



Pro Directional

Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 84H
Wellbore: OH
Design: Surveys 188-22684 MD

Local Co-ordinate Reference: Well 84H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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	Seawolf 1-12 Fed		
Site Position:		Northing:	393,524.42 usft
From:	Map	Easting:	793,262.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.079268
		Longitude:	-103.519953
		Grid Convergence:	0.43 °

Well	84H		
Well Position	+N/-S	0.00 usft	Northing: 393,520.13 usft
	+E/-W	0.00 usft	Easting: 791,254.53 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.079297
		Longitude:	-103.526435
		Ground Level:	3,316.70 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	11/28/2017	(°) 6.77
			Dip Angle (°) 59.80
			Field Strength (nT) 47,905.90

Design	Surveys 188-22684 MD		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction (°) 179.58

Survey Program	Date 10/16/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
188.20	1,033.20	Survey #1 (OH)	NS-GYRO-MS
1,060.00	22,684.00	Survey #2 (OH)	MWD+HDGM
			Description
			North sensing gyrocompassing m/s
			OWSG MWD + HDGM

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
188.20	0.90	180.39	188.19	-1.48	-0.01	1.48	0.48	0.48	0.00
279.20	1.20	167.39	279.18	-3.12	0.19	3.12	0.42	0.33	-14.29
376.20	0.70	140.39	376.16	-4.57	0.79	4.58	0.68	-0.52	-27.84
470.20	0.70	140.39	470.16	-5.46	1.52	5.47	0.00	0.00	0.00
565.20	0.50	145.39	565.15	-6.24	2.13	6.26	0.22	-0.21	5.26
659.20	0.60	159.39	659.15	-7.04	2.54	7.06	0.18	0.11	14.89
753.20	0.60	174.39	753.14	-7.99	2.76	8.01	0.17	0.00	15.96
848.20	0.60	163.39	848.14	-8.96	2.95	8.99	0.12	0.00	-11.58
942.20	0.40	146.39	942.13	-9.71	3.27	9.73	0.26	-0.21	-18.09



