

Devon Energy

Lea County, NM (NAD-83)

Seawolf 1-12 Fed

91H

OH

Plan: Plan #1

Standard Planning Report

23 January, 2017

HOBBS OCD

APR 26 2017

RECEIVED

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Site: Seawolf 1-12 Fed
 Well: 91H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well 91H
 TVD Reference: 3318.6' GE + 21' KB @ 3339.60usft
 MD Reference: 3318.6' GE + 21' KB @ 3339.60usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD-83)		
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:	393,463.69 usft	Latitude:	32° 4' 45.071 N
From:	Map	Easting:	789,088.21 usft	Longitude:	103° 32' 0.348 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	91H					
Well Position	+N/-S	-0.18 usft	Northing:	393,463.51 usft	Latitude:	32° 4' 45.071 N
	+E/-W	-30.02 usft	Easting:	789,058.19 usft	Longitude:	103° 32' 0.697 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,318.60 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/19/2017	6.87	59.82	48,000

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	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

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	5.00	72.00	2,999.37	6.74	20.74	1.00	1.00	0.00	72.00	
9,200.00	5.00	72.00	9,175.77	173.72	534.65	0.00	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,174.50	187.19	576.13	0.50	-0.50	0.00	180.00	
12,154.15	0.00	0.00	12,128.65	187.19	576.13	0.00	0.00	0.00	0.00	
13,051.12	89.70	180.00	12,701.60	-382.73	576.12	10.00	10.00	-20.07	180.00	
22,695.43	89.70	180.00	12,752.60	-10,026.91	576.10	0.00	0.00	0.00	0.00	PBHL (S1-12F 91H)

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 TVD Reference: 3318.6' GE + 21' KB @ 3339.60usft
 MD Reference: 3318.6' GE + 21' KB @ 3339.60usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (S1-12F 91H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
959.60	0.00	0.00	959.60	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,328.60	0.00	0.00	1,328.60	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start, 1°/100' Build									
2,600.00	1.00	72.00	2,599.99	0.27	0.83	-0.27	1.00	1.00	0.00
2,700.00	2.00	72.00	2,699.96	1.08	3.32	-1.08	1.00	1.00	0.00
2,800.00	3.00	72.00	2,799.86	2.43	7.47	-2.43	1.00	1.00	0.00
2,900.00	4.00	72.00	2,899.68	4.31	13.27	-4.31	1.00	1.00	0.00
3,000.00	5.00	72.00	2,999.37	6.74	20.74	-6.74	1.00	1.00	0.00
EOB, 5.00° INC									
3,100.00	5.00	72.00	3,098.99	9.43	29.02	-9.43	0.00	0.00	0.00
3,200.00	5.00	72.00	3,198.60	12.12	37.31	-12.12	0.00	0.00	0.00
3,300.00	5.00	72.00	3,298.22	14.82	45.60	-14.82	0.00	0.00	0.00
3,400.00	5.00	72.00	3,397.84	17.51	53.89	-17.51	0.00	0.00	0.00
3,500.00	5.00	72.00	3,497.46	20.20	62.18	-20.20	0.00	0.00	0.00
3,600.00	5.00	72.00	3,597.08	22.90	70.47	-22.90	0.00	0.00	0.00
3,700.00	5.00	72.00	3,696.70	25.59	78.76	-25.59	0.00	0.00	0.00
3,800.00	5.00	72.00	3,796.32	28.28	87.05	-28.28	0.00	0.00	0.00
3,900.00	5.00	72.00	3,895.94	30.98	95.34	-30.98	0.00	0.00	0.00
4,000.00	5.00	72.00	3,995.56	33.67	103.63	-33.67	0.00	0.00	0.00
4,100.00	5.00	72.00	4,095.18	36.36	111.91	-36.36	0.00	0.00	0.00
4,200.00	5.00	72.00	4,194.80	39.06	120.20	-39.06	0.00	0.00	0.00
4,300.00	5.00	72.00	4,294.42	41.75	128.49	-41.75	0.00	0.00	0.00
4,400.00	5.00	72.00	4,394.04	44.44	136.78	-44.44	0.00	0.00	0.00
4,500.00	5.00	72.00	4,493.66	47.14	145.07	-47.14	0.00	0.00	0.00
4,600.00	5.00	72.00	4,593.28	49.83	153.36	-49.83	0.00	0.00	0.00

