

HOEBS OCD

APR 26 2017

RECEIVED

DEVON ENERGY

Lea County, NM (NAD-83)
Seawolf 1-12 Fed
93H

OH

Plan: Plan #1

Standard Planning Report

27 October, 2016

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Seawolf 1-12 Fed
Well: 93H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 93H
TVD Reference: 3317 @ 3340.50usft
MD Reference: 3317 @ 3340.50usft
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:	393,465.79 usft	Latitude:	32° 4' 45.071 N
From:	Map	Easting:	789,363.16 usft	Longitude:	103° 31' 57.152 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	93H					
Well Position	+N/-S	54.07 usft	Northing:	393,519.86 usft	Latitude:	32° 4' 45.469 N
	+E/-W	1,861.35 usft	Easting:	791,224.51 usft	Longitude:	103° 31' 35.514 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,317.00 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/27/2016	6.88	59.82	48,024

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	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,500.00	5.00	60.00	4,499.37	10.90	18.88	1.00	1.00	0.00	60.00	
6,500.00	5.00	60.00	6,491.76	98.06	169.84	0.00	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,490.49	119.86	207.60	0.50	-0.50	0.00	180.00	
12,284.05	0.00	0.00	12,274.54	119.86	207.60	0.00	0.00	0.00	0.00	
13,032.28	89.79	180.00	12,752.00	-355.84	207.60	12.00	12.00	-24.06	180.00	
22,748.68	89.79	180.00	12,788.00	-10,072.17	207.50	0.00	0.00	0.00	0.00	PBHL (S1-12F93H)

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Local Co-ordinate Reference: Well 93H
 TVD Reference: 3317 @ 3340.50usft
 MD Reference: 3317 @ 3340.50usft
 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 (S1-12F93H)									
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
965.50	0.00	0.00	965.50	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
1,315.50	0.00	0.00	1,315.50	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
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start 1°/100' Build									
4,100.00	1.00	60.00	4,100.00	0.44	0.76	-0.44	1.00	1.00	0.00
4,200.00	2.00	60.00	4,199.96	1.75	3.02	-1.75	1.00	1.00	0.00
4,300.00	3.00	60.00	4,299.86	3.93	6.80	-3.93	1.00	1.00	0.00
4,400.00	4.00	60.00	4,399.68	6.98	12.09	-6.98	1.00	1.00	0.00
4,500.00	5.00	60.00	4,499.37	10.90	18.88	-10.90	1.00	1.00	0.00
EOB, 5.00° Inc									
4,600.00	5.00	60.00	4,598.99	15.26	26.43	-15.26	0.00	0.00	0.00