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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,033.20	0.30	264.39	1,033.13	-10.00	3.21	10.02	0.66	-0.11	129.67
1,060.00	0.60	195.20	1,059.93	-10.14	3.10	10.16	2.12	1.12	-258.17
First Pro Survey: 1060' MD									
1,152.00	0.60	169.80	1,151.93	-11.08	3.06	11.10	0.29	0.00	-27.61
1,243.00	1.00	153.80	1,242.92	-12.26	3.50	12.28	0.50	0.44	-17.58
1,335.00	1.10	152.90	1,334.90	-13.77	4.25	13.80	0.11	0.11	-0.98
1,427.00	1.00	83.70	1,426.89	-14.46	5.45	14.50	1.30	-0.11	-75.22
1,519.00	1.00	67.20	1,518.88	-14.06	6.99	14.12	0.31	0.00	-17.93
1,610.00	1.00	63.80	1,609.86	-13.41	8.44	13.47	0.07	0.00	-3.74
1,702.00	0.80	57.20	1,701.85	-12.70	9.70	12.77	0.24	-0.22	-7.17
1,797.00	1.50	342.00	1,796.84	-11.16	9.87	11.23	1.59	0.74	-79.16
1,892.00	1.60	335.40	1,891.80	-8.77	8.93	8.84	0.22	0.11	-6.95
1,987.00	1.50	333.30	1,986.77	-6.46	7.82	6.51	0.12	-0.11	-2.21
2,081.00	1.40	333.80	2,080.74	-4.33	6.76	4.38	0.11	-0.11	0.53
2,176.00	1.30	333.90	2,175.71	-2.32	5.78	2.36	0.11	-0.11	0.11
2,271.00	1.20	335.00	2,270.69	-0.45	4.88	0.48	0.11	-0.11	1.16
2,366.00	1.20	5.80	2,365.67	1.44	4.56	-1.41	0.67	0.00	32.42
2,461.00	2.00	49.80	2,460.63	3.50	5.93	-3.46	1.48	0.84	46.32
2,556.00	3.10	68.90	2,555.54	5.50	9.59	-5.43	1.45	1.16	20.11
2,651.00	4.00	74.20	2,650.36	7.32	15.18	-7.21	1.01	0.95	5.58
2,746.00	4.30	72.20	2,745.11	9.31	21.76	-9.16	0.35	0.32	-2.11
2,840.00	4.30	74.00	2,838.84	11.36	28.50	-11.15	0.14	0.00	1.91
2,935.00	4.50	74.40	2,933.56	13.35	35.51	-13.09	0.21	0.21	0.42
3,030.00	4.80	73.10	3,028.25	15.51	42.90	-15.19	0.33	0.32	-1.37
3,125.00	5.20	71.30	3,122.89	18.04	50.79	-17.67	0.45	0.42	-1.89
3,220.00	5.80	72.40	3,217.45	20.87	59.44	-20.44	0.64	0.63	1.16
3,315.00	6.50	73.80	3,311.90	23.82	69.18	-23.32	0.75	0.74	1.47
3,409.00	6.30	76.90	3,405.32	26.48	79.31	-25.90	0.42	-0.21	3.30
3,504.00	5.80	78.80	3,499.79	28.59	89.10	-27.94	0.57	-0.53	2.00
3,599.00	6.10	79.50	3,594.28	30.44	98.77	-29.72	0.32	0.32	0.74
3,694.00	6.20	77.70	3,688.73	32.46	108.74	-31.66	0.23	0.11	-1.89
3,789.00	6.00	79.20	3,783.19	34.48	118.63	-33.61	0.27	-0.21	1.58
3,884.00	5.80	81.60	3,877.69	36.11	128.26	-35.17	0.33	-0.21	2.53
3,979.00	5.70	80.70	3,972.21	37.57	137.66	-36.56	0.14	-0.11	-0.95
4,074.00	6.20	79.50	4,066.70	39.27	147.36	-38.19	0.54	0.53	-1.26
4,169.00	6.20	78.70	4,161.14	41.21	157.44	-40.06	0.09	0.00	-0.84
4,263.00	6.00	78.70	4,254.61	43.17	167.23	-41.94	0.21	-0.21	0.00
4,358.00	6.00	78.50	4,349.09	45.13	176.97	-43.83	0.02	0.00	-0.21
4,453.00	5.60	78.60	4,443.60	47.04	186.38	-45.67	0.42	-0.42	0.11
4,548.00	5.80	80.80	4,538.13	48.72	195.66	-47.29	0.31	0.21	2.32
4,643.00	6.10	83.90	4,632.62	50.03	205.42	-48.52	0.46	0.32	3.26
4,738.00	5.90	84.60	4,727.10	51.02	215.30	-49.44	0.22	-0.21	0.74
4,833.00	5.90	90.90	4,821.60	51.40	225.04	-49.75	0.68	0.00	6.63



