

HOBBS OCD
SEP 21 2018
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Legacy Reserves

Lea County, NM (NAD83)

Lea

Lea Unit #43H

Original Wellbore

Design: Original Wellbore

Daily Survey Report

05 May, 2018



Company:	Legacy Reserves	Local Co-ordinate Reference:	Well Lea Unit #43H
Project:	Lea County, NM (NAD83)	TVD Reference:	RKB @ 3695.0usft
Site:	Lea	MD Reference:	RKB @ 3695.0usft
Well:	Lea Unit #43H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

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	Lea		
Site Position:		Northing:	567,587.00 usft
From:	Map	Easting:	797,256.10 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 33' 27.391 N
		Longitude:	103° 30' 9.733 W
		Grid Convergence:	0.45 °

Well	Lea Unit #43H		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	3,695.0 usft
		Latitude:	32° 33' 27.377 N
		Longitude:	103° 30' 25.158 W
		Ground Level:	3,677.0 usft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	HDGM	4/6/2018	(°)	(°)	(nT)
			6.73	60.53	48,239

Design	Original Wellbore				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	0.50	

Survey Program	Date 5/5/2018				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	5,500.0	Gyro Surveys (Original Wellbore)	GYRO-MWD	Gyro MWD	
5,648.0	17,373.0	As Drilled (Original Wellbore)	MWD+HDGM	OWSG MWD + HDGM	

Survey									
MD	Inc	Azi (azimuth)	TVD	V. Sec	N/S	E/W	DLeg		
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00		
100.0	0.17	3.53	100.0	0.1	0.1	0.0	0.17		
200.0	0.87	359.37	200.0	1.1	1.1	0.0	0.70		
300.0	1.90	3.90	300.0	3.5	3.5	0.1	1.04		
400.0	2.14	11.73	399.9	7.0	7.0	0.6	0.37		
500.0	1.97	21.85	499.8	10.4	10.4	1.6	0.40		
600.0	1.79	33.98	599.8	13.3	13.3	3.1	0.44		
700.0	1.72	38.99	699.7	15.8	15.7	5.0	0.17		
800.0	1.63	37.58	799.7	18.1	18.0	6.8	0.10		
900.0	1.59	36.98	899.7	20.3	20.3	8.5	0.04		
1,000.0	1.55	43.57	999.6	22.4	22.3	10.2	0.18		