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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)
4,700.00	5.00	60.00	4,698.60	19.62	33.98	-19.62	0.00	0.00	0.00
4,800.00	5.00	60.00	4,798.22	23.97	41.53	-23.97	0.00	0.00	0.00
4,900.00	5.00	60.00	4,897.84	28.33	49.07	-28.33	0.00	0.00	0.00
4,917.62	5.00	60.00	4,915.39	29.10	50.40	-29.10	0.00	0.00	0.00
Base of Salt									
5,000.00	5.00	60.00	4,997.46	32.69	56.62	-32.69	0.00	0.00	0.00
5,100.00	5.00	60.00	5,097.08	37.05	64.17	-37.05	0.00	0.00	0.00
5,148.46	5.00	60.00	5,145.36	39.16	67.83	-39.16	0.00	0.00	0.00
Delaware									
5,200.00	5.00	60.00	5,196.70	41.41	71.72	-41.41	0.00	0.00	0.00
5,300.00	5.00	60.00	5,296.32	45.76	79.27	-45.76	0.00	0.00	0.00
5,400.00	5.00	60.00	5,395.94	50.12	86.81	-50.12	0.00	0.00	0.00
5,500.00	5.00	60.00	5,495.56	54.48	94.36	-54.48	0.00	0.00	0.00
5,600.00	5.00	60.00	5,595.18	58.84	101.91	-58.84	0.00	0.00	0.00
5,700.00	5.00	60.00	5,694.80	63.19	109.46	-63.19	0.00	0.00	0.00
5,800.00	5.00	60.00	5,794.42	67.55	117.00	-67.55	0.00	0.00	0.00
5,900.00	5.00	60.00	5,894.04	71.91	124.55	-71.91	0.00	0.00	0.00
6,000.00	5.00	60.00	5,993.66	76.27	132.10	-76.27	0.00	0.00	0.00
6,100.00	5.00	60.00	6,093.28	80.63	139.65	-80.63	0.00	0.00	0.00
6,200.00	5.00	60.00	6,192.90	84.98	147.20	-84.98	0.00	0.00	0.00
6,300.00	5.00	60.00	6,292.52	89.34	154.74	-89.34	0.00	0.00	0.00
6,400.00	5.00	60.00	6,392.14	93.70	162.29	-93.70	0.00	0.00	0.00
6,500.00	5.00	60.00	6,491.76	98.06	169.84	-98.06	0.00	0.00	0.00
Start 0.50°/100' Drop									
6,600.00	4.50	60.00	6,591.41	102.20	177.01	-102.20	0.50	-0.50	0.00
6,700.00	4.00	60.00	6,691.14	105.90	183.43	-105.90	0.50	-0.50	0.00
6,800.00	3.50	60.00	6,790.92	109.17	189.09	-109.17	0.50	-0.50	0.00
6,900.00	3.00	60.00	6,890.76	112.01	194.00	-112.01	0.50	-0.50	0.00
7,000.00	2.50	60.00	6,990.65	114.41	198.16	-114.41	0.50	-0.50	0.00
7,100.00	2.00	60.00	7,090.57	116.37	201.56	-116.37	0.50	-0.50	0.00
7,200.00	1.50	60.00	7,190.52	117.90	204.20	-117.90	0.50	-0.50	0.00
7,300.00	1.00	60.00	7,290.50	118.99	206.09	-118.99	0.50	-0.50	0.00
7,400.00	0.50	60.00	7,390.49	119.64	207.23	-119.64	0.50	-0.50	0.00
7,500.00	0.00	0.00	7,490.49	119.86	207.60	-119.86	0.50	-0.50	0.00
EOD, 0.00° Inc									
7,600.00	0.00	0.00	7,590.49	119.86	207.60	-119.86	0.00	0.00	0.00
7,700.00	0.00	0.00	7,690.49	119.86	207.60	-119.86	0.00	0.00	0.00
7,800.00	0.00	0.00	7,790.49	119.86	207.60	-119.86	0.00	0.00	0.00
7,900.00	0.00	0.00	7,890.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,000.00	0.00	0.00	7,990.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,100.00	0.00	0.00	8,090.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,200.00	0.00	0.00	8,190.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,300.00	0.00	0.00	8,290.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,400.00	0.00	0.00	8,390.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,500.00	0.00	0.00	8,490.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,600.00	0.00	0.00	8,590.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,700.00	0.00	0.00	8,690.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,800.00	0.00	0.00	8,790.49	119.86	207.60	-119.86	0.00	0.00	0.00
8,900.00	0.00	0.00	8,890.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,000.00	0.00	0.00	8,990.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,100.00	0.00	0.00	9,090.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,200.00	0.00	0.00	9,190.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,209.57	0.00	0.00	9,200.06	119.86	207.60	-119.86	0.00	0.00	0.00