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4,928.00	5.90	89.20	4,916.10	51.40	234.80	-49.67	0.18	0.00	-1.79
5,022.00	5.50	83.80	5,009.63	51.95	244.11	-50.16	0.71	-0.43	-5.74
5,117.00	5.10	74.30	5,104.23	53.58	252.70	-51.73	1.01	-0.42	-10.00
5,212.00	4.70	65.20	5,198.88	56.36	260.30	-54.45	0.92	-0.42	-9.58
5,307.00	4.60	65.80	5,293.57	59.55	267.31	-57.59	0.12	-0.11	0.63
5,402.00	4.30	64.70	5,388.28	62.64	274.00	-60.63	0.33	-0.32	-1.16
5,497.00	5.00	64.30	5,482.97	65.95	280.95	-63.89	0.74	0.74	-0.42
5,592.00	5.20	64.00	5,577.59	69.64	288.55	-67.52	0.21	0.21	-0.32
5,687.00	5.10	62.10	5,672.21	73.50	296.15	-71.33	0.21	-0.11	-2.00
5,782.00	6.00	68.00	5,766.76	77.34	304.49	-75.10	1.12	0.95	6.21
5,876.00	6.50	73.00	5,860.21	80.73	314.13	-78.43	0.79	0.53	5.32
5,971.00	6.60	71.40	5,954.59	84.05	324.45	-81.66	0.22	0.11	-1.68
6,066.00	6.40	70.00	6,048.98	87.60	334.60	-85.14	0.27	-0.21	-1.47
6,161.00	6.20	69.00	6,143.40	91.25	344.36	-88.72	0.24	-0.21	-1.05
6,256.00	6.10	67.50	6,237.85	95.02	353.82	-92.42	0.20	-0.11	-1.58
6,350.00	6.10	69.80	6,331.32	98.65	363.12	-95.99	0.26	0.00	2.45
6,445.00	6.20	71.40	6,425.78	102.03	372.72	-99.30	0.21	0.11	1.68
6,540.00	6.20	70.00	6,520.22	105.42	382.40	-102.62	0.16	0.00	-1.47
6,635.00	5.70	73.60	6,614.71	108.51	391.75	-105.63	0.66	-0.53	3.79
6,730.00	5.80	75.20	6,709.23	111.07	400.91	-108.13	0.20	0.11	1.68
6,825.00	5.90	78.30	6,803.74	113.28	410.34	-110.27	0.35	0.11	3.26
6,920.00	5.20	78.20	6,898.29	115.15	419.33	-112.08	0.74	-0.74	-0.11
7,015.00	4.80	79.70	6,992.93	116.75	427.46	-113.61	0.44	-0.42	1.58
7,110.00	4.00	83.50	7,087.65	117.83	434.66	-114.64	0.90	-0.84	4.00
7,204.00	3.30	88.50	7,181.46	118.27	440.62	-115.04	0.82	-0.74	5.32
7,299.00	3.10	89.90	7,276.31	118.35	445.92	-115.08	0.23	-0.21	1.47
7,394.00	3.10	90.50	7,371.17	118.33	451.06	-115.02	0.03	0.00	0.63
7,489.00	2.70	98.00	7,466.05	118.00	455.85	-114.65	0.58	-0.42	7.89
7,584.00	2.50	105.80	7,560.95	117.12	460.05	-113.75	0.43	-0.21	8.21
7,679.00	1.90	107.90	7,655.88	116.07	463.55	-112.67	0.64	-0.63	2.21
7,774.00	1.60	109.40	7,750.84	115.15	466.30	-111.73	0.32	-0.32	1.58
7,869.00	1.30	113.80	7,845.81	114.27	468.53	-110.84	0.34	-0.32	4.63
7,964.00	1.20	119.60	7,940.78	113.35	470.38	-109.90	0.17	-0.11	6.11
8,059.00	1.00	127.40	8,035.77	112.35	471.91	-108.89	0.26	-0.21	8.21
8,154.00	1.10	123.20	8,130.75	111.35	473.33	-107.88	0.13	0.11	-4.42
8,249.00	0.90	136.40	8,225.74	110.31	474.61	-106.83	0.32	-0.21	13.89
8,344.00	0.90	139.70	8,320.72	109.20	475.60	-105.71	0.05	0.00	3.47
8,438.00	0.90	138.10	8,414.71	108.09	476.57	-104.59	0.03	0.00	-1.70
8,534.00	0.80	145.00	8,510.70	106.98	477.46	-103.48	0.15	-0.10	7.19
8,629.00	0.80	147.50	8,605.69	105.88	478.20	-102.37	0.04	0.00	2.63
8,723.00	0.60	166.60	8,699.68	104.84	478.67	-101.33	0.32	-0.21	20.32
8,818.00	0.70	169.60	8,794.68	103.79	478.89	-100.28	0.11	0.11	3.16
8,913.00	0.80	176.50	8,889.67	102.56	479.03	-99.04	0.14	0.11	7.26



