



Legacy Reserves

Lea County, NM (NAD-27 2015)

Lea Unit #54H

Lea Unit #54H

OH

Design: OH

Standard Survey Report

18 December, 2015



Company:	Legacy Reserves	Local Co-ordinate Reference:	Well Lea Unit #54H
Project:	Lea County, NM (NAD-27 2015)	TVD Reference:	KB @ 3679.00usft (McVay 4)
Site:	Lea Unit #54H	MD Reference:	KB @ 3679.00usft (McVay 4)
Well:	Lea Unit #54H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM (NAD-27 2015)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Lea Unit #54H				
Site Position:		Northing:	580,856.20 usft	Latitude:	32° 35' 39.460 N
From:	Map	Easting:	748,186.30 usft	Longitude:	103° 31' 38.960 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.43 °

Well	Lea Unit #54H					
Well Position	+N/-S	0.00 usft	Northing:	580,856.20 usft	Latitude:	32° 35' 39.460 N
	+E/-W	0.00 usft	Easting:	748,186.30 usft	Longitude:	103° 31' 38.960 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,661.00 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/2/2015	7.15	60.43	48,346

Design	OH				
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	179.63	

Survey Program	Date	12/18/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	9,700.00	VES Gyro #1 (OH)	VES-ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro	
9,896.00	17,971.00	TDS MWD #2 (OH)	MWD	MWD - Standard	

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	
100.00	0.20	236.77	100.00	-0.10	-0.15	0.09	0.20	0.20	0.00	
200.00	0.42	274.00	200.00	-0.16	-0.66	0.16	0.29	0.23	37.24	
300.00	0.37	312.11	300.00	0.08	-1.27	-0.09	0.26	-0.06	38.11	
400.00	0.13	70.38	400.00	0.33	-1.40	-0.34	0.44	-0.24	118.27	
500.00	0.25	77.44	499.99	0.41	-1.09	-0.42	0.12	0.12	7.07	
600.00	0.33	215.89	599.99	0.23	-1.05	-0.24	0.54	0.08	138.45	
700.00	0.32	144.55	699.99	-0.23	-1.05	0.22	0.38	-0.01	-71.34	
800.00	0.18	238.97	799.99	-0.54	-1.03	0.53	0.38	-0.14	94.42	
900.00	0.89	210.68	899.99	-1.29	-1.56	1.28	0.73	0.71	-28.29	