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Lower Brushy Canyon									
9,300.00	0.00	0.00	9,290.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,344.57	0.00	0.00	9,335.06	119.86	207.60	-119.86	0.00	0.00	0.00
1st BSPG Lime									
9,400.00	0.00	0.00	9,390.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,500.00	0.00	0.00	9,490.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,600.00	0.00	0.00	9,590.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,700.00	0.00	0.00	9,690.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,800.00	0.00	0.00	9,790.49	119.86	207.60	-119.86	0.00	0.00	0.00
9,900.00	0.00	0.00	9,890.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,000.00	0.00	0.00	9,990.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,100.00	0.00	0.00	10,090.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,200.00	0.00	0.00	10,190.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,284.57	0.00	0.00	10,275.06	119.86	207.60	-119.86	0.00	0.00	0.00
1st BSPG Sand									
10,300.00	0.00	0.00	10,290.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,400.00	0.00	0.00	10,390.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,500.00	0.00	0.00	10,490.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,524.57	0.00	0.00	10,515.06	119.86	207.60	-119.86	0.00	0.00	0.00
2nd BSPG Lime									
10,600.00	0.00	0.00	10,590.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,700.00	0.00	0.00	10,690.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,800.00	0.00	0.00	10,790.49	119.86	207.60	-119.86	0.00	0.00	0.00
10,874.57	0.00	0.00	10,865.06	119.86	207.60	-119.86	0.00	0.00	0.00
2nd BSPG Sand									
10,900.00	0.00	0.00	10,890.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,000.00	0.00	0.00	10,990.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,100.00	0.00	0.00	11,090.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,200.00	0.00	0.00	11,190.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,300.00	0.00	0.00	11,290.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,334.57	0.00	0.00	11,325.06	119.86	207.60	-119.86	0.00	0.00	0.00
3rd BSPG Lime									
11,400.00	0.00	0.00	11,390.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,500.00	0.00	0.00	11,490.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,600.00	0.00	0.00	11,590.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,700.00	0.00	0.00	11,690.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,800.00	0.00	0.00	11,790.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,900.00	0.00	0.00	11,890.49	119.86	207.60	-119.86	0.00	0.00	0.00
11,929.57	0.00	0.00	11,920.06	119.86	207.60	-119.86	0.00	0.00	0.00
3rd BSPG Sand									
12,000.00	0.00	0.00	11,990.49	119.86	207.60	-119.86	0.00	0.00	0.00
12,100.00	0.00	0.00	12,090.49	119.86	207.60	-119.86	0.00	0.00	0.00
12,200.00	0.00	0.00	12,190.49	119.86	207.60	-119.86	0.00	0.00	0.00
12,284.05	0.00	0.00	12,274.54	119.86	207.60	-119.86	0.00	0.00	0.00
KOP, Start 12°/100' Build									
12,300.00	1.91	180.00	12,290.48	119.59	207.60	-119.59	12.00	12.00	0.00
12,325.00	4.91	180.00	12,315.44	118.10	207.60	-118.10	12.00	12.00	0.00
12,350.00	7.91	180.00	12,340.28	115.31	207.60	-115.31	12.00	12.00	0.00
12,375.00	10.91	180.00	12,364.94	111.22	207.60	-111.22	12.00	12.00	0.00
12,380.26	11.55	180.00	12,370.10	110.20	207.60	-110.20	12.00	12.00	0.00
Wolfcamp									
12,400.00	13.91	180.00	12,389.35	105.85	207.60	-105.85	12.00	12.00	0.00
12,425.00	16.91	180.00	12,413.45	99.21	207.60	-99.21	12.00	12.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Single User Db
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Site: Seawolf 1-12 Fed
Well: 93H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 93H
TVD Reference: 3317 @ 3340.50usft
MD Reference: 3317 @ 3340.50usft