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9,008.00	0.80	192.20	8,984.66	101.25	478.93	-97.73	0.23	0.00	16.53
9,103.00	0.90	198.60	9,079.65	99.89	478.55	-96.38	0.14	0.11	6.74
9,198.00	0.90	205.00	9,174.64	98.51	478.00	-95.00	0.11	0.00	6.74
9,299.00	1.00	207.40	9,275.63	97.01	477.26	-93.50	0.11	0.10	2.38
9,394.00	1.00	219.10	9,370.61	95.63	476.35	-92.13	0.21	0.00	12.32
9,489.00	0.80	252.60	9,465.60	94.78	475.20	-91.30	0.58	-0.21	35.26
9,584.00	0.80	261.90	9,560.59	94.49	473.91	-91.02	0.14	0.00	9.79
9,678.00	0.20	150.30	9,654.59	94.26	473.34	-90.79	0.95	-0.64	-118.72
9,773.00	0.70	80.00	9,749.59	94.21	474.00	-90.74	0.69	0.53	-74.00
9,868.00	0.30	50.20	9,844.58	94.47	474.76	-90.99	0.49	-0.42	-31.37
9,963.00	0.30	225.50	9,939.58	94.46	474.77	-90.98	0.63	0.00	184.53
10,058.00	0.50	216.40	10,034.58	93.95	474.35	-90.47	0.22	0.21	-9.58
10,153.00	0.60	216.20	10,129.57	93.22	473.81	-89.74	0.11	0.11	-0.21
10,248.00	0.40	220.50	10,224.57	92.56	473.30	-89.09	0.21	-0.21	4.53
10,343.00	0.70	261.00	10,319.57	92.22	472.51	-88.75	0.50	0.32	42.63
10,437.00	1.10	285.20	10,413.55	92.37	471.07	-88.91	0.58	0.43	25.74
10,532.00	1.20	280.60	10,508.54	92.79	469.21	-89.35	0.14	0.11	-4.84
10,627.00	2.10	281.50	10,603.50	93.32	466.53	-89.90	0.95	0.95	0.95
10,722.00	1.60	295.70	10,698.45	94.24	463.63	-90.84	0.71	-0.53	14.95
10,816.00	1.40	284.40	10,792.41	95.10	461.34	-91.71	0.38	-0.21	-12.02
10,911.00	0.90	285.00	10,887.39	95.58	459.49	-92.21	0.53	-0.53	0.63
11,006.00	0.60	260.10	10,982.39	95.69	458.28	-92.32	0.46	-0.32	-26.21
11,100.00	0.90	234.10	11,076.38	95.17	457.20	-91.81	0.47	0.32	-27.66
11,195.00	0.80	246.30	11,171.37	94.46	455.99	-91.12	0.22	-0.11	12.84
11,290.00	1.40	252.00	11,266.35	93.84	454.27	-90.51	0.64	0.63	6.00
11,384.00	1.90	284.30	11,360.31	93.87	451.67	-90.55	1.10	0.53	34.36
11,479.00	3.20	302.50	11,455.22	95.68	447.91	-92.40	1.60	1.37	19.16
11,574.00	3.30	302.10	11,550.07	98.56	443.36	-95.31	0.11	0.11	-0.42
11,669.00	3.80	301.10	11,644.88	101.64	438.35	-98.42	0.53	0.53	-1.05
11,764.00	3.00	293.30	11,739.72	104.25	433.37	-101.07	0.97	-0.84	-8.21
11,858.00	2.00	286.40	11,833.63	105.68	429.53	-102.53	1.11	-1.06	-7.34
11,953.00	1.80	293.00	11,928.57	106.74	426.57	-103.61	0.31	-0.21	6.95
11,986.00	1.70	293.60	11,961.56	107.13	425.64	-104.01	0.31	-0.30	1.82
12,051.00	1.30	240.10	12,026.54	107.15	424.12	-104.04	2.15	-0.62	-82.31
KOP: 12051' MD									
12,146.00	10.40	180.40	12,120.98	98.02	423.13	-94.91	10.32	9.58	-62.84
12,240.00	22.30	172.00	12,211.02	71.78	425.56	-68.65	12.87	12.66	-8.94
12,335.00	32.00	172.80	12,295.46	28.85	431.23	-25.69	10.22	10.21	0.84
12,430.00	41.30	173.60	12,371.59	-27.40	437.90	30.61	9.80	9.79	0.84
12,525.00	47.40	175.50	12,439.49	-93.48	444.14	96.73	6.57	6.42	2.00
12,619.00	54.30	176.70	12,498.81	-166.16	449.06	169.45	7.41	7.34	1.28
12,620.00	54.39	176.73	12,499.39	-166.97	449.11	170.26	8.89	8.61	2.77
330' FNL: 12620' MD									
12,714.00	62.50	179.10	12,548.55	-246.94	451.95	250.25	8.89	8.63	2.52



