793,266.38
685.20	0.50	93.49		685.18	0.24	-0.21	4.12	4.12	92.97	393,494.22	793,266.66
716.20	0.50	91.49		716.18	0.26	-0.23	4.39	4.39	92.94	393,494.20	793,266.93
747.20	0.60	102.49		747.18	0.30	-0.26	4.68	4.69	93.23	393,494.17	793,267.22



ProDirectional
Survey Report



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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)
779.20	0.50	112.49	779.18	0.39	-0.35	4.98	4.99	94.07	393,494.08	793,267.52
810.20	0.60	103.49	810.18	0.48	-0.44	5.26	5.28	94.82	393,493.99	793,267.80
842.20	0.60	98.49	842.18	0.55	-0.51	5.59	5.61	95.19	393,493.92	793,268.13
873.20	0.80	98.49	873.17	0.61	-0.56	5.96	5.99	95.39	393,493.87	793,268.50
905.20	0.70	106.49	905.17	0.70	-0.65	6.37	6.40	95.84	393,493.78	793,268.91
936.20	0.70	103.49	936.17	0.80	-0.75	6.74	6.78	96.35	393,493.68	793,269.28
968.20	0.70	104.49	968.17	0.90	-0.84	7.11	7.16	96.76	393,493.59	793,269.65
1,005.20	0.70	114.49	1,005.16	1.05	-0.99	7.54	7.60	97.51	393,493.44	793,270.08
1,053.00	0.70	115.60	1,052.96	1.30	-1.24	8.07	8.16	98.75	393,493.19	793,270.61
First Pro Survey: 1053' MD										
1,147.00	0.90	113.40	1,146.95	1.85	-1.78	9.26	9.43	100.89	393,492.65	793,271.80
1,241.00	0.90	120.00	1,240.94	2.52	-2.44	10.58	10.86	103.01	393,491.99	793,273.12
1,335.00	1.00	117.80	1,334.93	3.29	-3.20	11.95	12.37	104.98	393,491.23	793,274.49
1,429.00	1.10	121.90	1,428.91	4.16	-4.06	13.44	14.04	106.80	393,490.37	793,275.98
1,523.00	1.10	121.10	1,522.89	5.11	-5.00	14.98	15.79	108.46	393,489.43	793,277.52
1,617.00	1.00	120.60	1,616.88	6.01	-5.88	16.45	17.47	109.67	393,488.55	793,278.99
1,711.00	0.90	118.70	1,710.87	6.79	-6.65	17.81	19.01	110.49	393,487.78	793,280.35
1,806.00	1.00	120.40	1,805.85	7.58	-7.43	19.18	20.57	111.18	393,487.00	793,281.72
1,899.00	0.90	127.20	1,898.84	8.44	-8.28	20.46	22.07	112.04	393,486.15	793,283.00
1,993.00	0.90	129.10	1,992.83	9.36	-9.20	21.62	23.49	113.04	393,485.23	793,284.16
2,087.00	1.00	118.90	2,086.81	10.23	-10.06	22.91	25.02	113.70	393,484.37	793,285.45
2,181.00	0.90	120.30	2,180.80	11.01	-10.83	24.27	26.57	114.05	393,483.60	793,286.81
2,275.00	1.00	121.40	2,274.79	11.82	-11.63	25.60	28.12	114.42	393,482.80	793,288.14
2,369.00	0.90	113.40	2,368.78	12.55	-12.35	26.98	29.67	114.59	393,482.08	793,289.52
2,463.00	1.00	116.70	2,462.76	13.22	-13.01	28.39	31.23	114.62	393,481.42	793,290.93
2,556.00	1.10	114.30	2,555.75	13.97	-13.74	29.93	32.93	114.66	393,480.69	793,292.47
2,650.00	1.30	108.40	2,649.73	14.69	-14.45	31.76	34.90	114.46	393,479.98	793,294.30