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)
12,450.00	19.91	180.00	12,437.17	91.31	207.60	-91.31	12.00	12.00	0.00
12,475.00	22.91	180.00	12,460.44	82.18	207.60	-82.18	12.00	12.00	0.00
12,500.00	25.91	180.00	12,483.20	71.85	207.60	-71.85	12.00	12.00	0.00
12,525.00	28.91	180.00	12,505.39	60.34	207.60	-60.34	12.00	12.00	0.00
12,550.00	31.91	180.00	12,526.95	47.69	207.60	-47.69	12.00	12.00	0.00
12,575.00	34.91	180.00	12,547.81	33.92	207.60	-33.92	12.00	12.00	0.00
12,596.83	37.53	180.00	12,565.42	21.02	207.60	-21.02	12.00	12.00	0.00
Wolfcamp "A"									
12,600.00	37.91	180.00	12,567.93	19.08	207.60	-19.08	12.00	12.00	0.00
12,625.00	40.91	180.00	12,587.24	3.21	207.60	-3.21	12.00	12.00	0.00
12,650.00	43.91	180.00	12,605.70	-13.65	207.60	13.65	12.00	12.00	0.00
12,675.00	46.91	180.00	12,623.24	-31.45	207.60	31.45	12.00	12.00	0.00
12,700.00	49.91	180.00	12,639.83	-50.15	207.60	50.15	12.00	12.00	0.00
12,725.00	52.91	180.00	12,655.43	-69.69	207.60	69.69	12.00	12.00	0.00
12,750.00	55.91	180.00	12,669.97	-90.02	207.60	90.02	12.00	12.00	0.00
12,775.00	58.91	180.00	12,683.43	-111.08	207.60	111.08	12.00	12.00	0.00
12,779.86	59.50	180.00	12,685.92	-115.25	207.60	115.25	12.00	12.00	0.00
Wolfcamp A 120									
12,800.00	61.91	180.00	12,695.78	-132.82	207.60	132.82	12.00	12.00	0.00
12,825.00	64.91	180.00	12,706.96	-155.17	207.60	155.17	12.00	12.00	0.00
12,850.00	67.91	180.00	12,716.97	-178.08	207.60	178.08	12.00	12.00	0.00
12,875.00	70.91	180.00	12,725.75	-201.48	207.60	201.48	12.00	12.00	0.00
12,900.00	73.91	180.00	12,733.31	-225.31	207.60	225.31	12.00	12.00	0.00
12,925.00	76.91	180.00	12,739.60	-249.50	207.60	249.50	12.00	12.00	0.00
12,950.00	79.91	180.00	12,744.62	-273.99	207.60	273.99	12.00	12.00	0.00
12,975.00	82.91	180.00	12,748.35	-298.71	207.60	298.71	12.00	12.00	0.00
13,000.00	85.91	180.00	12,750.79	-323.58	207.60	323.58	12.00	12.00	0.00
13,025.00	88.91	180.00	12,751.92	-348.56	207.60	348.56	12.00	12.00	0.00
13,032.28	89.79	180.00	12,752.00	-355.84	207.60	355.84	12.00	12.00	0.00
LP, 89.79° Inc, 180.00° Azm									
13,100.00	89.79	180.00	12,752.25	-423.55	207.60	423.55	0.00	0.00	0.00
13,200.00	89.79	180.00	12,752.62	-523.55	207.60	523.55	0.00	0.00	0.00
13,300.00	89.79	180.00	12,752.99	-623.55	207.60	623.55	0.00	0.00	0.00
13,400.00	89.79	180.00	12,753.36	-723.55	207.59	723.55	0.00	0.00	0.00
13,500.00	89.79	180.00	12,753.73	-823.55	207.59	823.55	0.00	0.00	0.00
13,600.00	89.79	180.00	12,754.10	-923.55	207.59	923.55	0.00	0.00	0.00
13,700.00	89.79	180.00	12,754.47	-1,023.55	207.59	1,023.55	0.00	0.00	0.00
13,800.00	89.79	180.00	12,754.84	-1,123.55	207.59	1,123.55	0.00	0.00	0.00
13,900.00	89.79	180.00	12,755.21	-1,223.55	207.59	1,223.55	0.00	0.00	0.00
14,000.00	89.79	180.00	12,755.58	-1,323.55	207.59	1,323.55	0.00	0.00	0.00
14,100.00	89.79	180.00	12,755.95	-1,423.55	207.59	1,423.55	0.00	0.00	0.00
14,200.00	89.79	180.00	12,756.32	-1,523.55	207.59	1,523.55	0.00	0.00	0.00
14,300.00	89.79	180.00	12,756.70	-1,623.55	207.59	1,623.55	0.00	0.00	0.00
14,400.00	89.79	180.00	12,757.07	-1,723.55	207.58	1,723.55	0.00	0.00	0.00
14,500.00	89.79	180.00	12,757.44	-1,823.54	207.58	1,823.54	0.00	0.00	0.00
14,600.00	89.79	180.00	12,757.81	-1,923.54	207.58	1,923.54	0.00	0.00	0.00
14,700.00	89.79	180.00	12,758.18	-2,023.54	207.58	2,023.54	0.00	0.00	0.00
14,800.00	89.79	180.00	12,758.55	-2,123.54	207.58	2,123.54	0.00	0.00	0.00
14,900.00	89.79	180.00	12,758.92	-2,223.54	207.58	2,223.54	0.00	0.00	0.00
15,000.00	89.79	180.00	12,759.29	-2,323.54	207.58	2,323.54	0.00	0.00	0.00
15,100.00	89.79	180.00	12,759.66	-2,423.54	207.58	2,423.54	0.00	0.00	0.00
15,200.00	89.79	180.00	12,760.03	-2,523.54	207.58	2,523.54	0.00	0.00	0.00
15,300.00	89.79	180.00	12,760.40	-2,623.54	207.58	2,623.54	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