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,808.00	70.80	178.90	12,585.77	-333.16	453.46	336.47	8.83	8.83	-0.21
12,840.00	74.10	179.10	12,595.42	-363.66	453.99	366.98	10.33	10.31	0.63
12,911.00	77.70	179.60	12,612.71	-432.50	454.77	435.83	5.12	5.07	0.70
12,943.00	83.70	180.20	12,617.88	-464.07	454.82	467.39	18.84	18.75	1.88
12,974.00	87.80	180.90	12,620.18	-494.98	454.52	498.29	13.42	13.23	2.26
13,069.00	90.80	179.80	12,621.34	-589.95	453.94	593.27	3.36	3.16	-1.16
13,163.00	89.80	178.50	12,620.85	-683.94	455.34	687.26	1.74	-1.06	-1.38
13,258.00	88.90	178.10	12,621.93	-778.89	458.16	782.23	1.04	-0.95	-0.42
13,351.00	89.00	178.90	12,623.63	-871.84	460.59	875.20	0.87	0.11	0.86
13,446.00	87.10	178.60	12,626.86	-966.76	462.66	970.13	2.02	-2.00	-0.32
13,541.00	86.10	179.10	12,632.50	-1,061.57	464.57	1,064.95	1.18	-1.05	0.53
13,635.00	88.90	179.50	12,636.60	-1,155.47	465.71	1,158.85	3.01	2.98	0.43
13,729.00	87.50	178.60	12,639.55	-1,249.40	467.27	1,252.80	1.77	-1.49	-0.96
13,823.00	85.70	179.40	12,645.12	-1,343.22	468.91	1,346.62	2.09	-1.91	0.85
13,918.00	85.80	180.00	12,652.16	-1,437.96	469.40	1,441.36	0.64	0.11	0.63
14,013.00	86.70	180.80	12,658.38	-1,532.75	468.74	1,536.14	1.27	0.95	0.84
14,107.00	87.70	180.60	12,662.97	-1,626.63	467.59	1,630.01	1.08	1.06	-0.21
14,202.00	87.70	180.90	12,666.78	-1,721.54	466.35	1,724.92	0.32	0.00	0.32
14,296.00	89.30	183.30	12,669.24	-1,815.44	462.91	1,818.78	3.07	1.70	2.55
14,391.00	88.80	181.40	12,670.82	-1,910.34	459.01	1,913.65	2.07	-0.53	-2.00
14,485.00	87.00	179.50	12,674.26	-2,004.27	458.27	2,007.57	2.78	-1.91	-2.02
14,580.00	87.80	178.70	12,678.57	-2,099.16	459.77	2,102.47	1.19	0.84	-0.84
14,674.00	90.90	179.80	12,679.64	-2,193.13	461.00	2,196.45	3.50	3.30	1.17
14,769.00	91.80	177.80	12,677.40	-2,288.08	462.98	2,291.41	2.31	0.95	-2.11
14,863.00	92.00	176.60	12,674.28	-2,381.91	467.57	2,385.27	1.29	0.21	-1.28
14,958.00	85.80	176.50	12,676.11	-2,476.67	473.29	2,480.08	6.53	-6.53	-0.11
15,052.00	86.70	177.00	12,682.25	-2,570.32	478.60	2,573.76	1.09	0.96	0.53
15,146.00	93.00	180.80	12,682.50	-2,664.24	480.41	2,667.69	7.83	6.70	4.04
15,241.00	89.70	179.20	12,680.26	-2,759.20	480.41	2,762.64	3.86	-3.47	-1.68
15,335.00	89.90	178.50	12,680.59	-2,853.18	482.29	2,856.63	0.77	0.21	-0.74
15,429.00	89.80	176.90	12,680.84	-2,947.10	486.07	2,950.58	1.71	-0.11	-1.70
15,524.00	89.10	176.50	12,681.75	-3,041.93	491.53	3,045.46	0.85	-0.74	-0.42
15,619.00	88.90	177.10	12,683.41	-3,136.77	496.84	3,140.33	0.67	-0.21	0.63
15,713.00	88.00	178.30	12,685.95	-3,230.66	500.61	3,234.24	1.60	-0.96	1.28
15,807.00	89.10	179.50	12,688.33	-3,324.61	502.41	3,328.20	1.73	1.17	1.28
15,902.00	89.10	179.10	12,689.82	-3,419.59	503.57	3,423.19	0.42	0.00	-0.42
15,996.00	88.80	180.10	12,691.54	-3,513.57	504.23	3,517.17	1.11	-0.32	1.06
16,091.00	90.60	180.30	12,692.04	-3,608.56	503.90	3,612.16	1.91	1.89	0.21
16,185.00	89.60	180.00	12,691.88	-3,702.56	503.65	3,706.15	1.11	-1.06	-0.32
16,279.00	89.40	179.10	12,692.70	-3,796.55	504.39	3,800.15	0.98	-0.21	-0.96
16,374.00	88.10	176.20	12,694.77	-3,891.44	508.28	3,895.06	3.34	-1.37	-3.05
16,469.00	89.10	178.60	12,697.09	-3,986.31	512.59	3,989.96	2.74	1.05	2.53
16,563.00	90.40	182.50	12,697.50	-4,080.28	511.69	4,083.92	4.37	1.38	4.15