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Survey Report



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2,744.00	1.40	107.30	2,743.70	15.38	-15.13	33.87	37.10	114.07	393,479.30	793,296.41
2,838.00	1.50	100.80	2,837.67	15.97	-15.70	36.18	39.44	113.46	393,478.73	793,298.72
2,931.00	2.10	84.80	2,930.63	16.07	-15.77	39.07	42.13	111.98	393,478.66	793,301.61
3,025.00	2.80	79.20	3,024.54	15.51	-15.19	43.04	45.64	109.44	393,479.24	793,305.58
3,119.00	3.40	74.10	3,118.40	14.35	-13.99	47.98	49.98	106.26	393,480.44	793,310.52
3,213.00	4.50	71.60	3,212.18	12.47	-12.07	54.16	55.48	102.56	393,482.36	793,316.70
3,307.00	5.40	72.20	3,305.82	10.01	-9.55	61.87	62.60	98.77	393,484.88	793,324.41
3,401.00	6.20	69.40	3,399.34	6.94	-6.41	70.83	71.12	95.17	393,488.02	793,333.37
3,495.00	6.60	64.90	3,492.76	2.94	-2.33	80.47	80.51	91.66	393,492.10	793,343.01
3,589.00	7.10	63.60	3,586.09	-1.86	2.54	90.57	90.60	88.39	393,496.97	793,353.11
3,683.00	6.90	64.60	3,679.39	-6.79	7.55	100.87	101.16	85.72	393,501.98	793,363.41
3,777.00	7.10	58.20	3,772.69	-12.20	13.03	110.91	111.67	83.30	393,507.46	793,373.45
3,871.00	7.00	60.50	3,865.98	-18.00	18.91	120.83	122.30	81.11	393,513.34	793,383.37
3,965.00	7.00	61.80	3,959.28	-23.46	24.44	130.87	133.13	79.42	393,518.87	793,393.41
4,059.00	7.50	63.40	4,052.52	-28.83	29.89	141.40	144.53	78.06	393,524.32	793,403.94
4,153.00	7.30	63.50	4,145.74	-34.16	35.30	152.23	156.27	76.94	393,529.73	793,414.77
4,247.00	7.20	64.70	4,238.99	-39.26	40.49	162.90	167.86	76.04	393,534.92	793,425.44
4,341.00	7.20	66.30	4,332.25	-44.07	45.37	173.62	179.45	75.35	393,539.80	793,436.16
4,434.00	6.90	67.10	4,424.54	-48.50	49.89	184.10	190.74	74.84	393,544.32	793,446.64
4,528.00	7.30	70.80	4,517.82	-52.58	54.05	194.94	202.30	74.50	393,548.48	793,457.48
4,622.00	7.00	69.80	4,611.09	-56.44	57.99	205.96	213.97	74.27	393,552.42	793,468.50
4,716.00	6.50	70.20	4,704.44	-60.15	61.77	216.34	224.99	74.06	393,556.20	793,478.88
4,810.00	6.80	69.40	4,797.81	-63.83	65.53	226.56	235.84	73.87	393,559.96	793,489.10
4,905.00	7.20	73.50	4,892.10	-67.42	69.20	237.53	247.40	73.76	393,563.63	793,500.07
4,999.00	6.70	67.80	4,985.41	-71.08	72.95	248.25	258.75	73.63	393,567.38	793,510.79
5,093.00	6.40	65.80	5,078.80	-75.23	77.16	258.11	269.40	73.36	393,571.59	793,520.65
5,187.00	6.20	65.20	5,172.23	-79.43	81.44	267.50	279.62	73.07	393,575.87	793,530.04