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Wellbore: OH
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TVD Reference: KB @ 3679.00usft (McVay 4)
MD Reference: KB @ 3679.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
1,000.00	0.62	195.19	999.98	-2.48	-2.10	2.47	0.33	-0.27	-15.48
1,100.00	1.00	229.01	1,099.97	-3.58	-2.90	3.56	0.60	0.38	33.82
1,200.00	1.25	232.82	1,199.95	-4.82	-4.43	4.79	0.26	0.25	3.81
1,300.00	1.35	231.85	1,299.92	-6.20	-6.22	6.16	0.10	0.10	-0.97
1,400.00	1.24	234.14	1,399.90	-7.56	-8.02	7.51	0.12	-0.10	2.29
1,500.00	0.91	231.56	1,499.88	-8.69	-9.52	8.62	0.33	-0.33	-2.58
1,600.00	0.70	224.86	1,599.87	-9.62	-10.58	9.55	0.23	-0.21	-6.69
1,700.00	0.66	224.18	1,699.86	-10.46	-11.41	10.39	0.05	-0.05	-0.68
1,800.00	0.14	148.20	1,799.86	-10.98	-11.75	10.91	0.64	-0.52	-75.98
1,900.00	0.23	180.28	1,899.86	-11.28	-11.68	11.21	0.13	0.08	32.08
2,000.00	0.30	122.98	1,999.86	-11.62	-11.46	11.55	0.26	0.08	-57.30
2,100.00	0.57	176.23	2,099.86	-12.26	-11.21	12.19	0.45	0.26	53.25
2,200.00	0.42	185.49	2,199.85	-13.12	-11.21	13.05	0.16	-0.14	9.26
2,300.00	0.47	191.15	2,299.85	-13.90	-11.33	13.82	0.07	0.05	5.66
2,400.00	0.17	227.81	2,399.85	-14.40	-11.52	14.33	0.35	-0.30	36.66
2,500.00	0.36	131.85	2,499.85	-14.71	-11.40	14.64	0.41	0.18	-95.96
2,600.00	0.58	90.64	2,599.85	-14.92	-10.66	14.86	0.39	0.23	-41.21
2,700.00	0.91	80.75	2,699.84	-14.80	-9.37	14.74	0.35	0.32	-9.89
2,800.00	2.21	65.29	2,799.80	-13.87	-6.84	13.82	1.36	1.31	-15.46
2,900.00	2.51	67.47	2,899.71	-12.22	-3.07	12.20	0.31	0.29	2.18
3,000.00	2.53	69.11	2,999.62	-10.60	1.01	10.61	0.08	0.03	1.65
3,100.00	2.52	63.50	3,099.52	-8.83	5.04	8.86	0.25	-0.01	-5.61
3,200.00	2.34	85.23	3,199.43	-7.68	9.04	7.74	0.93	-0.18	21.73
3,300.00	1.41	94.66	3,299.38	-7.61	12.30	7.69	0.98	-0.93	9.42
3,400.00	1.00	138.99	3,399.36	-8.37	14.10	8.46	0.98	-0.40	44.33
3,500.00	1.49	177.39	3,499.33	-10.33	14.73	10.43	0.94	0.49	38.39
3,600.00	2.28	190.54	3,599.28	-13.59	14.43	13.68	0.89	0.79	13.15
3,700.00	2.80	193.56	3,699.18	-17.91	13.49	18.00	0.53	0.52	3.02
3,800.00	2.61	199.76	3,799.07	-22.43	12.15	22.51	0.35	-0.18	6.20
3,900.00	2.10	203.02	3,898.99	-26.26	10.67	26.32	0.53	-0.52	3.26
4,000.00	2.07	215.34	3,998.92	-29.41	8.91	29.46	0.45	-0.03	12.33
4,100.00	2.11	230.32	4,098.86	-32.05	6.45	32.09	0.55	0.04	14.98
4,200.00	1.73	245.97	4,198.80	-33.84	3.66	33.86	0.64	-0.38	15.65
4,300.00	1.76	265.52	4,298.75	-34.57	0.76	34.58	0.59	0.03	19.55
4,400.00	1.85	272.63	4,398.71	-34.62	-2.38	34.60	0.24	0.09	7.12
4,500.00	1.99	268.80	4,498.65	-34.58	-5.72	34.54	0.19	0.14	-3.83
4,600.00	1.90	261.92	4,598.59	-34.85	-9.10	34.79	0.25	-0.09	-6.89
4,700.00	1.93	259.46	4,698.54	-35.39	-12.40	35.31	0.09	0.03	-2.46
4,800.00	1.51	255.09	4,798.49	-36.04	-15.33	35.94	0.44	-0.42	-4.37
4,900.00	1.64	257.62	4,898.45	-36.68	-18.00	36.57	0.15	0.13	2.53
5,000.00	1.07	260.74	4,998.42	-37.14	-20.31	37.01	0.58	-0.58	3.12
5,100.00	0.76	259.77	5,098.41	-37.41	-21.89	37.27	0.30	-0.30	-0.98
5,200.00	0.93	238.68	5,198.40	-37.95	-23.23	37.80	0.35	0.17	-21.09