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4,700.00	5.00	72.00	4,692.90	52.52	161.65	-52.52	0.00	0.00	0.00
4,800.00	5.00	72.00	4,792.52	55.22	169.94	-55.22	0.00	0.00	0.00
4,883.40	5.00	72.00	4,875.60	57.46	176.85	-57.46	0.00	0.00	0.00
Base of Salt									
4,900.00	5.00	72.00	4,892.14	57.91	178.23	-57.91	0.00	0.00	0.00
5,000.00	5.00	72.00	4,991.76	60.60	186.52	-60.60	0.00	0.00	0.00
5,100.00	5.00	72.00	5,091.37	63.30	194.80	-63.30	0.00	0.00	0.00
5,126.33	5.00	72.00	5,117.60	64.00	196.99	-64.00	0.00	0.00	0.00
Delaware									
5,200.00	5.00	72.00	5,190.99	65.99	203.09	-65.99	0.00	0.00	0.00
5,300.00	5.00	72.00	5,290.61	68.68	211.38	-68.68	0.00	0.00	0.00
5,400.00	5.00	72.00	5,390.23	71.38	219.67	-71.38	0.00	0.00	0.00
5,500.00	5.00	72.00	5,489.85	74.07	227.96	-74.07	0.00	0.00	0.00
5,600.00	5.00	72.00	5,589.47	76.76	236.25	-76.76	0.00	0.00	0.00
5,700.00	5.00	72.00	5,689.09	79.46	244.54	-79.46	0.00	0.00	0.00
5,800.00	5.00	72.00	5,788.71	82.15	252.83	-82.15	0.00	0.00	0.00
5,900.00	5.00	72.00	5,888.33	84.84	261.12	-84.84	0.00	0.00	0.00
6,000.00	5.00	72.00	5,987.95	87.54	269.41	-87.54	0.00	0.00	0.00
6,100.00	5.00	72.00	6,087.57	90.23	277.69	-90.23	0.00	0.00	0.00
6,200.00	5.00	72.00	6,187.19	92.92	285.98	-92.92	0.00	0.00	0.00
6,300.00	5.00	72.00	6,286.81	95.62	294.27	-95.62	0.00	0.00	0.00
6,400.00	5.00	72.00	6,386.43	98.31	302.56	-98.31	0.00	0.00	0.00
6,500.00	5.00	72.00	6,486.05	101.00	310.85	-101.00	0.00	0.00	0.00
6,600.00	5.00	72.00	6,585.67	103.69	319.14	-103.69	0.00	0.00	0.00
6,700.00	5.00	72.00	6,685.29	106.39	327.43	-106.39	0.00	0.00	0.00
6,800.00	5.00	72.00	6,784.91	109.08	335.72	-109.08	0.00	0.00	0.00
6,900.00	5.00	72.00	6,884.53	111.77	344.01	-111.77	0.00	0.00	0.00
7,000.00	5.00	72.00	6,984.14	114.47	352.30	-114.47	0.00	0.00	0.00
7,100.00	5.00	72.00	7,083.76	117.16	360.58	-117.16	0.00	0.00	0.00
7,200.00	5.00	72.00	7,183.38	119.85	368.87	-119.85	0.00	0.00	0.00
7,300.00	5.00	72.00	7,283.00	122.55	377.16	-122.55	0.00	0.00	0.00
7,400.00	5.00	72.00	7,382.62	125.24	385.45	-125.24	0.00	0.00	0.00
7,500.00	5.00	72.00	7,482.24	127.93	393.74	-127.93	0.00	0.00	0.00
7,600.00	5.00	72.00	7,581.86	130.63	402.03	-130.63	0.00	0.00	0.00
7,700.00	5.00	72.00	7,681.48	133.32	410.32	-133.32	0.00	0.00	0.00
7,800.00	5.00	72.00	7,781.10	136.01	418.61	-136.01	0.00	0.00	0.00
7,900.00	5.00	72.00	7,880.72	138.71	426.90	-138.71	0.00	0.00	0.00
8,000.00	5.00	72.00	7,980.34	141.40	435.19	-141.40	0.00	0.00	0.00
8,100.00	5.00	72.00	8,079.96	144.09	443.47	-144.09	0.00	0.00	0.00
8,200.00	5.00	72.00	8,179.58	146.79	451.76	-146.79	0.00	0.00	0.00
8,300.00	5.00	72.00	8,279.20	149.48	460.05	-149.48	0.00	0.00	0.00
8,400.00	5.00	72.00	8,378.82	152.17	468.34	-152.17	0.00	0.00	0.00
8,500.00	5.00	72.00	8,478.44	154.87	476.63	-154.87	0.00	0.00	0.00
8,600.00	5.00	72.00	8,578.06	157.56	484.92	-157.56	0.00	0.00	0.00
8,700.00	5.00	72.00	8,677.68	160.25	493.21	-160.25	0.00	0.00	0.00
8,800.00	5.00	72.00	8,777.30	162.95	501.50	-162.95	0.00	0.00	0.00
8,900.00	5.00	72.00	8,876.91	165.64	509.79	-165.64	0.00	0.00	0.00
9,000.00	5.00	72.00	8,976.53	168.33	518.08	-168.33	0.00	0.00	0.00
9,100.00	5.00	72.00	9,076.15	171.03	526.36	-171.03	0.00	0.00	0.00
9,141.61	5.00	72.00	9,117.60	172.15	529.81	-172.15	0.00	0.00	0.00
Lower Brushy Canyon									
9,200.00	5.00	72.00	9,175.77	173.72	534.65	-173.72	0.00	0.00	0.00
Start, 0.50°/100' Drop									