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1,100.0	1.11	79.35	1,099.6	23.6	23.5	12.1	0.92
1,200.0	1.08	116.64	1,199.6	23.4	23.3	13.9	0.70
1,300.0	0.74	131.72	1,299.6	22.5	22.4	15.2	0.41
1,400.0	0.64	138.13	1,399.6	21.7	21.6	16.1	0.13
1,500.0	0.31	135.04	1,499.6	21.1	21.0	16.7	0.33
1,600.0	0.20	187.98	1,599.6	20.7	20.6	16.8	0.25
1,700.0	0.10	13.67	1,699.6	20.6	20.5	16.8	0.30
1,800.0	0.28	206.88	1,799.6	20.5	20.4	16.7	0.38
1,900.0	0.40	115.70	1,899.6	20.1	20.0	16.9	0.49
2,000.0	0.16	69.01	1,999.5	20.0	19.9	17.4	0.31
2,100.0	0.83	57.21	2,099.5	20.5	20.3	18.1	0.67
2,200.0	1.33	78.22	2,199.5	21.1	21.0	19.9	0.63
2,300.0	1.43	89.31	2,299.5	21.4	21.2	22.2	0.28
2,400.0	1.45	77.63	2,399.5	21.7	21.5	24.7	0.29
2,500.0	1.20	87.72	2,499.4	22.1	21.8	27.0	0.34
2,600.0	1.00	74.12	2,599.4	22.4	22.1	28.9	0.33
2,700.0	1.34	83.99	2,699.4	22.7	22.5	30.9	0.39
2,800.0	0.74	59.73	2,799.4	23.2	22.9	32.6	0.73
2,900.0	1.05	64.68	2,899.4	23.9	23.6	34.0	0.32
3,000.0	0.93	68.77	2,999.4	24.6	24.3	35.6	0.14
3,100.0	1.28	60.92	3,099.3	25.5	25.1	37.3	0.38
3,200.0	1.31	75.05	3,199.3	26.3	26.0	39.4	0.32
3,300.0	1.47	82.49	3,299.3	26.8	26.4	41.8	0.24
3,400.0	1.49	81.39	3,399.3	27.2	26.8	44.3	0.03
3,500.0	1.50	73.72	3,499.2	27.8	27.4	46.9	0.20
3,600.0	1.44	80.77	3,599.2	28.4	27.9	49.4	0.19
3,700.0	1.43	64.21	3,699.2	29.1	28.7	51.7	0.41
3,800.0	1.15	66.44	3,799.1	30.1	29.6	53.8	0.28
3,900.0	1.42	92.55	3,899.1	30.5	30.0	55.9	0.64
4,000.0	1.26	98.63	3,999.1	30.3	29.8	58.3	0.21
4,100.0	1.20	80.63	4,099.1	30.3	29.8	60.4	0.39
4,200.0	1.38	71.24	4,199.0	30.9	30.3	62.6	0.28
4,300.0	1.36	71.82	4,299.0	31.6	31.1	64.8	0.02
4,400.0	1.36	79.26	4,399.0	32.3	31.7	67.1	0.18
4,500.0	1.23	65.52	4,498.9	32.9	32.3	69.3	0.34
4,600.0	1.39	78.10	4,598.9	33.7	33.0	71.4	0.33
4,700.0	1.67	84.63	4,698.9	34.1	33.4	74.1	0.33
4,800.0	1.79	83.51	4,798.8	34.4	33.7	77.1	0.12
4,900.0	1.95	88.90	4,898.8	34.6	33.9	80.3	0.24
5,000.0	2.50	98.00	4,998.7	34.4	33.7	84.2	0.65
5,100.0	3.28	93.83	5,098.6	34.0	33.2	89.2	0.81
5,200.0	4.07	96.99	5,198.4	33.4	32.5	95.6	0.82
5,300.0	4.77	103.80	5,298.1	32.0	31.1	103.1	0.87
5,400.0	5.36	103.87	5,397.7	30.0	29.0	111.7	0.59