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5,281.00	6.20	64.70	5,265.68	-83.66	85.74	276.69	289.67	72.78	393,580.17	793,539.23
5,375.00	6.40	65.00	5,359.11	-87.97	90.12	286.03	299.89	72.51	393,584.55	793,548.57
5,470.00	6.50	64.60	5,453.51	-92.45	94.67	295.69	310.47	72.25	393,589.10	793,558.23
5,564.00	6.90	64.80	5,546.87	-97.06	99.35	305.60	321.35	71.99	393,593.78	793,568.14
5,658.00	7.00	66.50	5,640.18	-101.67	104.04	315.96	332.65	71.77	393,598.47	793,578.50
5,752.00	6.90	66.30	5,733.49	-106.14	108.60	326.39	343.98	71.60	393,603.03	793,588.93
5,845.00	6.40	63.70	5,825.86	-110.61	113.14	336.15	354.68	71.40	393,607.57	793,598.69
5,939.00	6.00	64.40	5,919.31	-114.99	117.58	345.28	364.75	71.19	393,612.01	793,607.82
6,033.00	5.30	67.70	6,012.85	-118.69	121.35	353.72	373.96	71.06	393,615.78	793,616.26
6,126.00	4.70	68.10	6,105.50	-121.69	124.40	361.23	382.05	71.00	393,618.83	793,623.77
6,220.00	4.00	67.40	6,199.23	-124.34	127.10	367.83	389.17	70.94	393,621.53	793,630.37
6,314.00	3.10	65.10	6,293.05	-126.63	129.43	373.17	394.97	70.87	393,623.86	793,635.71
6,408.00	3.00	64.20	6,386.91	-128.73	131.57	377.69	399.95	70.79	393,626.00	793,640.23
6,502.00	3.00	64.10	6,480.79	-130.84	133.72	382.11	404.83	70.71	393,628.15	793,644.65
6,596.00	1.90	74.10	6,574.70	-132.32	135.22	385.82	408.83	70.69	393,629.65	793,648.36
6,690.00	1.60	78.90	6,668.66	-132.98	135.90	388.61	411.69	70.73	393,630.33	793,651.15
6,784.00	1.60	73.90	6,762.62	-133.57	136.51	391.16	414.30	70.76	393,630.94	793,653.70
6,877.00	1.70	77.70	6,855.58	-134.21	137.17	393.76	416.96	70.79	393,631.60	793,656.30
6,971.00	1.60	74.00	6,949.54	-134.85	137.83	396.38	419.66	70.83	393,632.26	793,658.92
7,065.00	1.80	76.60	7,043.50	-135.53	138.53	399.08	422.44	70.86	393,632.96	793,661.62
7,159.00	0.80	64.40	7,137.47	-136.14	139.15	401.10	424.56	70.87	393,633.58	793,663.64
7,253.00	0.70	60.80	7,231.47	-136.70	139.72	402.20	425.77	70.84	393,634.15	793,664.74
7,347.00	0.70	71.00	7,325.46	-137.16	140.19	403.24	426.91	70.83	393,634.62	793,665.78
7,441.00	0.70	78.50	7,419.45	-137.45	140.49	404.35	428.06	70.84	393,634.92	793,666.89
7,535.00	0.60	80.00	7,513.45	-137.64	140.69	405.39	429.11	70.86	393,635.12	793,667.93
7,629.00	0.50	74.60	7,607.44	-137.83	140.88	406.27	430.01	70.88	393,635.31	793,668.81
7,722.00	0.40	86.20	7,700.44	-137.95	141.01	406.99	430.73	70.89	393,635.44	793,669.53



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7,816.00	0.40	85.20	7,794.44	-138.00	141.06	407.64	431.36	70.91	393,635.49	793,670.18
7,910.00	0.40	105.90	7,888.43	-137.93	141.00	408.29	431.95	70.95	393,635.43	793,670.83
8,004.00	0.40	103.90	7,982.43	-137.76	140.83	408.92	432.49	71.00	393,635.26	793,671.46
8,098.00	0.50	113.90	8,076.43	-137.51	140.58	409.61	433.07	71.06	393,635.01	793,672.15
8,192.00	0.60	107.20	8,170.43	-137.19	140.27	410.46	433.77	71.13	393,634.70	793,673.00
8,285.00	0.70	105.00	8,263.42	-136.89	139.98	411.47	434.63	71.21	393,634.41	793,674.01
8,379.00	0.80	92.40	8,357.41	-136.70	139.80	412.68	435.72	71.29	393,634.23	793,675.22
8,473.00	0.80	95.70	8,451.40	-136.60	139.71	413.99	436.93	71.35	393,634.14	793,676.53
8,567.00	0.80	98.10	8,545.39	-136.43	139.55	415.29	438.12	71.43	393,633.98	793,677.83
8,661.00	0.80	115.50	8,639.38	-136.05	139.18	416.54	439.17	71.52	393,633.61	793,679.08
8,782.00	0.80	124.40	8,760.37	-135.20	138.34	418.00	440.29	71.69	393,632.77	793,680.54
8,876.00	0.60	137.20	8,854.36	-134.46	137.61	418.87	440.90	71.81	393,632.04	793,681.41
8,970.00	0.50	147.80	8,948.36	-133.75	136.90	419.43	441.20	71.92	393,631.33	793,681.97
9,064.00	0.50	177.90	9,042.36	-132.99	136.14	419.66	441.19	72.03	393,630.57	793,682.20
9,158.00	0.60	189.40	9,136.35	-132.09	135.25	419.59	440.85	72.13	393,629.68	793,682.13
9,252.00	0.60	193.60	9,230.35	-131.13	134.28	419.40	440.37	72.25	393,628.71	793,681.94
9,346.00	0.70	205.40	9,324.34	-130.14	133.29	419.04	439.72	72.36	393,627.72	793,681.58
9,440.00	0.50	216.70	9,418.34	-129.29	132.44	418.54	439.00	72.44	393,626.87	793,681.08
9,533.00	0.60	236.20	9,511.33	-128.70	131.84	417.90	438.20	72.49	393,626.27	793,680.44
9,627.00	0.60	245.10	9,605.33	-128.23	131.36	417.04	437.24	72.52	393,625.79	793,679.58
9,721.00	0.50	265.70	9,699.32	-128.00	131.12	416.19	436.35	72.51	393,625.55	793,678.73
9,815.00	1.00	287.30	9,793.31	-128.22	131.34	414.99	435.28	72.44	393,625.77	793,677.53
9,909.00	1.60	288.20	9,887.29	-128.89	131.99	412.96	433.54	72.28	393,626.42	793,675.50
10,003.00	1.60	286.30	9,981.25	-129.68	132.77	410.46	431.40	72.08	393,627.20	793,673.00
10,096.00	2.10	282.10	10,074.20	-130.43	133.49	407.55	428.85	71.86	393,627.92	793,670.09
10,190.00	2.30	290.30	10,168.14	-131.47	134.50	404.09	425.89	71.59	393,628.93	793,666.63
10,284.00	1.70	288.40	10,262.08	-132.59	135.60	401.00	423.31	71.32	393,630.03	793,663.54