LEAM Drilling Systems LLC

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Site: Seawolf 1-12 Fed
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9,300.00	4.50	72.00	9,275.43	176.28	542.53	-176.28	0.50	-0.50	0.00
9,313.21	4.43	72.00	9,288.60	176.60	543.51	-176.60	0.50	-0.50	0.00
1st BSPG Lime									
9,400.00	4.00	72.00	9,375.15	178.57	549.58	-178.57	0.50	-0.50	0.00
9,500.00	3.50	72.00	9,474.94	180.59	555.80	-180.59	0.50	-0.50	0.00
9,600.00	3.00	72.00	9,574.78	182.34	561.19	-182.34	0.50	-0.50	0.00
9,700.00	2.50	72.00	9,674.66	183.82	565.75	-183.82	0.50	-0.50	0.00
9,800.00	2.00	72.00	9,774.59	185.04	569.49	-185.04	0.50	-0.50	0.00
9,900.00	1.50	72.00	9,874.54	185.98	572.39	-185.98	0.50	-0.50	0.00
10,000.00	1.00	72.00	9,974.51	186.66	574.47	-186.66	0.50	-0.50	0.00
10,100.00	0.50	72.00	10,074.51	187.06	575.71	-187.06	0.50	-0.50	0.00
10,200.00	0.00	0.00	10,174.50	187.19	576.13	-187.19	0.50	-0.50	0.00
EOD, 0.00° INC									
10,269.10	0.00	0.00	10,243.60	187.19	576.13	-187.19	0.00	0.00	0.00
1st BSPG Sand									
10,300.00	0.00	0.00	10,274.50	187.19	576.13	-187.19	0.00	0.00	0.00
10,400.00	0.00	0.00	10,374.50	187.19	576.13	-187.19	0.00	0.00	0.00
10,500.00	0.00	0.00	10,474.50	187.19	576.13	-187.19	0.00	0.00	0.00
10,533.10	0.00	0.00	10,507.60	187.19	576.13	-187.19	0.00	0.00	0.00
2nd BSPG Lime									
10,600.00	0.00	0.00	10,574.50	187.19	576.13	-187.19	0.00	0.00	0.00
10,700.00	0.00	0.00	10,674.50	187.19	576.13	-187.19	0.00	0.00	0.00
10,800.00	0.00	0.00	10,774.50	187.19	576.13	-187.19	0.00	0.00	0.00
10,835.10	0.00	0.00	10,809.60	187.19	576.13	-187.19	0.00	0.00	0.00
2nd BSPG Sand									
10,900.00	0.00	0.00	10,874.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,000.00	0.00	0.00	10,974.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,100.00	0.00	0.00	11,074.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,200.00	0.00	0.00	11,174.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,205.10	0.00	0.00	11,179.60	187.19	576.13	-187.19	0.00	0.00	0.00
3rd BSPG Lime									
11,300.00	0.00	0.00	11,274.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,400.00	0.00	0.00	11,374.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,500.00	0.00	0.00	11,474.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,600.00	0.00	0.00	11,574.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,700.00	0.00	0.00	11,674.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,800.00	0.00	0.00	11,774.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,900.00	0.00	0.00	11,874.50	187.19	576.13	-187.19	0.00	0.00	0.00
11,940.10	0.00	0.00	11,914.60	187.19	576.13	-187.19	0.00	0.00	0.00
3rd BSPG Sand									
12,000.00	0.00	0.00	11,974.50	187.19	576.13	-187.19	0.00	0.00	0.00
12,100.00	0.00	0.00	12,074.50	187.19	576.13	-187.19	0.00	0.00	0.00
12,154.15	0.00	0.00	12,128.65	187.19	576.13	-187.19	0.00	0.00	0.00
KOP, Start 10°/100' Build									
12,200.00	4.58	180.00	12,174.46	185.36	576.13	-185.36	10.00	10.00	0.00
12,250.00	9.58	180.00	12,224.06	179.20	576.13	-179.20	10.00	10.00	0.00
12,300.00	14.58	180.00	12,272.93	168.73	576.13	-168.73	10.00	10.00	0.00
12,350.00	19.58	180.00	12,320.71	154.05	576.13	-154.05	10.00	10.00	0.00
12,371.51	21.74	180.00	12,340.83	146.46	576.13	-146.46	10.00	10.00	0.00
Wolfcamp									
12,400.00	24.58	180.00	12,367.03	135.25	576.13	-135.25	10.00	10.00	0.00
12,450.00	29.58	180.00	12,411.53	112.49	576.13	-112.49	10.00	10.00	0.00
12,500.00	34.58	180.00	12,453.88	85.94	576.13	-85.94	10.00	10.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Seawolf 1-12 Fed
Well: 91H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 91H
TVD Reference: 3318.6' GE + 21' KB @ 3339.60usft
MD Reference: 3318.6' GE + 21' KB @ 3339.60usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
12,550.00	39.58	180.00	12,493.76	55.80	576.12	-55.80	10.00	10.00	0.00