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Project: Lea County, NM (NAD-83)
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Well: 93H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 93H
TVD Reference: 3317 @ 3340.50usft
MD Reference: 3317 @ 3340.50usft
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)
15,400.00	89.79	180.00	12,760.77	-2,723.54	207.57	2,723.54	0.00	0.00	0.00
15,500.00	89.79	180.00	12,761.14	-2,823.54	207.57	2,823.54	0.00	0.00	0.00
15,600.00	89.79	180.00	12,761.51	-2,923.54	207.57	2,923.54	0.00	0.00	0.00
15,700.00	89.79	180.00	12,761.88	-3,023.54	207.57	3,023.54	0.00	0.00	0.00
15,800.00	89.79	180.00	12,762.25	-3,123.54	207.57	3,123.54	0.00	0.00	0.00
15,900.00	89.79	180.00	12,762.62	-3,223.54	207.57	3,223.54	0.00	0.00	0.00
16,000.00	89.79	180.00	12,762.99	-3,323.53	207.57	3,323.53	0.00	0.00	0.00
16,100.00	89.79	180.00	12,763.36	-3,423.53	207.57	3,423.53	0.00	0.00	0.00
16,200.00	89.79	180.00	12,763.74	-3,523.53	207.57	3,523.53	0.00	0.00	0.00
16,300.00	89.79	180.00	12,764.11	-3,623.53	207.57	3,623.53	0.00	0.00	0.00
16,400.00	89.79	180.00	12,764.48	-3,723.53	207.56	3,723.53	0.00	0.00	0.00
16,500.00	89.79	180.00	12,764.85	-3,823.53	207.56	3,823.53	0.00	0.00	0.00
16,600.00	89.79	180.00	12,765.22	-3,923.53	207.56	3,923.53	0.00	0.00	0.00
16,700.00	89.79	180.00	12,765.59	-4,023.53	207.56	4,023.53	0.00	0.00	0.00
16,800.00	89.79	180.00	12,765.96	-4,123.53	207.56	4,123.53	0.00	0.00	0.00
16,900.00	89.79	180.00	12,766.33	-4,223.53	207.56	4,223.53	0.00	0.00	0.00
17,000.00	89.79	180.00	12,766.70	-4,323.53	207.56	4,323.53	0.00	0.00	0.00
17,100.00	89.79	180.00	12,767.07	-4,423.53	207.56	4,423.53	0.00	0.00	0.00
17,200.00	89.79	180.00	12,767.44	-4,523.53	207.56	4,523.53	0.00	0.00	0.00
17,300.00	89.79	180.00	12,767.81	-4,623.53	207.56	4,623.53	0.00	0.00	0.00
17,400.00	89.79	180.00	12,768.18	-4,723.53	207.55	4,723.53	0.00	0.00	0.00
17,500.00	89.79	180.00	12,768.55	-4,823.52	207.55	4,823.52	0.00	0.00	0.00
17,600.00	89.79	180.00	12,768.92	-4,923.52	207.55	4,923.52	0.00	0.00	0.00
17,700.00	89.79	180.00	12,769.29	-5,023.52	207.55	5,023.52	0.00	0.00	0.00
17,800.00	89.79	180.00	12,769.66	-5,123.52	207.55	5,123.52	0.00	0.00	0.00
17,900.00	89.79	180.00	12,770.03	-5,223.52	207.55	5,223.52	0.00	0.00	0.00
18,000.00	89.79	180.00	12,770.40	-5,323.52	207.55	5,323.52	0.00	0.00	0.00
18,100.00	89.79	180.00	12,770.78	-5,423.52	207.55	5,423.52	0.00	0.00	0.00
18,200.00	89.79	180.00	12,771.15	-5,523.52	207.55	5,523.52	0.00	0.00	0.00
18,300.00	89.79	180.00	12,771.52	-5,623.52	207.55	5,623.52	0.00	0.00	0.00
18,400.00	89.79	180.00	12,771.89	-5,723.52	207.54	5,723.52	0.00	0.00	0.00
18,500.00	89.79	180.00	12,772.26	-5,823.52	207.54	5,823.52	0.00	0.00	0.00
18,600.00	89.79	180.00	12,772.63	-5,923.52	207.54	5,923.52	0.00	0.00	0.00
18,700.00	89.79	180.00	12,773.00	-6,023.52	207.54	6,023.52	0.00	0.00	0.00
18,800.00	89.79	180.00	12,773.37	-6,123.52	207.54	6,123.52	0.00	0.00	0.00
18,900.00	89.79	180.00	12,773.74	-6,223.51	207.54	6,223.51	0.00	0.00	0.00
19,000.00	89.79	180.00	12,774.11	-6,323.51	207.54	6,323.51	0.00	0.00	0.00
19,100.00	89.79	180.00	12,774.48	-6,423.51	207.54	6,423.51	0.00	0.00	0.00
19,200.00	89.79	180.00	12,774.85	-6,523.51	207.54	6,523.51	0.00	0.00	0.00
19,300.00	89.79	180.00	12,775.22	-6,623.51	207.54	6,623.51	0.00	0.00	0.00
19,400.00	89.79	180.00	12,775.59	-6,723.51	207.53	6,723.51	0.00	0.00	0.00
19,500.00	89.79	180.00	12,775.96	-6,823.51	207.53	6,823.51	0.00	0.00	0.00
19,600.00	89.79	180.00	12,776.33	-6,923.51	207.53	6,923.51	0.00	0.00	0.00
19,700.00	89.79	180.00	12,776.70	-7,023.51	207.53	7,023.51	0.00	0.00	0.00
19,800.00	89.79	180.00	12,777.07	-7,123.51	207.53	7,123.51	0.00	0.00	0.00
19,900.00	89.79	180.00	12,777.45	-7,223.51	207.53	7,223.51	0.00	0.00	0.00
20,000.00	89.79	180.00	12,777.82	-7,323.51	207.53	7,323.51	0.00	0.00	0.00
20,100.00	89.79	180.00	12,778.19	-7,423.51	207.53	7,423.51	0.00	0.00	0.00
20,200.00	89.79	180.00	12,778.56	-7,523.51	207.53	7,523.51	0.00	0.00	0.00
20,300.00	89.79	180.00	12,778.93	-7,623.51	207.52	7,623.51	0.00	0.00	0.00
20,400.00	89.79	180.00	12,779.30	-7,723.50	207.52	7,723.50	0.00	0.00	0.00
20,500.00	89.79	180.00	12,779.67	-7,823.50	207.52	7,823.50	0.00	0.00	0.00
20,600.00	89.79	180.00	12,780.04	-7,923.50	207.52	7,923.50	0.00	0.00	0.00
20,700.00	89.79	180.00	12,780.41	-8,023.50	207.52	8,023.50	0.00	0.00	0.00