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 86H
Wellbore: OH
Design: Surveys 155-22645 MD

Local Co-ordinate Reference: Well 86H
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)
10,378.00	1.90	292.20	10,356.03	-133.64	136.63	398.23	421.02	71.06	393,631.06	793,660.77
10,472.00	2.70	301.20	10,449.96	-135.40	138.36	394.90	418.44	70.69	393,632.79	793,657.44
10,565.00	3.70	293.90	10,542.81	-137.78	140.71	390.28	414.87	70.17	393,635.14	793,652.82
10,659.00	4.90	287.40	10,636.54	-140.26	143.14	383.68	409.51	69.54	393,637.57	793,646.22
10,753.00	5.20	269.30	10,730.18	-141.47	144.29	375.59	402.35	68.98	393,638.72	793,638.13
10,846.00	6.20	244.70	10,822.74	-139.34	142.09	366.83	393.39	68.83	393,636.52	793,629.37
10,940.00	7.30	229.80	10,916.09	-133.38	136.07	357.68	382.69	69.17	393,630.50	793,620.22
11,034.00	9.40	218.10	11,009.10	-123.55	126.17	348.38	370.52	70.09	393,620.60	793,610.92
11,128.00	10.40	208.70	11,101.70	-110.14	112.69	339.57	357.78	71.64	393,607.12	793,602.11
11,222.00	3.90	212.90	11,194.92	-100.04	102.55	333.75	349.15	72.92	393,596.98	793,596.29
11,316.00	2.10	251.90	11,288.80	-96.85	99.33	330.38	344.99	73.27	393,593.76	793,592.92
11,410.00	1.50	278.00	11,382.75	-96.51	98.97	327.52	342.15	73.19	393,593.40	793,590.06
11,504.00	2.10	289.40	11,476.71	-97.27	99.71	324.68	339.64	72.93	393,594.14	793,587.22
11,598.00	2.10	298.20	11,570.64	-98.68	101.10	321.54	337.05	72.55	393,595.53	793,584.08
11,692.00	2.90	298.40	11,664.55	-100.65	103.04	317.93	334.21	72.04	393,597.47	793,580.47
11,786.00	3.80	294.20	11,758.39	-103.10	105.45	312.99	330.28	71.38	393,599.88	793,575.53
11,880.00	3.70	299.20	11,852.19	-105.90	108.21	307.50	325.99	70.61	393,602.64	793,570.04
11,954.00	3.20	305.00	11,926.06	-108.27	110.56	303.73	323.22	70.00	393,604.99	793,566.27
12,065.00	2.50	185.50	12,036.99	-107.66	109.92	300.96	320.40	69.94	393,604.35	793,563.50
12,112.00	6.20	166.30	12,083.84	-104.17	106.44	301.46	319.70	70.55	393,600.87	793,564.00
12,159.00	11.90	159.10	12,130.24	-97.15	99.44	303.79	319.65	71.88	393,593.87	793,566.33
12,206.00	16.10	160.70	12,175.83	-86.44	88.75	307.68	320.22	73.91	393,583.18	793,570.22
12,253.00	21.20	163.90	12,220.35	-72.08	74.43	312.19	320.94	76.59	393,568.86	793,574.73
12,300.00	26.30	167.40	12,263.36	-53.71	56.09	316.82	321.75	79.96	393,550.52	793,579.36
12,347.00	30.10	169.60	12,304.78	-31.92	34.33	321.22	323.05	83.90	393,528.76	793,583.76
12,394.00	35.10	171.90	12,344.36	-6.90	9.34	325.26	325.39	88.35	393,503.77	793,587.80
12,441.00	40.60	174.40	12,381.46	21.75	-19.28	328.65	329.22	93.36	393,475.15	793,591.19