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5,300.00	1.13	234.84	5,298.38	-38.94	-24.73	38.78	0.21	0.20	-3.84
5,400.00	0.52	227.37	5,398.37	-39.81	-25.87	39.64	0.62	-0.61	-7.46
5,500.00	1.14	231.49	5,498.36	-40.73	-26.98	40.56	0.62	0.62	4.12
5,600.00	0.79	252.79	5,598.35	-41.55	-28.41	41.37	0.50	-0.35	21.30
5,700.00	1.32	248.37	5,698.33	-42.18	-30.13	41.99	0.54	0.53	-4.42
5,800.00	1.32	249.26	5,798.31	-43.01	-32.28	42.80	0.02	0.00	0.89
5,900.00	1.31	260.58	5,898.28	-43.61	-34.48	43.38	0.26	-0.01	11.33
6,000.00	0.95	284.69	5,998.26	-43.59	-36.41	43.35	0.59	-0.37	24.11
6,100.00	1.19	290.63	6,098.24	-43.01	-38.18	42.76	0.26	0.24	5.94
6,200.00	1.05	305.46	6,198.22	-42.12	-39.89	41.86	0.32	-0.14	14.83
6,300.00	1.25	283.13	6,298.20	-41.34	-41.69	41.07	0.49	0.20	-22.33
6,400.00	1.40	291.81	6,398.18	-40.64	-43.88	40.36	0.25	0.15	8.68
6,500.00	1.06	300.68	6,498.16	-39.72	-45.81	39.42	0.39	-0.34	8.87
6,600.00	1.23	267.15	6,598.14	-39.30	-47.67	38.99	0.68	0.18	-33.53
6,700.00	0.97	289.97	6,698.12	-39.07	-49.54	38.74	0.50	-0.26	22.81
6,800.00	0.67	252.84	6,798.11	-38.95	-50.90	38.62	0.60	-0.30	-37.13
6,900.00	0.72	279.85	6,898.10	-39.01	-52.08	38.68	0.33	0.05	27.01
7,000.00	0.24	290.38	6,998.10	-38.83	-52.90	38.49	0.48	-0.48	10.53
7,100.00	0.14	304.44	7,098.10	-38.69	-53.20	38.35	0.11	-0.10	14.06
7,200.00	0.40	318.52	7,198.10	-38.36	-53.53	38.01	0.26	0.26	14.07
7,300.00	0.33	301.73	7,298.09	-37.95	-54.00	37.60	0.13	-0.07	-16.79
7,400.00	0.30	184.61	7,398.09	-38.06	-54.27	37.71	0.54	-0.03	-117.12
7,500.00	0.22	11.99	7,498.09	-38.14	-54.25	37.79	0.52	-0.09	-172.62
7,600.00	0.24	160.93	7,598.09	-38.16	-54.14	37.81	0.44	0.02	148.94
7,700.00	0.93	180.98	7,698.09	-39.16	-54.09	38.81	0.71	0.69	20.05
7,800.00	0.95	183.83	7,798.07	-40.80	-54.16	40.45	0.05	0.02	2.85
7,900.00	0.34	165.76	7,898.07	-41.91	-54.14	41.56	0.63	-0.61	-18.07
8,000.00	0.32	151.29	7,998.06	-42.45	-53.93	42.10	0.09	-0.02	-14.47
8,100.00	0.20	231.01	8,098.06	-42.80	-53.93	42.46	0.35	-0.13	79.73
8,200.00	0.26	105.74	8,198.06	-42.97	-53.85	42.63	0.41	0.06	-125.28
8,300.00	0.84	36.45	8,298.06	-42.45	-53.20	42.10	0.78	0.58	-69.29
8,400.00	1.04	50.54	8,398.05	-41.29	-52.06	40.95	0.31	0.21	14.09
8,500.00	1.23	68.35	8,498.03	-40.31	-50.36	39.99	0.40	0.19	17.81
8,600.00	0.83	78.08	8,598.01	-39.77	-48.66	39.45	0.44	-0.41	9.73
8,700.00	1.18	86.82	8,698.00	-39.56	-46.93	39.26	0.38	0.35	8.74
8,800.00	0.56	107.96	8,797.98	-39.66	-45.43	39.36	0.68	-0.61	21.14
8,900.00	1.97	130.93	8,897.96	-40.93	-43.66	40.65	1.47	1.41	22.98
9,000.00	2.58	132.25	8,997.88	-43.57	-40.70	43.31	0.61	0.61	1.32
9,100.00	2.04	131.47	9,097.80	-46.27	-37.70	46.02	0.53	-0.53	-0.78
9,200.00	1.67	139.73	9,197.74	-48.56	-35.42	48.33	0.46	-0.37	8.26
9,300.00	1.84	161.28	9,297.70	-51.19	-33.96	50.97	0.67	0.16	21.55
9,400.00	1.88	154.66	9,397.65	-54.19	-32.75	53.97	0.22	0.04	-6.63
9,500.00	1.86	153.44	9,497.59	-57.12	-31.32	56.91	0.04	-0.02	-1.22