Pro Directional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 84H
Wellbore: OH
Design: Surveys 188-22684 MD

Local Co-ordinate Reference: Well 84H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,657.00	89.40	181.10	12,697.67	-4,174.23	508.73	4,177.85	1.83	-1.06	-1.49
16,752.00	89.30	180.80	12,698.74	-4,269.21	507.16	4,272.81	0.33	-0.11	-0.32
16,847.00	90.80	182.80	12,698.66	-4,364.16	504.18	4,367.73	2.63	1.58	2.11
16,941.00	87.20	180.40	12,700.30	-4,458.08	501.55	4,461.64	4.60	-3.83	-2.55
17,036.00	90.00	181.70	12,702.62	-4,553.03	499.81	4,556.57	3.25	2.95	1.37
17,130.00	87.90	179.20	12,704.34	-4,647.00	499.07	4,650.53	3.47	-2.23	-2.66
17,225.00	88.30	175.90	12,707.49	-4,741.84	503.13	4,745.40	3.50	0.42	-3.47
17,319.00	90.50	179.50	12,708.48	-4,835.74	506.90	4,839.33	4.49	2.34	3.83
17,414.00	89.30	174.50	12,708.65	-4,930.58	511.87	4,934.20	5.41	-1.26	-5.26
17,509.00	87.30	171.20	12,711.46	-5,024.78	523.69	5,028.48	4.06	-2.11	-3.47
17,604.00	88.40	170.10	12,715.03	-5,118.45	539.11	5,122.26	1.64	1.16	-1.16
17,698.00	89.50	174.60	12,716.75	-5,211.57	551.62	5,215.48	4.93	1.17	4.79
17,793.00	89.80	173.20	12,717.33	-5,306.03	561.71	5,310.01	1.51	0.32	-1.47
17,888.00	90.40	170.60	12,717.17	-5,400.07	575.10	5,404.14	2.81	0.63	-2.74
17,983.00	88.30	168.10	12,718.24	-5,493.42	592.65	5,497.62	3.44	-2.21	-2.63
18,014.00	89.70	170.40	12,718.79	-5,523.87	598.43	5,528.11	8.68	4.52	7.42
18,046.00	90.10	173.50	12,718.84	-5,555.55	602.91	5,559.82	9.77	1.25	9.69
18,077.00	91.50	175.70	12,718.41	-5,586.41	605.83	5,590.70	8.41	4.52	7.10
18,109.00	91.40	176.00	12,717.60	-5,618.31	608.14	5,622.62	0.99	-0.31	0.94
18,140.00	92.00	176.80	12,716.68	-5,649.24	610.09	5,653.56	3.22	1.94	2.58
18,171.00	92.30	177.80	12,715.52	-5,680.18	611.55	5,684.51	3.37	0.97	3.23
18,203.00	91.90	180.20	12,714.34	-5,712.15	612.11	5,716.48	7.60	-1.25	7.50
18,234.00	91.40	182.30	12,713.45	-5,743.13	611.43	5,747.46	6.96	-1.61	6.77
18,266.00	92.10	184.10	12,712.47	-5,775.06	609.64	5,779.38	6.03	2.19	5.63
18,315.00	90.00	182.00	12,711.58	-5,823.98	607.04	5,828.27	6.06	-4.29	-4.29
18,360.00	90.40	180.40	12,711.42	-5,868.97	606.10	5,873.25	3.66	0.89	-3.56
18,407.00	87.90	178.50	12,712.12	-5,915.95	606.55	5,920.24	6.68	-5.32	-4.04
18,455.00	89.10	178.90	12,713.37	-5,963.92	607.63	5,968.22	2.64	2.50	0.83
18,486.00	90.30	181.70	12,713.53	-5,994.92	607.47	5,999.21	9.83	3.87	9.03
18,518.00	92.00	183.50	12,712.89	-6,026.88	606.02	6,031.16	7.74	5.31	5.63
18,549.00	92.30	184.50	12,711.73	-6,057.78	603.86	6,062.04	3.37	0.97	3.23
18,581.00	92.80	185.20	12,710.31	-6,089.63	601.16	6,093.88	2.69	1.56	2.19
18,612.00	93.90	186.40	12,708.49	-6,120.42	598.03	6,124.64	5.25	3.55	3.87
18,643.00	94.00	186.70	12,706.36	-6,151.15	594.50	6,155.34	1.02	0.32	0.97
18,675.00	93.10	186.10	12,704.38	-6,182.88	590.94	6,187.05	3.38	-2.81	-1.88
18,737.00	91.60	185.20	12,701.83	-6,244.53	584.84	6,248.65	2.82	-2.42	-1.45
18,832.00	90.90	186.70	12,699.76	-6,338.99	575.00	6,343.04	1.74	-0.74	1.58
18,927.00	90.90	189.60	12,698.27	-6,433.01	561.53	6,436.95	3.05	0.00	3.05
19,021.00	87.70	190.30	12,699.42	-6,525.58	545.30	6,529.40	3.48	-3.40	0.74
19,116.00	85.90	187.60	12,704.72	-6,619.26	530.54	6,622.97	3.41	-1.89	-2.84
19,210.00	86.40	184.90	12,711.03	-6,712.48	520.33	6,716.12	2.91	0.53	-2.87
19,305.00	88.30	182.80	12,715.43	-6,807.16	513.96	6,810.74	2.98	2.00	-2.21
19,400.00	89.40	183.80	12,717.33	-6,901.98	508.49	6,905.52	1.56	1.16	1.05
19,494.00	89.50	184.60	12,718.24	-6,995.72	501.61	6,999.21	0.86	0.11	0.85