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 86H
Wellbore: OH
Design: Surveys 155-22645 MD

Local Co-ordinate Reference: Well 86H
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)
12,488.00	46.70	176.10	12,415.45	54.08	-51.60	331.31	335.31	98.85	393,442.83	793,593.85
12,535.00	51.90	174.20	12,446.09	89.59	-87.08	334.35	345.50	104.60	393,407.35	793,596.89
12,582.00	55.70	173.80	12,473.85	127.33	-124.80	338.31	360.60	110.25	393,369.63	793,600.85
12,586.00	56.05	173.68	12,476.09	130.62	-128.09	338.67	362.09	110.72	393,366.34	793,601.21
330' FNL: 12586' MD										
12,629.00	59.80	172.50	12,498.92	166.82	-164.25	343.06	380.36	115.58	393,330.18	793,605.60
12,676.00	63.70	170.40	12,521.17	207.79	-205.18	349.23	405.04	120.43	393,289.25	793,611.77
12,723.00	67.00	171.70	12,540.77	250.03	-247.37	355.87	433.40	124.80	393,247.06	793,618.41
12,770.00	70.90	174.30	12,557.65	293.60	-290.89	361.20	463.77	128.85	393,203.54	793,623.74
12,817.00	74.90	177.60	12,571.47	338.41	-335.69	364.36	495.42	132.65	393,158.74	793,626.90
12,864.00	80.40	180.20	12,581.52	384.30	-381.57	365.23	528.19	136.25	393,112.86	793,627.77
12,908.00	85.10	181.40	12,587.07	427.93	-425.20	364.62	560.13	139.39	393,069.23	793,627.16
13,041.00	94.20	181.20	12,587.88	560.72	-558.03	361.60	664.94	147.06	392,936.40	793,624.14
13,136.00	94.40	178.90	12,580.76	655.45	-652.75	361.52	746.18	151.02	392,841.68	793,624.06
13,231.00	89.60	182.60	12,577.44	750.32	-747.64	360.27	829.92	154.27	392,746.79	793,622.81
13,326.00	83.90	184.40	12,582.82	844.91	-842.27	354.49	913.83	157.18	392,652.16	793,617.03
13,420.00	85.40	181.00	12,591.59	938.34	-935.74	350.08	999.08	159.49	392,558.69	793,612.62
13,515.00	85.80	179.50	12,598.88	1,033.05	-1,030.46	349.67	1,088.17	161.26	392,463.97	793,612.21
13,610.00	87.70	179.80	12,604.27	1,127.89	-1,125.30	350.25	1,178.54	162.71	392,369.13	793,612.79
13,704.00	87.90	179.20	12,607.87	1,221.82	-1,219.22	351.07	1,268.76	163.94	392,275.21	793,613.61
13,799.00	89.90	179.60	12,609.70	1,316.80	-1,314.19	352.06	1,360.54	165.00	392,180.24	793,614.60
13,894.00	89.50	179.80	12,610.20	1,411.80	-1,409.19	352.56	1,452.63	165.95	392,085.24	793,615.10
13,989.00	89.60	179.10	12,610.94	1,506.79	-1,504.18	353.47	1,545.16	166.78	391,990.25	793,616.01
14,084.00	89.70	179.50	12,611.52	1,601.79	-1,599.18	354.63	1,638.03	167.50	391,895.25	793,617.17
14,178.00	89.70	179.10	12,612.01	1,695.79	-1,693.17	355.78	1,730.14	168.13	391,801.26	793,618.32
14,273.00	88.70	177.60	12,613.34	1,790.75	-1,788.11	358.52	1,823.70	168.66	391,706.32	793,621.06
14,367.00	87.90	178.50	12,616.13	1,884.68	-1,882.02	361.72	1,916.46	169.12	391,612.41	793,624.26



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 86H
Wellbore: OH
Design: Surveys 155-22645 MD