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9,600.00	1.61	160.37	9,597.55	-59.89	-30.12	59.70	0.32	-0.25	6.93
9,700.00	1.57	172.23	9,697.51	-62.57	-29.47	62.38	0.33	-0.04	11.86
Tie-In to VES Gyro Survey									
9,896.00	1.40	187.30	9,893.44	-67.60	-29.41	67.41	0.22	-0.09	7.69
First TDS MWD Survey									
9,990.00	1.40	188.00	9,987.41	-69.88	-29.71	69.68	0.02	0.00	0.74
10,084.00	1.50	190.40	10,081.38	-72.23	-30.10	72.03	0.12	0.11	2.55
10,178.00	1.50	191.70	10,175.35	-74.64	-30.57	74.44	0.04	0.00	1.38
10,273.00	1.50	183.90	10,270.32	-77.10	-30.90	76.90	0.21	0.00	-8.21
10,304.00	2.90	170.50	10,301.30	-78.28	-30.80	78.08	4.78	4.52	-43.23
10,335.00	5.60	167.50	10,332.21	-80.53	-30.34	80.33	8.74	8.71	-9.68
10,367.00	8.40	167.40	10,363.97	-84.33	-29.50	84.14	8.75	8.75	-0.31
10,398.00	11.70	167.50	10,394.49	-89.61	-28.32	89.43	10.65	10.65	0.32
10,430.00	14.60	171.40	10,425.65	-96.77	-27.02	96.59	9.47	9.06	12.19
10,461.00	17.40	174.20	10,455.44	-105.25	-25.96	105.08	9.37	9.03	9.03
10,492.00	20.20	175.10	10,484.79	-115.19	-25.04	115.03	9.08	9.03	2.90
10,524.00	22.00	175.50	10,514.64	-126.67	-24.10	126.51	5.64	5.63	1.25
10,555.00	23.70	175.50	10,543.20	-138.67	-23.15	138.52	5.48	5.48	0.00
10,586.00	26.50	175.10	10,571.27	-151.78	-22.07	151.63	9.05	9.03	-1.29
10,618.00	29.90	175.20	10,599.47	-166.84	-20.79	166.71	10.63	10.63	0.31
10,649.00	33.30	175.60	10,625.87	-183.03	-19.49	182.90	10.99	10.97	1.29
10,681.00	37.70	176.30	10,651.92	-201.56	-18.19	201.44	13.81	13.75	2.19
10,712.00	41.80	177.20	10,675.75	-221.35	-17.07	221.24	13.36	13.23	2.90
10,743.00	45.50	177.70	10,698.17	-242.72	-16.12	242.61	11.99	11.94	1.61
10,775.00	48.40	177.60	10,720.02	-266.09	-15.16	265.98	9.07	9.06	-0.31
10,806.00	50.70	176.70	10,740.13	-289.64	-13.99	289.55	7.74	7.42	-2.90
10,838.00	53.00	175.60	10,759.89	-314.75	-12.29	314.66	7.68	7.19	-3.44
10,869.00	55.50	174.50	10,778.00	-339.81	-10.12	339.74	8.56	8.06	-3.55
10,900.00	57.90	174.60	10,795.02	-365.60	-7.66	365.55	7.75	7.74	0.32
10,932.00	60.30	174.70	10,811.45	-392.94	-5.10	392.90	7.50	7.50	0.31
10,963.00	63.90	175.00	10,825.96	-420.22	-2.64	420.19	11.64	11.61	0.97
10,995.00	67.40	175.50	10,839.15	-449.27	-0.23	449.26	11.03	10.94	1.56
11,026.00	70.90	176.30	10,850.18	-478.16	1.84	478.16	11.54	11.29	2.58
11,057.00	74.90	176.40	10,859.29	-507.72	3.72	507.74	12.91	12.90	0.32
11,089.00	79.30	176.40	10,866.44	-538.85	5.68	538.87	13.75	13.75	0.00
11,120.00	82.30	177.60	10,871.39	-569.40	7.28	569.44	10.40	9.68	3.87
11,152.00	83.80	179.30	10,875.27	-601.15	8.14	601.19	7.06	4.69	5.31
11,183.00	85.20	180.90	10,878.24	-632.01	8.09	632.05	6.84	4.52	5.16
11,246.00	87.00	182.30	10,882.52	-694.83	6.33	694.86	3.62	2.86	2.22
11,340.00	89.00	180.90	10,885.80	-788.73	3.71	788.74	2.60	2.13	-1.49
11,434.00	88.80	181.40	10,887.61	-882.70	1.82	882.69	0.57	-0.21	0.53
11,522.44	88.52	180.19	10,889.67	-971.10	0.60	971.08	1.40	-0.32	-1.37
EOC (LU #54H/L1 Plan #4)									
11,529.00	88.50	180.10	10,889.84	-977.66	0.58	977.64	1.40	-0.32	-1.37