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 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)
20,800.00	89.79	180.00	12,780.78	-8,123.50	207.52	8,123.50	0.00	0.00	0.00
20,900.00	89.79	180.00	12,781.15	-8,223.50	207.52	8,223.50	0.00	0.00	0.00
21,000.00	89.79	180.00	12,781.52	-8,323.50	207.52	8,323.50	0.00	0.00	0.00
21,100.00	89.79	180.00	12,781.89	-8,423.50	207.52	8,423.50	0.00	0.00	0.00
21,200.00	89.79	180.00	12,782.26	-8,523.50	207.52	8,523.50	0.00	0.00	0.00
21,300.00	89.79	180.00	12,782.63	-8,623.50	207.51	8,623.50	0.00	0.00	0.00
21,400.00	89.79	180.00	12,783.00	-8,723.50	207.51	8,723.50	0.00	0.00	0.00
21,500.00	89.79	180.00	12,783.37	-8,823.50	207.51	8,823.50	0.00	0.00	0.00
21,600.00	89.79	180.00	12,783.74	-8,923.50	207.51	8,923.50	0.00	0.00	0.00
21,700.00	89.79	180.00	12,784.11	-9,023.50	207.51	9,023.50	0.00	0.00	0.00
21,800.00	89.79	180.00	12,784.49	-9,123.49	207.51	9,123.49	0.00	0.00	0.00
21,900.00	89.79	180.00	12,784.86	-9,223.49	207.51	9,223.49	0.00	0.00	0.00
22,000.00	89.79	180.00	12,785.23	-9,323.49	207.51	9,323.49	0.00	0.00	0.00
22,100.00	89.79	180.00	12,785.60	-9,423.49	207.51	9,423.49	0.00	0.00	0.00
22,200.00	89.79	180.00	12,785.97	-9,523.49	207.51	9,523.49	0.00	0.00	0.00
22,300.00	89.79	180.00	12,786.34	-9,623.49	207.50	9,623.49	0.00	0.00	0.00
22,400.00	89.79	180.00	12,786.71	-9,723.49	207.50	9,723.49	0.00	0.00	0.00
22,500.00	89.79	180.00	12,787.08	-9,823.49	207.50	9,823.49	0.00	0.00	0.00
22,600.00	89.79	180.00	12,787.45	-9,923.49	207.50	9,923.49	0.00	0.00	0.00
22,700.00	89.79	180.00	12,787.82	-10,023.49	207.50	10,023.49	0.00	0.00	0.00
22,748.68	89.79	180.00	12,788.00	-10,072.17	207.50	10,072.17	0.00	0.00	0.00