Local Co-ordinate Reference: Well 86H
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)
14,462.00	92.80	175.40	12,615.55	1,979.54	-1,976.84	366.77	2,010.58	169.49	391,517.59	793,629.31
14,556.00	90.40	176.90	12,612.92	2,073.32	-2,070.58	373.07	2,103.92	169.79	391,423.85	793,635.61
14,651.00	87.70	176.20	12,614.50	2,168.17	-2,165.39	378.79	2,198.27	170.08	391,329.04	793,641.33
14,745.00	89.80	176.10	12,616.55	2,261.97	-2,259.15	385.10	2,291.73	170.33	391,235.28	793,647.64
14,839.00	89.20	178.10	12,617.37	2,355.88	-2,353.02	389.86	2,385.10	170.59	391,141.41	793,652.40
14,934.00	88.80	178.20	12,619.03	2,450.83	-2,447.95	392.92	2,479.29	170.88	391,046.48	793,655.46
15,028.00	87.50	178.00	12,622.06	2,544.75	-2,541.85	396.04	2,572.52	171.14	390,952.58	793,658.58
15,123.00	89.80	177.70	12,624.30	2,639.68	-2,636.75	399.60	2,666.86	171.38	390,857.68	793,662.14
15,217.00	89.10	176.80	12,625.20	2,733.59	-2,730.64	404.11	2,760.38	171.58	390,763.79	793,666.65
15,311.00	89.40	176.30	12,626.43	2,827.45	-2,824.46	409.77	2,854.03	171.75	390,669.97	793,672.31
15,406.00	89.90	178.10	12,627.01	2,922.37	-2,919.34	414.41	2,948.61	171.92	390,575.09	793,676.95
15,500.00	92.30	181.20	12,625.21	3,016.33	-3,013.30	414.98	3,041.74	172.16	390,481.13	793,677.52
15,595.00	89.00	180.60	12,624.13	3,111.29	-3,108.27	413.49	3,135.65	172.42	390,386.16	793,676.03
15,689.00	89.40	181.30	12,625.44	3,205.25	-3,202.25	411.93	3,228.63	172.67	390,292.18	793,674.47
15,783.00	88.90	181.40	12,626.84	3,299.19	-3,296.21	409.72	3,321.58	172.91	390,198.22	793,672.26
15,878.00	90.70	182.20	12,627.17	3,394.12	-3,391.16	406.73	3,415.46	173.16	390,103.27	793,669.27
15,972.00	89.20	181.70	12,627.25	3,488.03	-3,485.10	403.53	3,508.39	173.40	390,009.33	793,666.07
16,066.00	89.80	182.60	12,628.07	3,581.93	-3,579.03	400.01	3,601.31	173.62	389,915.40	793,662.55
16,161.00	90.60	183.40	12,627.74	3,676.76	-3,673.90	395.04	3,695.07	173.86	389,820.53	793,657.58
16,255.00	89.00	182.30	12,628.07	3,770.60	-3,767.78	390.36	3,787.94	174.08	389,726.65	793,652.90
16,350.00	87.10	180.40	12,631.30	3,865.49	-3,862.69	388.12	3,882.14	174.26	389,631.74	793,650.66
16,444.00	88.30	180.70	12,635.07	3,959.40	-3,956.60	387.22	3,975.51	174.41	389,537.83	793,649.76
16,539.00	90.20	182.60	12,636.32	4,054.32	-4,051.55	384.49	4,069.75	174.58	389,442.88	793,647.03
16,633.00	88.00	180.70	12,637.79	4,148.24	-4,145.49	381.78	4,163.03	174.74	389,348.94	793,644.32
16,728.00	89.40	180.30	12,639.95	4,243.20	-4,240.46	380.95	4,257.53	174.87	389,253.97	793,643.49
16,822.00	89.60	178.40	12,640.77	4,337.19	-4,334.44	382.02	4,351.25	174.96	389,159.99	793,644.56
16,917.00	88.50	177.40	12,642.34	4,432.13	-4,429.36	385.50	4,446.11	175.03	389,065.07	793,648.04



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 86H
Wellbore: OH
Design: Surveys 155-22645 MD