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Design: OH

Local Co-ordinate Reference: Well Lea Unit #54H
TVD Reference: KB @ 3679.00usft (McVay 4)
MD Reference: KB @ 3679.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
11,623.00	90.80	178.60	10,890.42	-1,071.64	1.65	1,071.63	2.92	2.45	-1.60
11,717.00	91.40	179.50	10,888.61	-1,165.61	3.20	1,165.61	1.15	0.64	0.96
11,811.00	89.50	178.80	10,887.88	-1,259.59	4.60	1,259.60	2.15	-2.02	-0.74
11,906.00	88.90	179.20	10,889.20	-1,354.57	6.26	1,354.58	0.76	-0.63	0.42
12,000.00	90.80	179.70	10,889.45	-1,448.56	7.16	1,448.58	2.09	2.02	0.53
12,094.00	90.90	179.90	10,888.05	-1,542.55	7.49	1,542.57	0.24	0.11	0.21
12,188.00	90.20	179.30	10,887.15	-1,636.54	8.14	1,636.56	0.98	-0.74	-0.64
12,283.00	89.60	179.50	10,887.32	-1,731.54	9.14	1,731.56	0.67	-0.63	0.21
12,377.00	90.60	179.50	10,887.15	-1,825.53	9.96	1,825.56	1.06	1.06	0.00
12,471.00	91.50	179.30	10,885.43	-1,919.51	10.94	1,919.54	0.98	0.96	-0.21
12,565.00	91.10	179.10	10,883.30	-2,013.48	12.25	2,013.51	0.48	-0.43	-0.21
12,659.00	91.00	180.00	10,881.58	-2,107.46	12.99	2,107.50	0.96	-0.11	0.96
12,754.00	91.10	180.10	10,879.84	-2,202.44	12.91	2,202.48	0.15	0.11	0.11
12,848.00	91.00	180.70	10,878.11	-2,296.42	12.25	2,296.45	0.65	-0.11	0.64
12,942.00	90.70	181.00	10,876.72	-2,390.40	10.86	2,390.42	0.45	-0.32	0.32
13,036.00	90.30	180.90	10,875.90	-2,484.38	9.30	2,484.39	0.44	-0.43	-0.11
13,130.00	90.00	178.10	10,875.65	-2,578.37	10.12	2,578.38	3.00	-0.32	-2.98
13,224.00	89.50	177.80	10,876.06	-2,672.31	13.48	2,672.34	0.62	-0.53	-0.32
13,318.00	90.90	178.30	10,875.73	-2,766.25	16.68	2,766.30	1.58	1.49	0.53
13,413.00	90.90	178.30	10,874.24	-2,861.20	19.50	2,861.26	0.00	0.00	0.00
13,507.00	90.80	178.40	10,872.85	-2,955.15	22.21	2,955.23	0.15	-0.11	0.11
13,601.00	90.20	178.80	10,872.03	-3,049.12	24.50	3,049.21	0.77	-0.64	0.43
13,695.00	90.00	178.90	10,871.86	-3,143.10	26.39	3,143.20	0.24	-0.21	0.11
13,790.00	90.00	179.20	10,871.86	-3,238.08	27.96	3,238.20	0.32	0.00	0.32
13,884.00	89.80	179.20	10,872.03	-3,332.07	29.28	3,332.19	0.21	-0.21	0.00
13,978.00	91.10	179.00	10,871.29	-3,426.06	30.75	3,426.18	1.40	1.38	-0.21
14,072.00	91.20	179.20	10,869.40	-3,520.03	32.23	3,520.16	0.24	0.11	0.21
14,166.00	90.70	179.20	10,867.84	-3,614.00	33.54	3,614.15	0.53	-0.53	0.00
14,260.00	90.70	179.50	10,866.70	-3,707.99	34.61	3,708.14	0.32	0.00	0.32
14,355.00	90.50	179.30	10,865.70	-3,802.98	35.60	3,803.13	0.30	-0.21	-0.21
14,449.00	90.40	179.40	10,864.96	-3,896.97	36.67	3,897.13	0.15	-0.11	0.11
14,543.00	89.90	179.50	10,864.72	-3,990.97	37.57	3,991.13	0.54	-0.53	0.11
14,551.80	89.84	179.48	10,864.74	-3,999.76	37.65	3,999.92	0.67	-0.64	-0.21
Target Window 1									
14,637.00	89.30	179.30	10,865.37	-4,084.96	38.56	4,085.12	0.67	-0.64	-0.21
14,732.00	88.70	179.10	10,867.03	-4,179.93	39.88	4,180.11	0.67	-0.63	-0.21
14,826.00	89.30	180.30	10,868.67	-4,273.92	40.37	4,274.09	1.43	0.64	1.28
14,920.00	89.60	182.00	10,869.57	-4,367.89	38.49	4,368.05	1.84	0.32	1.81
15,015.00	88.80	182.10	10,870.90	-4,462.82	35.09	4,462.95	0.85	-0.84	0.11
15,109.00	88.60	181.00	10,873.03	-4,556.76	32.55	4,556.87	1.19	-0.21	-1.17
15,203.00	90.70	180.40	10,873.61	-4,650.75	31.40	4,650.85	2.32	2.23	-0.64
15,297.00	90.40	180.90	10,872.70	-4,744.73	30.33	4,744.83	0.62	-0.32	0.53
15,391.00	90.10	181.10	10,872.29	-4,838.72	28.69	4,838.80	0.38	-0.32	0.21
15,486.00	90.40	181.30	10,871.88	-4,933.70	26.70	4,933.77	0.38	0.32	0.21