TD at 22748.68' MD - PBHL (S1-12F93H)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (S1-12F93H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	393,519.86	791,224.51	32° 4' 45.469 N	103° 31' 35.514 W
PBHL (S1-12F93H) - plan hits target center - Point	0.00	0.00	12,788.00	-10,072.17	207.50	383,447.69	791,432.01	32° 3' 5.786 N	103° 31' 33.978 W

LEAM Drilling Systems LLC

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Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
965.50	965.50	Rustler		0.21	180.00
1,315.50	1,315.50	Top of Salt		0.21	180.00
4,917.62	4,915.39	Base of Salt		0.21	180.00
5,148.46	5,145.36	Delaware		0.21	180.00
9,209.57	9,200.06	Lower Brushy Canyon		0.21	180.00
9,344.57	9,335.06	1st BSPG Lime		0.21	180.00
10,284.57	10,275.06	1st BSPG Sand		0.21	180.00
10,524.57	10,515.06	2nd BSPG Lime		0.21	180.00
10,874.57	10,865.06	2nd BSPG Sand		0.21	180.00
11,334.57	11,325.06	3rd BSPG Lime		0.21	180.00
11,929.57	11,920.06	3rd BSPG Sand		0.21	180.00
12,380.26	12,370.10	Wolfcamp		0.21	180.00
12,596.83	12,565.42	Wolfcamp "A"		0.21	180.00
12,779.86	12,685.92	Wolfcamp A 120		0.21	180.00

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,000.00	4,000.00	0.00	0.00	Start 1°/100' Build
4,500.00	4,499.37	10.90	18.88	EOB, 5.00° Inc
6,500.00	6,491.76	98.06	169.84	Start 0.50°/100' Drop
7,500.00	7,490.49	119.86	207.60	EOD, 0.00° Inc
12,284.05	12,274.54	119.86	207.60	KOP, Start 12°/100' Build
13,032.28	12,752.00	-355.84	207.60	LP, 89.79° Inc, 180.00° Azm
22,748.68	12,788.00	-10,072.17	207.50	TD at 22748.68' MD