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Survey

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5,500.0	6.09	104.55	5,497.2	27.6	26.6	121.4	0.73
5,648.0	5.71	103.53	5,644.4	24.1	22.9	136.1	0.27
5,742.0	4.58	106.06	5,738.0	22.0	20.7	144.3	1.23
5,836.0	2.79	114.00	5,831.8	20.1	18.8	150.0	1.98
5,931.0	1.86	127.32	5,926.7	18.2	16.9	153.3	1.13
6,025.0	1.72	135.82	6,020.7	16.3	15.0	155.5	0.32
6,119.0	1.56	162.82	6,114.7	14.1	12.7	156.9	0.83
6,213.0	1.19	178.52	6,208.6	11.9	10.5	157.3	0.56
6,308.0	1.23	189.24	6,303.6	9.9	8.5	157.1	0.24
6,404.0	1.24	194.77	6,399.6	7.9	6.5	156.7	0.12
6,499.0	1.17	200.09	6,494.6	6.0	4.6	156.1	0.14
6,593.0	1.20	202.89	6,588.6	4.2	2.8	155.4	0.07
6,688.0	1.44	204.86	6,683.5	2.2	0.8	154.5	0.26
6,782.0	1.39	222.82	6,777.5	0.2	-1.1	153.2	0.47
6,876.0	1.47	225.56	6,871.5	-1.5	-2.8	151.6	0.11
6,971.0	1.36	223.33	6,966.4	-3.1	-4.5	150.0	0.13
7,065.0	1.62	217.74	7,060.4	-5.0	-6.3	148.4	0.32
7,159.0	1.45	214.72	7,154.4	-7.1	-8.4	146.9	0.20
7,254.0	1.66	239.53	7,249.3	-8.8	-10.0	145.0	0.74
7,348.0	2.10	243.11	7,343.3	-10.3	-11.5	142.3	0.48
7,443.0	1.99	251.48	7,438.2	-11.6	-12.8	139.2	0.33
7,537.0	1.89	247.11	7,532.2	-12.7	-13.9	136.2	0.19
7,631.0	2.21	243.71	7,626.1	-14.2	-15.4	133.2	0.36
7,726.0	2.13	248.83	7,721.0	-15.7	-16.8	129.9	0.22
7,820.0	2.45	249.65	7,815.0	-17.0	-18.1	126.4	0.34
7,914.0	2.52	272.56	7,908.9	-17.7	-18.7	122.4	1.05
8,009.0	2.57	283.43	8,003.8	-17.1	-18.1	118.3	0.51
8,103.0	2.83	290.33	8,097.7	-15.8	-16.9	114.0	0.44
8,197.0	2.78	290.47	8,191.6	-14.3	-15.2	109.7	0.05
8,292.0	2.80	292.33	8,286.5	-12.6	-13.6	105.4	0.10
8,386.0	2.74	284.79	8,380.4	-11.2	-12.1	101.1	0.39
8,480.0	2.92	291.87	8,474.2	-9.8	-10.6	96.7	0.42
8,574.0	3.07	290.02	8,568.1	-8.1	-8.9	92.1	0.19
8,669.0	3.41	288.38	8,663.0	-6.4	-7.1	87.1	0.37
8,763.0	3.48	288.67	8,756.8	-4.6	-5.3	81.7	0.08
8,857.0	3.66	285.92	8,850.6	-2.9	-3.6	76.1	0.26
8,951.0	3.55	283.83	8,944.4	-1.5	-2.1	70.4	0.18
9,054.0	4.46	295.79	9,047.2	1.0	0.4	63.7	1.19
9,101.0	8.00	318.36	9,093.9	4.2	3.7	59.9	9.02
9,148.0	11.53	325.06	9,140.2	10.4	10.0	55.0	7.88
9,204.0	13.73	324.42	9,194.8	20.4	20.0	48.0	3.94
9,243.0	14.99	329.33	9,232.6	28.4	28.1	42.7	4.49
9,290.0	15.70	348.70	9,278.0	39.9	39.5	38.3	10.96
9,337.0	18.70	2.20	9,322.9	53.6	53.3	37.4	10.59
9,384.0	23.16	0.06	9,366.8	70.4	70.1	37.7	9.63