12,600.00	44.58	180.00	12,530.85	22.30	576.12	-22.30	10.00	10.00	0.00
12,600.89	44.67	180.00	12,531.49	21.68	576.12	-21.68	10.00	10.00	0.00
Wolfcamp "A"									
12,650.00	49.58	180.00	12,564.89	-14.30	576.12	14.30	10.00	10.00	0.00
12,700.00	54.58	180.00	12,595.60	-53.74	576.12	53.74	10.00	10.00	0.00
12,750.00	59.58	180.00	12,622.76	-95.70	576.12	95.70	10.00	10.00	0.00
12,775.59	62.14	180.00	12,635.22	-118.04	576.12	118.04	10.00	10.00	0.00
Wolfcamp A 120									
12,800.00	64.58	180.00	12,646.16	-139.87	576.12	139.87	10.00	10.00	0.00
12,850.00	69.58	180.00	12,665.63	-185.91	576.12	185.91	10.00	10.00	0.00
12,900.00	74.58	180.00	12,681.00	-233.47	576.12	233.47	10.00	10.00	0.00
12,950.00	79.58	180.00	12,692.17	-282.19	576.12	282.19	10.00	10.00	0.00
13,000.00	84.58	180.00	12,699.06	-331.69	576.12	331.69	10.00	10.00	0.00
13,051.12	89.70	180.00	12,701.60	-382.73	576.12	382.73	10.00	10.00	0.00
LP, 89.70° INC, 180.00° AZI									
13,100.00	89.70	180.00	12,701.86	-431.61	576.12	431.61	0.00	0.00	0.00
13,200.00	89.70	180.00	12,702.39	-531.61	576.12	531.61	0.00	0.00	0.00
13,300.00	89.70	180.00	12,702.92	-631.61	576.12	631.61	0.00	0.00	0.00
13,400.00	89.70	180.00	12,703.45	-731.61	576.12	731.61	0.00	0.00	0.00
13,500.00	89.70	180.00	12,703.98	-831.61	576.12	831.61	0.00	0.00	0.00
13,600.00	89.70	180.00	12,704.51	-931.61	576.12	931.61	0.00	0.00	0.00
13,700.00	89.70	180.00	12,705.04	-1,031.60	576.12	1,031.60	0.00	0.00	0.00
13,800.00	89.70	180.00	12,705.56	-1,131.60	576.12	1,131.60	0.00	0.00	0.00
13,900.00	89.70	180.00	12,706.09	-1,231.60	576.12	1,231.60	0.00	0.00	0.00
14,000.00	89.70	180.00	12,706.62	-1,331.60	576.12	1,331.60	0.00	0.00	0.00
14,100.00	89.70	180.00	12,707.15	-1,431.60	576.12	1,431.60	0.00	0.00	0.00
14,200.00	89.70	180.00	12,707.68	-1,531.60	576.12	1,531.60	0.00	0.00	0.00
14,300.00	89.70	180.00	12,708.21	-1,631.60	576.12	1,631.60	0.00	0.00	0.00
14,400.00	89.70	180.00	12,708.74	-1,731.59	576.12	1,731.59	0.00	0.00	0.00
14,500.00	89.70	180.00	12,709.27	-1,831.59	576.12	1,831.59	0.00	0.00	0.00
14,600.00	89.70	180.00	12,709.79	-1,931.59	576.12	1,931.59	0.00	0.00	0.00
14,700.00	89.70	180.00	12,710.32	-2,031.59	576.12	2,031.59	0.00	0.00	0.00
14,800.00	89.70	180.00	12,710.85	-2,131.59	576.12	2,131.59	0.00	0.00	0.00
14,900.00	89.70	180.00	12,711.38	-2,231.59	576.12	2,231.59	0.00	0.00	0.00
15,000.00	89.70	180.00	12,711.91	-2,331.59	576.12	2,331.59	0.00	0.00	0.00
15,100.00	89.70	180.00	12,712.44	-2,431.58	576.12	2,431.58	0.00	0.00	0.00
15,200.00	89.70	180.00	12,712.97	-2,531.58	576.12	2,531.58	0.00	0.00	0.00
15,300.00	89.70	180.00	12,713.50	-2,631.58	576.12	2,631.58	0.00	0.00	0.00
15,400.00	89.70	180.00	12,714.02	-2,731.58	576.12	2,731.58	0.00	0.00	0.00
15,500.00	89.70	180.00	12,714.55	-2,831.58	576.12	2,831.58	0.00	0.00	0.00
15,600.00	89.70	180.00	12,715.08	-2,931.58	576.12	2,931.58	0.00	0.00	0.00
15,700.00	89.70	180.00	12,715.61	-3,031.58	576.12	3,031.58	0.00	0.00	0.00
15,800.00	89.70	180.00	12,716.14	-3,131.57	576.12	3,131.57	0.00	0.00	0.00
15,900.00	89.70	180.00	12,716.67	-3,231.57	576.12	3,231.57	0.00	0.00	0.00
16,000.00	89.70	180.00	12,717.20	-3,331.57	576.12	3,331.57	0.00	0.00	0.00
16,100.00	89.70	180.00	12,717.73	-3,431.57	576.12	3,431.57	0.00	0.00	0.00
16,200.00	89.70	180.00	12,718.25	-3,531.57	576.12	3,531.57	0.00	0.00	0.00
16,300.00	89.70	180.00	12,718.78	-3,631.57	576.12	3,631.57	0.00	0.00	0.00
16,400.00	89.70	180.00	12,719.31	-3,731.57	576.12	3,731.57	0.00	0.00	0.00
16,500.00	89.70	180.00	12,719.84	-3,831.57	576.12	3,831.57	0.00	0.00	0.00
16,600.00	89.70	180.00	12,720.37	-3,931.56	576.12	3,931.56	0.00	0.00	0.00
16,700.00	89.70	180.00	12,720.90	-4,031.56	576.11	4,031.56	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
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Well: 91H
Wellbore: OH
Design: Plan #1