Local Co-ordinate Reference: Well 86H
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)
17,012.00	91.70	178.60	12,642.18	4,527.08	-4,524.29	388.81	4,540.97	175.09	388,970.14	793,651.35
17,106.00	90.00	177.00	12,640.78	4,621.02	-4,618.21	392.42	4,634.85	175.14	388,876.22	793,654.96
17,200.00	89.40	176.10	12,641.28	4,714.89	-4,712.03	398.08	4,728.82	175.17	388,782.40	793,660.62
17,295.00	90.10	175.70	12,641.69	4,809.69	-4,806.79	404.87	4,823.81	175.19	388,687.64	793,667.41
17,389.00	91.60	176.30	12,640.30	4,903.49	-4,900.55	411.43	4,917.79	175.20	388,593.88	793,673.97
17,483.00	90.90	175.80	12,638.25	4,997.29	-4,994.30	417.90	5,011.75	175.22	388,500.13	793,680.44
17,578.00	91.30	175.50	12,636.42	5,092.05	-5,089.01	425.11	5,106.73	175.22	388,405.42	793,687.65
17,672.00	91.70	178.60	12,633.96	5,185.92	-5,182.84	429.94	5,200.64	175.26	388,311.59	793,692.48
17,767.00	92.60	180.40	12,630.40	5,280.85	-5,277.76	430.77	5,295.31	175.33	388,216.67	793,693.31
17,861.00	89.00	181.70	12,629.08	5,374.79	-5,371.72	429.05	5,388.83	175.43	388,122.71	793,691.59
17,956.00	90.00	182.90	12,629.91	5,469.68	-5,466.64	425.23	5,483.15	175.55	388,027.79	793,687.77
18,050.00	88.70	182.60	12,630.98	5,563.52	-5,560.52	420.73	5,576.42	175.67	387,933.91	793,683.27
18,145.00	88.80	182.00	12,633.05	5,658.39	-5,655.42	416.91	5,670.77	175.78	387,839.01	793,679.45
18,240.00	87.60	182.70	12,636.04	5,753.23	-5,750.29	413.02	5,765.11	175.89	387,744.14	793,675.56
18,335.00	85.90	182.00	12,641.42	5,847.96	-5,845.06	409.13	5,859.36	176.00	387,649.37	793,671.67
18,429.00	87.30	180.60	12,647.00	5,941.75	-5,938.86	407.00	5,952.79	176.08	387,555.57	793,669.54
18,524.00	89.50	179.80	12,649.65	6,036.70	-6,033.82	406.67	6,047.51	176.14	387,460.61	793,669.21
18,618.00	89.90	177.50	12,650.14	6,130.68	-6,127.78	408.89	6,141.41	176.18	387,366.65	793,671.43
18,712.00	89.40	176.90	12,650.72	6,224.60	-6,221.67	413.48	6,235.39	176.20	387,272.76	793,676.02
18,807.00	89.10	176.30	12,651.96	6,319.46	-6,316.49	419.11	6,330.38	176.20	387,177.94	793,681.65
18,902.00	90.30	175.30	12,652.46	6,414.25	-6,411.23	426.07	6,425.38	176.20	387,083.20	793,688.61
18,996.00	90.30	175.00	12,651.96	6,507.97	-6,504.90	434.02	6,519.36	176.18	386,989.53	793,696.56
19,090.00	92.20	174.70	12,649.91	6,601.62	-6,598.49	442.45	6,613.31	176.16	386,895.94	793,704.99
19,185.00	93.80	177.00	12,644.94	6,696.28	-6,693.10	449.32	6,708.17	176.16	386,801.33	793,711.86
19,279.00	92.30	178.00	12,639.94	6,790.09	-6,786.87	453.41	6,802.00	176.18	386,707.56	793,715.95
19,374.00	94.80	180.00	12,634.06	6,884.89	-6,881.67	455.07	6,896.70	176.22	386,612.76	793,717.61
19,468.00	92.30	184.30	12,628.23	6,978.58	-6,975.39	451.55	6,989.99	176.30	386,519.04	793,714.09



ProDirectional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 86H
Wellbore: OH
Design: Surveys 155-22645 MD