Pro Directional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 84H
Wellbore: OH
Design: Surveys 188-22684 MD

Local Co-ordinate Reference: Well 84H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,589.00	91.10	183.30	12,717.74	-7,090.49	495.07	7,093.93	2.17	1.68	-1.37
19,684.00	90.80	178.50	12,716.16	-7,185.44	493.57	7,188.86	5.06	-0.32	-5.05
19,778.00	90.30	173.40	12,715.26	-7,279.17	500.21	7,282.64	5.45	-0.53	-5.43
19,873.00	89.80	172.20	12,715.18	-7,373.41	512.12	7,378.97	1.37	-0.53	-1.26
19,967.00	91.70	174.50	12,713.95	-7,466.76	523.00	7,470.40	3.17	2.02	2.45
20,061.00	92.10	177.50	12,710.83	-7,560.47	529.55	7,564.15	3.22	0.43	3.19
20,155.00	90.00	177.60	12,709.11	-7,654.37	533.57	7,658.07	2.24	-2.23	0.11
20,250.00	91.70	179.50	12,707.70	-7,749.32	535.98	7,753.04	2.68	1.79	2.00
20,344.00	90.90	178.20	12,705.56	-7,843.27	537.86	7,847.00	1.62	-0.85	-1.38
20,439.00	87.70	174.00	12,706.73	-7,938.01	544.32	7,941.79	5.56	-3.37	-4.42
20,533.00	88.50	175.40	12,709.84	-8,031.55	553.00	8,035.39	1.71	0.85	1.49
20,628.00	90.00	174.00	12,711.09	-8,126.13	561.77	8,130.03	2.16	1.58	-1.47
20,722.00	90.40	175.20	12,710.76	-8,219.71	570.62	8,223.68	1.35	0.43	1.28
20,816.00	90.20	176.90	12,710.27	-8,313.49	577.09	8,317.49	1.82	-0.21	1.81
20,863.00	92.80	178.90	12,709.03	-8,360.43	578.81	8,364.45	6.98	5.53	4.26
20,911.00	94.90	180.00	12,705.81	-8,408.32	579.27	8,412.34	4.94	4.38	2.29
20,958.00	96.60	180.50	12,701.10	-8,455.08	579.07	8,459.10	3.77	3.62	1.06
21,005.00	97.50	182.80	12,695.33	-8,501.70	577.73	8,505.71	5.22	1.91	4.89
21,100.00	93.10	182.40	12,686.56	-8,596.17	573.44	8,600.15	4.65	-4.63	-0.42
21,194.00	90.70	183.30	12,683.44	-8,690.00	568.77	8,693.93	2.73	-2.55	0.96
21,288.00	89.60	183.20	12,683.20	-8,783.85	563.44	8,787.74	1.18	-1.17	-0.11
21,383.00	91.30	183.20	12,682.45	-8,878.69	558.14	8,882.54	1.79	1.79	0.00
21,477.00	91.20	183.50	12,680.40	-8,972.51	552.64	8,976.32	0.34	-0.11	0.32