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MD Reference: 3318.6' GE + 21' KB @ 3339.60usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned 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)
16,800.00	89.70	180.00	12,721.43	-4,131.56	576.11	4,131.56	0.00	0.00	0.00
16,900.00	89.70	180.00	12,721.96	-4,231.56	576.11	4,231.56	0.00	0.00	0.00
17,000.00	89.70	180.00	12,722.48	-4,331.56	576.11	4,331.56	0.00	0.00	0.00
17,100.00	89.70	180.00	12,723.01	-4,431.56	576.11	4,431.56	0.00	0.00	0.00
17,200.00	89.70	180.00	12,723.54	-4,531.56	576.11	4,531.56	0.00	0.00	0.00
17,300.00	89.70	180.00	12,724.07	-4,631.55	576.11	4,631.55	0.00	0.00	0.00
17,400.00	89.70	180.00	12,724.60	-4,731.55	576.11	4,731.55	0.00	0.00	0.00
17,500.00	89.70	180.00	12,725.13	-4,831.55	576.11	4,831.55	0.00	0.00	0.00
17,600.00	89.70	180.00	12,725.66	-4,931.55	576.11	4,931.55	0.00	0.00	0.00
17,700.00	89.70	180.00	12,726.19	-5,031.55	576.11	5,031.55	0.00	0.00	0.00
17,800.00	89.70	180.00	12,726.71	-5,131.55	576.11	5,131.55	0.00	0.00	0.00
17,900.00	89.70	180.00	12,727.24	-5,231.55	576.11	5,231.55	0.00	0.00	0.00
18,000.00	89.70	180.00	12,727.77	-5,331.54	576.11	5,331.54	0.00	0.00	0.00
18,100.00	89.70	180.00	12,728.30	-5,431.54	576.11	5,431.54	0.00	0.00	0.00
18,200.00	89.70	180.00	12,728.83	-5,531.54	576.11	5,531.54	0.00	0.00	0.00
18,300.00	89.70	180.00	12,729.36	-5,631.54	576.11	5,631.54	0.00	0.00	0.00
18,400.00	89.70	180.00	12,729.89	-5,731.54	576.11	5,731.54	0.00	0.00	0.00
18,500.00	89.70	180.00	12,730.42	-5,831.54	576.11	5,831.54	0.00	0.00	0.00
18,600.00	89.70	180.00	12,730.94	-5,931.54	576.11	5,931.54	0.00	0.00	0.00
18,700.00	89.70	180.00	12,731.47	-6,031.53	576.11	6,031.53	0.00	0.00	0.00
18,800.00	89.70	180.00	12,732.00	-6,131.53	576.11	6,131.53	0.00	0.00	0.00
18,900.00	89.70	180.00	12,732.53	-6,231.53	576.11	6,231.53	0.00	0.00	0.00
19,000.00	89.70	180.00	12,733.06	-6,331.53	576.11	6,331.53	0.00	0.00	0.00
19,100.00	89.70	180.00	12,733.59	-6,431.53	576.11	6,431.53	0.00	0.00	0.00
19,200.00	89.70	180.00	12,734.12	-6,531.53	576.11	6,531.53	0.00	0.00	0.00
19,300.00	89.70	180.00	12,734.65	-6,631.53	576.11	6,631.53	0.00	0.00	0.00
19,400.00	89.70	180.00	12,735.18	-6,731.52	576.11	6,731.52	0.00	0.00	0.00
19,500.00	89.70	180.00	12,735.70	-6,831.52	576.11	6,831.52	0.00	0.00	0.00
19,600.00	89.70	180.00	12,736.23	-6,931.52	576.11	6,931.52	0.00	0.00	0.00
19,700.00	89.70	180.00	12,736.76	-7,031.52	576.11	7,031.52	0.00	0.00	0.00
19,800.00	89.70	180.00	12,737.29	-7,131.52	576.11	7,131.52	0.00	0.00	0.00
19,900.00	89.70	180.00	12,737.82	-7,231.52	576.11	7,231.52	0.00	0.00	0.00
20,000.00	89.70	180.00	12,738.35	-7,331.52	576.11	7,331.52	0.00	0.00	0.00
20,100.00	89.70	180.00	12,738.88	-7,431.51	576.11	7,431.51	0.00	0.00	0.00
20,200.00	89.70	180.00	12,739.41	-7,531.51	576.11	7,531.51	0.00	0.00	0.00
20,300.00	89.70	180.00	12,739.93	-7,631.51	576.11	7,631.51	0.00	0.00	0.00
20,400.00	89.70	180.00	12,740.46	-7,731.51	576.11	7,731.51	0.00	0.00	0.00
20,500.00	89.70	180.00	12,740.99	-7,831.51	576.11	7,831.51	0.00	0.00	0.00
20,600.00	89.70	180.00	12,741.52	-7,931.51	576.11	7,931.51	0.00	0.00	0.00
20,700.00	89.70	180.00	12,742.05	-8,031.51	576.10	8,031.51	0.00	0.00	0.00
20,800.00	89.70	180.00	12,742.58	-8,131.51	576.10	8,131.51	0.00	0.00	0.00
20,900.00	89.70	180.00	12,743.11	-8,231.50	576.10	8,231.50	0.00	0.00	0.00
21,000.00	89.70	180.00	12,743.64	-8,331.50	576.10	8,331.50	0.00	0.00	0.00
21,100.00	89.70	180.00	12,744.16	-8,431.50	576.10	8,431.50	0.00	0.00	0.00
21,200.00	89.70	180.00	12,744.69	-8,531.50	576.10	8,531.50	0.00	0.00	0.00
21,300.00	89.70	180.00	12,745.22	-8,631.50	576.10	8,631.50	0.00	0.00	0.00
21,400.00	89.70	180.00	12,745.75	-8,731.50	576.10	8,731.50	0.00	0.00	0.00
21,500.00	89.70	180.00	12,746.28	-8,831.50	576.10	8,831.50	0.00	0.00	0.00
21,600.00	89.70	180.00	12,746.81	-8,931.49	576.10	8,931.49	0.00	0.00	0.00
21,700.00	89.70	180.00	12,747.34	-9,031.49	576.10	9,031.49	0.00	0.00	0.00
21,800.00	89.70	180.00	12,747.87	-9,131.49	576.10	9,131.49	0.00	0.00	0.00
21,900.00	89.70	180.00	12,748.39	-9,231.49	576.10	9,231.49	0.00	0.00	0.00
22,000.00	89.70	180.00	12,748.92	-9,331.49	576.10	9,331.49	0.00	0.00	0.00
22,100.00	89.70	180.00	12,749.45	-9,431.49	576.10	9,431.49	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Site: Seawolf 1-12 Fed
 Well: 91H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well 91H
 TVD Reference: 3318.6' GE + 21' KB @ 3339.60usft
 MD Reference: 3318.6' GE + 21' KB @ 3339.60usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned 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)
22,200.00	89.70	180.00	12,749.98	-9,531.49	576.10	9,531.49	0.00	0.00	0.00
22,300.00	89.70	180.00	12,750.51	-9,631.48	576.10	9,631.48	0.00	0.00	0.00
22,400.00	89.70	180.00	12,751.04	-9,731.48	576.10	9,731.48	0.00	0.00	0.00
22,500.00	89.70	180.00	12,751.57	-9,831.48	576.10	9,831.48	0.00	0.00	0.00
22,600.00	89.70	180.00	12,752.10	-9,931.48	576.10	9,931.48	0.00	0.00	0.00
22,695.43	89.70	180.00	12,752.60	-10,026.91	576.10	10,026.91	0.00	0.00	0.00