Local Co-ordinate Reference: Well 86H
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)
19,563.00	92.80	185.90	12,624.01	7,073.04	-7,069.92	443.11	7,083.79	176.41	386,424.51	793,705.65
19,658.00	89.20	182.80	12,622.35	7,167.67	-7,164.60	435.91	7,177.85	176.52	386,329.83	793,698.45
19,752.00	89.10	181.40	12,623.74	7,261.57	-7,258.53	432.46	7,271.40	176.59	386,235.90	793,695.00
19,846.00	85.80	180.90	12,627.93	7,355.42	-7,352.40	430.58	7,365.00	176.65	386,142.03	793,693.12
19,941.00	89.00	181.50	12,632.23	7,450.28	-7,447.27	428.59	7,459.59	176.71	386,047.16	793,691.13
20,036.00	88.20	180.90	12,634.56	7,545.21	-7,542.22	426.60	7,554.27	176.76	385,952.21	793,689.14
20,131.00	88.50	180.00	12,637.29	7,640.16	-7,637.17	425.86	7,649.04	176.81	385,857.26	793,688.40
20,225.00	88.70	179.60	12,639.59	7,734.13	-7,731.15	426.18	7,742.88	176.84	385,763.28	793,688.72
20,320.00	92.00	178.10	12,639.01	7,829.10	-7,826.11	428.09	7,837.81	176.87	385,668.32	793,690.63
20,414.00	90.60	177.90	12,636.88	7,923.04	-7,920.03	431.37	7,931.76	176.88	385,574.40	793,693.91
20,509.00	92.80	177.40	12,634.06	8,017.94	-8,014.90	435.26	8,026.71	176.89	385,479.53	793,697.80
20,603.00	93.30	177.70	12,629.06	8,111.75	-8,108.68	439.28	8,120.57	176.90	385,385.75	793,701.82
20,697.00	92.40	177.60	12,624.38	8,205.58	-8,202.48	443.13	8,214.44	176.91	385,291.95	793,705.67
20,792.00	88.00	177.60	12,624.05	8,300.50	-8,297.37	447.10	8,309.41	176.92	385,197.06	793,709.64
20,886.00	88.00	177.40	12,627.33	8,394.38	-8,391.23	451.20	8,403.35	176.92	385,103.20	793,713.74
20,981.00	90.70	177.00	12,628.41	8,489.28	-8,486.10	455.84	8,498.33	176.93	385,008.33	793,718.38
21,075.00	90.60	178.30	12,627.34	8,583.22	-8,580.01	459.69	8,592.32	176.93	384,914.42	793,722.23
21,170.00	92.40	178.50	12,624.86	8,678.16	-8,674.94	462.35	8,687.25	176.95	384,819.49	793,724.89
21,265.00	93.50	178.20	12,619.97	8,773.02	-8,769.77	465.08	8,782.10	176.96	384,724.66	793,727.62
21,359.00	92.30	179.80	12,615.21	8,866.89	-8,863.63	466.72	8,875.91	176.99	384,630.80	793,729.26
21,454.00	91.00	182.40	12,612.47	8,961.80	-8,958.57	464.89	8,970.62	177.03	384,535.86	793,727.43
21,548.00	89.00	182.70	12,612.47	9,055.67	-9,052.47	460.71	9,064.18	177.09	384,441.96	793,723.25
21,643.00	89.30	183.30	12,613.88	9,150.49	-9,147.33	455.74	9,158.67	177.15	384,347.10	793,718.28
21,738.00	89.40	182.00	12,614.96	9,245.34	-9,242.22	451.35	9,253.23	177.20	384,252.21	793,713.89
21,832.00	91.70	185.00	12,614.06	9,339.10	-9,336.02	445.61	9,346.65	177.27	384,158.41	793,708.15
21,927.00	89.30	185.50	12,613.23	9,433.62	-9,430.61	436.92	9,440.73	177.35	384,063.82	793,699.46
22,022.00	87.60	183.40	12,615.80	9,528.24	-9,525.28	429.55	9,534.96	177.42	383,969.15	793,692.09



ProDirectional Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 86H
Wellbore: OH
Design: Surveys 155-22645 MD

Local Co-ordinate Reference: Well 86H
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)
22,116.00	88.50	181.70	12,619.00	9,622.05	-9,619.13	425.37	9,628.53	177.47	383,875.30	793,687.91
22,211.00	90.10	179.90	12,620.16	9,717.01	-9,714.11	424.04	9,723.36	177.50	383,780.32	793,686.58
22,305.00	90.90	180.70	12,619.34	9,811.00	-9,808.10	423.55	9,817.24	177.53	383,686.33	793,686.09
22,400.00	88.90	180.10	12,619.51	9,905.99	-9,903.09	422.89	9,912.12	177.55	383,591.34	793,685.43
22,495.00	91.50	182.20	12,619.17	10,000.94	-9,998.06	420.98	10,006.92	177.59	383,496.37	793,683.52
22,529.00	91.28	182.72	12,618.35	10,034.88	-10,032.02	419.53	10,040.79	177.61	383,462.41	793,682.07
330' FSL: 22529' MD										
22,587.00	90.90	183.60	12,617.25	10,092.76	-10,089.92	416.33	10,098.50	177.64	383,404.51	793,678.87
Final Svy: 22587' MD										
22,645.00	90.90	183.60	12,616.34	10,150.61	-10,147.80	412.69	10,156.18	177.67	383,346.63	793,675.23
Final TD: 22645' MD										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,053.00	1,052.96	-1.24	8.07	First Pro Survey: 1053' MD
12,586.00	12,476.09	-128.09	338.67	330' FNL: 12586' MD
22,529.00	12,618.35	-10,032.02	419.53	330' FSL: 22529' MD
22,587.00	12,617.25	-10,089.92	416.33	Final Svy: 22587' MD
22,645.00	12,616.34	-10,147.80	412.69	Final TD: 22645' MD