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9,432.0	27.56	359.59	9,410.1	91.0	90.6	37.6	9.18
9,483.0	36.28	1.08	9,453.4	117.9	117.6	37.8	17.17
9,526.0	43.98	1.78	9,486.2	145.6	145.3	38.5	17.94
9,573.0	53.92	3.00	9,517.1	181.0	180.6	40.0	21.24
9,630.0	64.62	2.37	9,546.2	229.9	229.5	42.3	18.80
9,674.0	66.63	2.21	9,564.3	269.9	269.5	43.9	4.58
9,719.0	68.76	1.19	9,581.4	311.5	311.1	45.1	5.18
9,765.0	72.40	359.73	9,596.7	354.9	354.5	45.5	8.46
9,811.0	76.65	358.28	9,609.0	399.2	398.8	44.7	9.73
9,856.0	79.63	357.03	9,618.2	443.2	442.8	42.9	7.16
9,901.0	82.21	356.43	9,625.3	487.5	487.2	40.4	5.88
9,947.0	85.22	354.96	9,630.3	533.1	532.8	36.9	7.27
9,992.0	89.26	354.69	9,632.5	577.8	577.5	32.9	9.00
10,038.0	90.74	354.65	9,632.5	623.6	623.3	28.6	3.22
10,085.0	91.48	355.27	9,631.6	670.3	670.1	24.5	2.05
10,124.3	91.21	356.52	9,630.7	709.5	709.3	21.7	3.25
FTP-Lea Unit 43H							
10,129.0	91.18	356.67	9,630.6	714.2	714.0	21.4	3.25
10,221.0	89.60	357.99	9,630.0	806.0	805.9	17.1	2.24
10,311.0	90.13	358.61	9,630.2	896.0	895.9	14.4	0.91
10,400.0	89.93	359.14	9,630.1	984.9	984.9	12.7	0.64
10,495.0	88.45	359.89	9,631.5	1,079.9	1,079.8	11.9	1.75
10,589.0	88.87	0.23	9,632.8	1,173.9	1,173.8	12.0	1.55
10,684.0	88.42	358.21	9,634.3	1,268.8	1,268.8	10.7	2.62
10,778.0	88.92	358.38	9,636.4	1,362.7	1,362.7	7.9	0.56
10,872.0	91.51	359.83	9,636.1	1,456.7	1,456.7	6.4	3.16
10,966.0	91.18	0.79	9,633.9	1,550.7	1,550.7	6.9	1.08
11,061.0	89.53	0.02	9,633.3	1,645.7	1,645.7	7.6	1.92
11,155.0	90.30	359.75	9,633.4	1,739.7	1,739.7	7.4	0.87
11,249.0	89.97	359.53	9,633.2	1,833.7	1,833.7	6.8	0.42
11,344.0	89.46	0.78	9,633.7	1,928.7	1,928.7	7.1	1.42
11,438.0	89.73	1.27	9,634.3	2,022.6	2,022.6	8.8	0.60
11,532.0	90.97	1.56	9,633.8	2,116.6	2,116.6	11.1	1.35
11,627.0	90.34	1.57	9,632.7	2,211.6	2,211.6	13.7	0.66
11,721.0	90.47	2.05	9,632.0	2,305.6	2,305.5	16.6	0.53
11,816.0	90.71	1.89	9,631.0	2,400.5	2,400.5	19.9	0.30
11,911.0	89.50	0.82	9,630.9	2,495.5	2,495.4	22.2	1.70
12,005.0	90.00	0.92	9,631.3	2,589.5	2,589.4	23.6	0.54
12,099.0	88.99	1.37	9,632.1	2,683.5	2,683.4	25.5	1.16
12,193.0	89.53	1.63	9,633.3	2,777.5	2,777.4	27.9	0.64
12,287.0	90.77	2.16	9,633.1	2,871.5	2,871.3	31.0	1.43
12,381.0	90.54	1.76	9,632.0	2,965.4	2,965.2	34.2	0.49
12,475.0	89.93	0.38	9,631.6	3,059.4	3,059.2	36.0	1.61
12,569.0	90.24	359.24	9,631.5	3,153.4	3,153.2	35.7	1.26