TD at 22695.43' MD - PBHL (S1-12F 91H)

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL (S1-12F 91H)	0.00	0.00	0.00	0.00	0.00	393,463.51	789,058.19	32° 4' 45.071 N	103° 32' 0.697 W
- plan hits target center									
- Point									
PBHL (S1-12F 91H)	0.00	0.00	12,752.60	-10,026.91	576.10	383,436.60	789,634.29	32° 3' 5.809 N	103° 31' 54.866 W
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
959.60	959.60	Rustler		0.00	
1,328.60	1,328.60	Top of Salt		0.00	
4,883.40	4,875.60	Base of Salt		0.00	
5,126.33	5,117.60	Delaware		0.00	
9,141.61	9,117.60	Lower Brushy Canyon		0.00	
9,313.21	9,288.60	1st BSPG Lime		0.00	
10,269.10	10,243.60	1st BSPG Sand		0.00	
10,533.10	10,507.60	2nd BSPG Lime		0.00	
10,835.10	10,809.60	2nd BSPG Sand		0.00	
11,205.10	11,179.60	3rd BSPG Lime		0.00	
11,940.10	11,914.60	3rd BSPG Sand		0.00	
12,371.51	12,340.83	Wolfcamp		0.30	180.00
12,600.89	12,531.49	Wolfcamp "A"		0.30	180.00
12,775.59	12,635.22	Wolfcamp A 120		0.30	180.00

LEAM Drilling Systems LLC

Planning Report

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Design: Plan #1

Local Co-ordinate Reference: Well 91H
TVD Reference: 3318.6' GE + 21' KB @ 3339.60usft
MD Reference: 3318.6' GE + 21' KB @ 3339.60usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,500.00	2,500.00	0.00	0.00	Start, 1"/100' Build
3,000.00	2,999.37	6.74	20.74	EOB, 5.00° INC
9,200.00	9,175.77	173.72	534.65	Start, 0.50"/100' Drop
10,200.00	10,174.50	187.19	576.13	EOD, 0.00° INC
12,154.15	12,128.65	187.19	576.13	KOP, Start 10"/100' Build
13,051.12	12,701.60	-382.73	576.12	LP, 89.70° INC, 180.00° AZI
22,695.43	12,752.60	-10,026.91	576.10	TD at 22695.43' MD

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Seawolf 1-12 Fed
Well: 91H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.44°

Magnetic Field
Strength: 47999.8snT
Dip Angle: 59.82°
Date: 1/19/2017
Model: HDGM

PROJECT DETAILS: Lea County, NM (NAD-83)