21,572.00	89.40	181.10	12,679.90	-9,067.42	548.83	9,071.20	3.16	-1.89	-2.53
21,666.00	90.20	179.70	12,680.23	-9,161.41	548.18	9,165.19	1.72	0.85	-1.49
21,760.00	92.30	180.90	12,678.18	-9,255.38	547.69	9,259.15	2.57	2.23	1.28
21,854.00	89.90	182.10	12,676.38	-9,349.32	545.22	9,353.07	2.85	-2.55	1.28
21,948.00	89.80	181.20	12,676.62	-9,443.28	542.52	9,447.01	0.96	-0.11	-0.96
22,043.00	88.80	183.00	12,677.78	-9,538.21	539.04	9,541.90	2.17	-1.05	1.89
22,137.00	89.10	183.10	12,679.51	-9,632.06	534.04	9,635.72	0.34	0.32	0.11
22,232.00	89.10	181.90	12,681.00	-9,726.96	529.89	9,730.58	1.26	0.00	-1.26
22,326.00	88.40	178.10	12,683.05	-9,820.92	529.89	9,824.54	4.11	-0.74	-4.04
22,420.00	92.20	179.80	12,682.56	-9,914.88	531.62	9,918.51	4.43	4.04	1.81
22,515.00	93.00	178.50	12,678.25	-10,009.77	533.02	10,013.40	1.61	0.84	-1.37
22,575.00	93.95	178.37	12,674.61	-10,069.63	534.66	10,073.28	1.59	1.58	-0.21
330' FSL: 22575' MD									
22,610.00	94.50	178.30	12,672.04	-10,104.52	535.67	10,108.18	1.59	1.58	-0.21
Final Survey: 22610' MD									
22,684.00	94.50	178.30	12,666.23	-10,178.26	537.86	10,181.93	0.00	0.00	0.00
Final TD: 22684' MD									



Pro Directional
Survey Report



Company: Devon Energy Corp.
Project: Lea County, NM (NAD83)
Site: Seawolf 1-12 Fed
Well: 84H
Wellbore: OH
Design: Surveys 188-22684 MD

Local Co-ordinate Reference: Well 84H
TVD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
MD Reference: GL 3316.7'+KB 27' @ 3343.70usft (ICD 205)
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)	
1,060.00	1,059.93	-10.14	3.10	First Pro Survey: 1060' MD
12,051.00	12,026.54	107.15	424.12	KOP: 12051' MD
12,620.00	12,499.39	-166.97	449.11	330' FNL: 12620' MD
22,575.00	12,674.61	-10,069.63	534.66	330' FSL: 22575' MD
22,610.00	12,672.04	-10,104.52	535.67	Final Survey: 22610' MD
22,684.00	12,666.23	-10,178.26	537.86	Final TD: 22684' MD

Checked By: _____ Approved By: _____ Date: _____