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12,663.0	88.56	357.97	9,632.5	3,247.4	3,247.2	33.4	2.24
12,758.0	89.63	358.74	9,634.0	3,342.3	3,342.1	30.7	1.39
12,851.0	90.74	0.15	9,633.7	3,435.2	3,435.1	29.8	1.93
12,945.0	90.81	359.86	9,632.4	3,529.2	3,529.1	29.8	0.32
13,039.0	91.55	0.05	9,630.5	3,623.2	3,623.1	29.7	0.81
13,132.0	90.91	0.06	9,628.5	3,716.2	3,716.1	29.8	0.69
13,227.0	91.58	0.72	9,626.4	3,811.2	3,811.0	30.4	0.99
13,320.0	91.41	2.00	9,624.0	3,904.1	3,904.0	32.6	1.39
13,414.0	90.47	0.17	9,622.4	3,998.1	3,997.9	34.4	2.19
13,508.0	90.91	0.46	9,621.3	4,092.1	4,091.9	34.9	0.56
13,602.0	91.28	1.01	9,619.5	4,186.1	4,185.9	36.1	0.71
13,696.0	91.14	1.45	9,617.5	4,280.0	4,279.9	38.2	0.49
13,789.0	91.28	1.43	9,615.5	4,373.0	4,372.8	40.5	0.15
13,882.0	91.38	1.12	9,613.4	4,466.0	4,465.8	42.6	0.35
13,975.0	91.28	0.96	9,611.2	4,558.9	4,558.7	44.3	0.20
14,070.0	91.07	1.19	9,609.3	4,653.9	4,653.7	46.0	0.33
14,163.0	90.67	1.14	9,607.9	4,746.9	4,746.7	47.9	0.43
14,258.0	90.20	1.73	9,607.1	4,841.9	4,841.6	50.3	0.79
14,352.0	90.50	2.22	9,606.6	4,935.9	4,935.6	53.5	0.61
14,446.0	90.64	3.11	9,605.6	5,029.8	5,029.5	57.9	0.96
14,540.0	91.51	4.63	9,603.9	5,123.6	5,123.2	64.3	1.86
14,634.0	92.35	4.92	9,600.7	5,217.4	5,216.9	72.1	0.95
14,728.0	91.78	5.17	9,597.3	5,310.9	5,310.4	80.3	0.66
14,822.0	91.88	4.89	9,594.3	5,404.6	5,404.0	88.6	0.32
14,916.0	91.11	3.77	9,591.9	5,498.3	5,497.7	95.7	1.45
15,011.0	89.83	2.83	9,591.1	5,593.2	5,592.6	101.1	1.67
15,104.0	87.98	0.59	9,592.9	5,686.2	5,685.5	103.9	3.12
15,198.0	88.12	357.78	9,596.1	5,780.1	5,779.4	102.6	2.99
15,292.0	88.15	358.67	9,599.1	5,874.0	5,873.3	99.7	0.95
15,386.0	87.82	357.43	9,602.4	5,967.8	5,967.2	96.5	1.36
15,480.0	88.89	356.20	9,605.1	6,061.6	6,061.0	91.3	1.73
15,574.0	88.93	355.43	9,606.9	6,155.2	6,154.7	84.4	0.82
15,668.0	89.33	356.66	9,608.3	6,249.0	6,248.5	77.9	1.38
15,762.0	89.23	356.25	9,609.5	6,342.7	6,342.3	72.1	0.45
15,856.0	89.87	357.89	9,610.3	6,436.5	6,436.2	67.3	1.87
15,950.0	90.57	358.09	9,609.9	6,530.4	6,530.1	64.0	0.77
16,044.0	91.14	358.10	9,608.5	6,624.3	6,624.1	60.9	0.61
16,138.0	91.31	357.86	9,606.5	6,718.2	6,718.0	57.6	0.31
16,231.0	90.60	359.23	9,604.9	6,811.2	6,810.9	55.2	1.66
16,325.0	91.11	359.34	9,603.5	6,905.1	6,904.9	54.0	0.56
16,418.0	91.65	359.91	9,601.3	6,998.1	6,997.9	53.4	0.84
16,512.0	89.97	0.27	9,600.0	7,092.1	7,091.9	53.6	1.83
16,606.0	89.93	0.67	9,600.1	7,186.1	7,185.9	54.3	0.43
16,699.0	89.90	0.86	9,600.2	7,279.1	7,278.9	55.6	0.21

Company:	Legacy Reserves	Local Co-ordinate Reference:	Well Lea Unit #43H
Project:	Lea County, NM (NAD83)	TVD Reference:	RKB @ 3695.0usft
Site:	Lea	MD Reference:	RKB @ 3695.0usft
Well:	Lea Unit #43H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)
16,793.0	90.74	1.29	9,599.7	7,373.1	7,372.9	57.3	1.00
16,886.0	89.46	1.63	9,599.5	7,466.1	7,465.8	59.7	1.42
16,980.0	90.23	1.75	9,599.8	7,560.0	7,559.8	62.5	0.83
17,073.0	90.60	1.82	9,599.1	7,653.0	7,652.7	65.4	0.40
17,167.0	91.51	1.56	9,597.4	7,747.0	7,746.7	68.2	1.01
17,260.0	92.18	2.00	9,594.4	7,839.9	7,839.6	71.0	0.86
17,372.6	92.49	1.90	9,589.8	7,952.4	7,952.0	74.9	0.29
BHL-Lea Unit 43H							
17,373.0	92.49	1.90	9,589.8	7,952.8	7,952.4	74.9	0.29

Checked By: _____	Approved By: _____	Date: _____
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