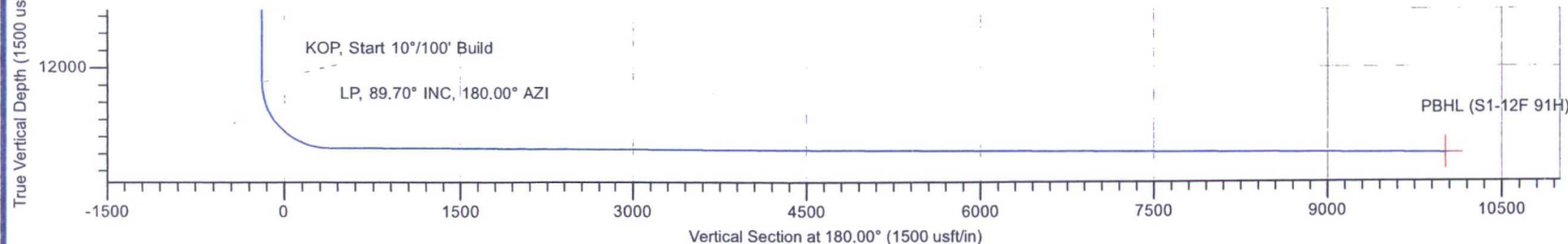
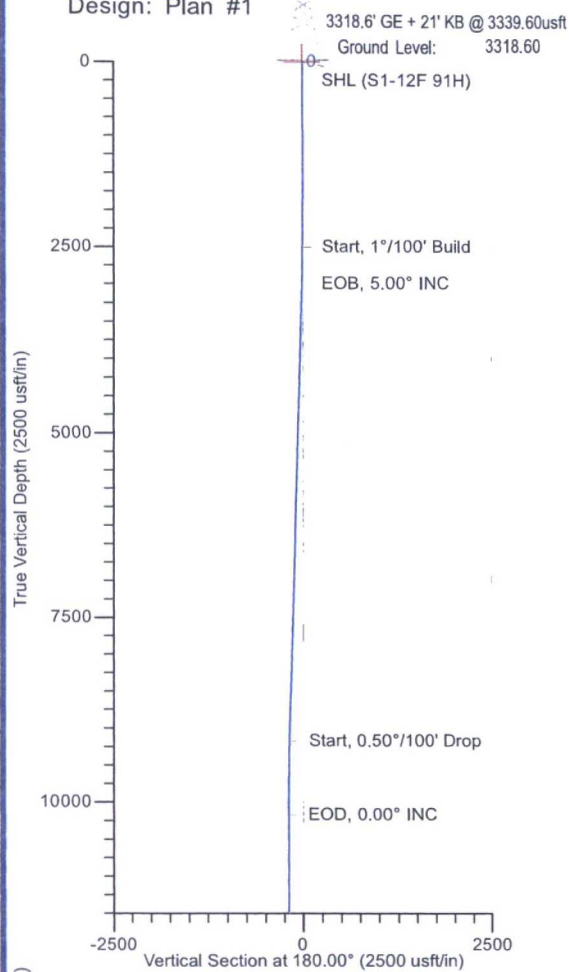
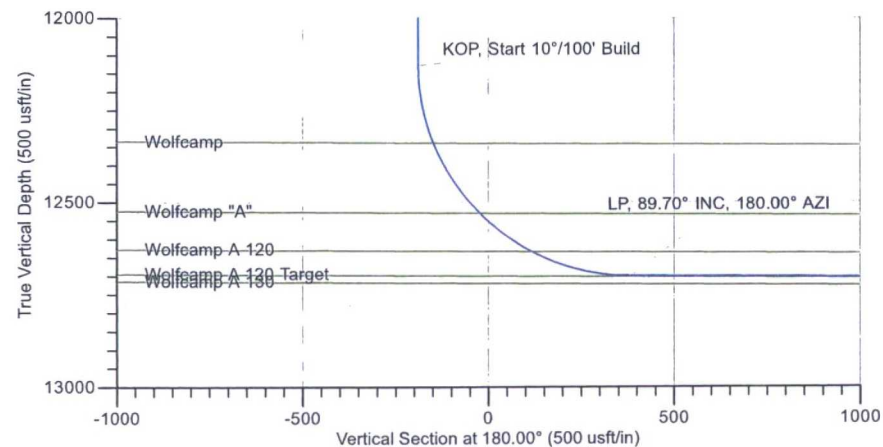
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	Start, 1°/100' Build
3	3000.00	5.00	72.00	2999.37	6.74	20.74	1.00	72.00	-6.74	EOB, 5.00° INC
4	9200.00	5.00	72.00	9175.77	173.72	534.65	0.00	0.00	-173.72	Start, 0.50°/100' Drop
5	10200.00	0.00	0.00	10174.50	187.19	576.13	0.50	180.00	-187.19	EOD, 0.00° INC
6	12154.15	0.00	0.00	12128.65	187.19	576.13	0.00	0.00	-187.19	KOP, Start 10°/100' Build
7	13051.12	89.70	180.00	12701.60	-382.73	576.12	10.00	180.00	382.73	LP, 89.70° INC, 180.00° AZI
8	22695.43	89.70	180.00	12752.60	-10026.91	576.10	0.00	0.00	10026.91	TD at 22695.43' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (S1-12F 91H)	12752.60	-10026.91	576.10	32° 3' 5.809 N	103° 31' 54.866 W
SHL (S1-12F 91H)	0.00	0.00	0.00	32° 4' 45.071 N	103° 32' 0.697 W



RECEIVED
 APR 26 2017
 HOBBS OCD



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (91H/OH)
Seawolf 1-12 Fed
Created By: Brady Deaver
Date: 8:50, January 23 2017
Approved: _____
Date: _____

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Seawolf 1-12 Fed
Well: 91H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.44°

Magnetic Field
Strength: 47999.8snT
Dip Angle: 59.82°
Date: 1/19/2017
Model: HDGM



PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

DESIGN TARGET DETAILS

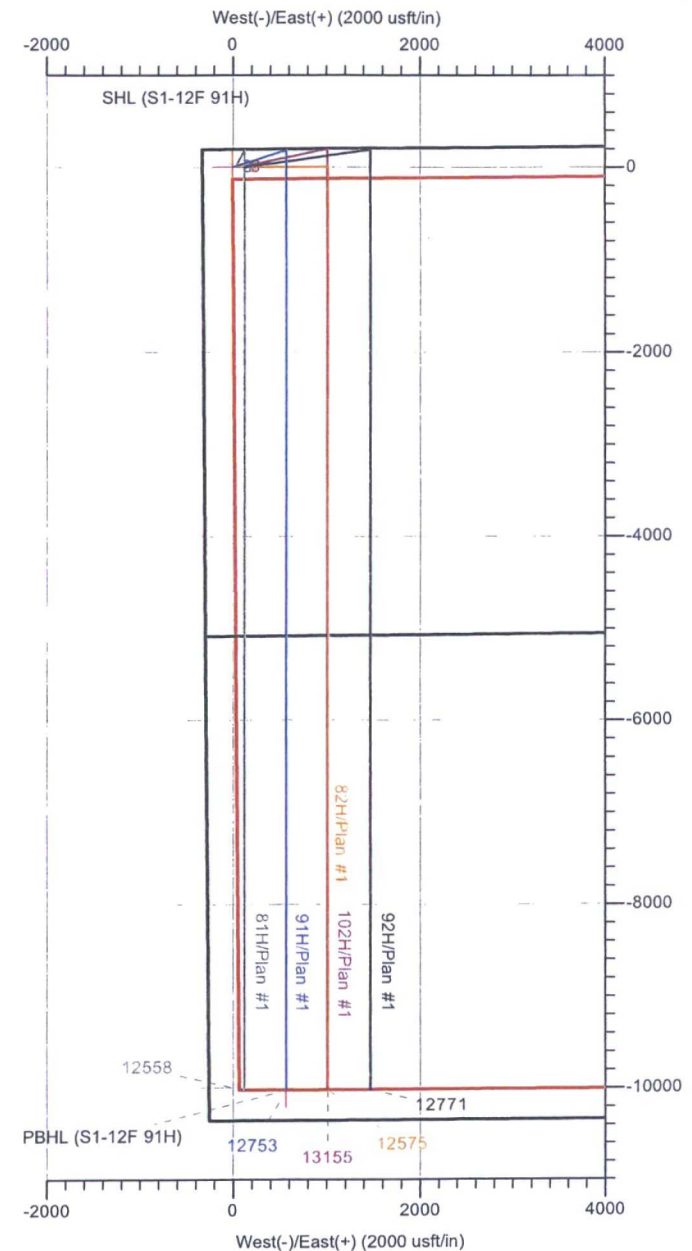
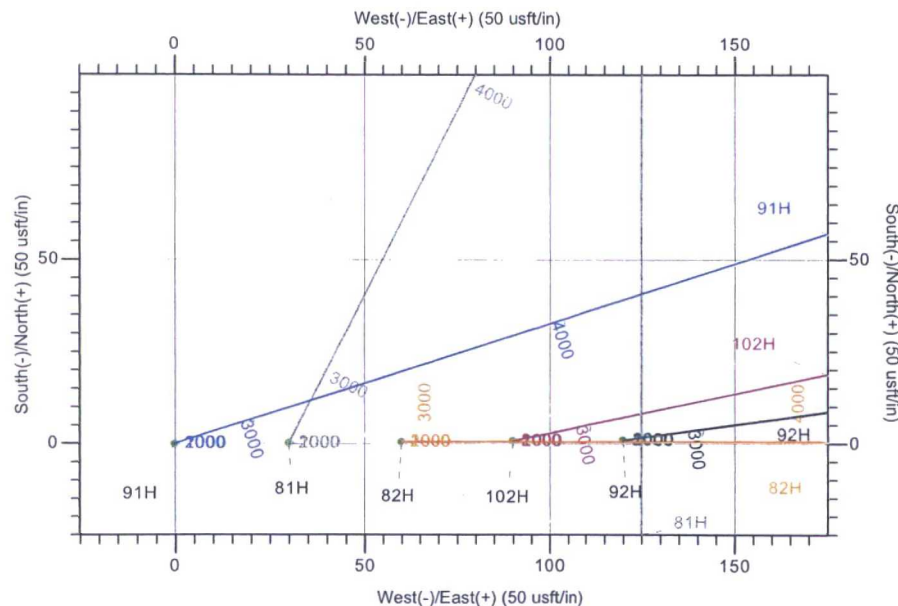
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (S1-12F 91H)	12752.60	-10026.91	576.10	383436.60	789634.29	32° 3' 5.809 N	103° 31' 54.866 W
SHL (S1-12F 91H)	0.00	0.00	0.00	393463.51	789058.19	32° 4' 45.071 N	103° 32' 0.697 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	Start, 1°/100' Build
3	3000.00	5.00	72.00	2999.37	6.74	20.74	1.00	72.00	-6.74	EOB, 5.00° INC
4	9200.00	5.00	72.00	9175.77	173.72	534.65	0.00	0.00	-173.72	Start, 0.50°/100' Drop
5	10200.00	0.00	0.00	10174.50	187.19	576.13	0.50	180.00	-187.19	EOD, 0.00° INC
6	12154.15	0.00	0.00	12128.65	187.19	576.13	0.00	0.00	-187.19	KOP, Start 10°/100' Build
7	13051.12	89.70	180.00	12701.60	-382.73	576.12	10.00	180.00	382.73	LP, 89.70° INC, 180.00° AZI
8	22695.43	89.70	180.00	12752.60	-10026.91	576.10	0.00	0.00	10026.91	TD at 22695.43' MD

LINE CALLS

KOP: 17' FNL, 907' FWL
POE: 58' FNL, 907' FWL



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (91H/OH)
Seawolf 1-12 Fed
Created By: Brady Deaver
Date: 8:57, January 23 2017
Approved: _____ Date: _____