Company: Legacy Reserves
Project: Lea County, NM (NAD-27 2015)
Site: Lea Unit #54H
Well: Lea Unit #54H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Lea Unit #54H
TVD Reference: KB @ 3679.00usft (McVay 4)
MD Reference: KB @ 3679.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
15,580.00	90.40	181.30	10,871.22	-5,027.67	24.57	5,027.72	0.00	0.00	0.00
15,674.00	89.20	180.30	10,871.55	-5,121.66	23.26	5,121.70	1.66	-1.28	-1.06
15,769.00	89.00	180.00	10,873.04	-5,216.65	23.01	5,216.69	0.38	-0.21	-0.32
15,863.00	89.10	180.10	10,874.60	-5,310.63	22.93	5,310.67	0.15	0.11	0.11
15,957.00	89.10	180.50	10,876.08	-5,404.62	22.43	5,404.65	0.43	0.00	0.43
16,051.00	88.70	180.50	10,877.88	-5,498.60	21.61	5,498.62	0.43	-0.43	0.00
16,145.00	89.70	180.00	10,879.20	-5,592.59	21.20	5,592.61	1.19	1.06	-0.53
16,240.00	90.00	178.70	10,879.44	-5,687.58	22.28	5,687.60	1.40	0.32	-1.37
16,334.00	89.70	178.30	10,879.69	-5,781.55	24.74	5,781.58	0.53	-0.32	-0.43
16,428.00	89.90	178.60	10,880.02	-5,875.51	27.29	5,875.56	0.38	0.21	0.32
16,522.00	90.20	178.80	10,879.94	-5,969.49	29.42	5,969.55	0.38	0.32	0.21
16,617.00	88.40	178.70	10,881.10	-6,064.45	31.49	6,064.53	1.90	-1.89	-0.11
16,711.00	88.40	178.40	10,883.72	-6,158.39	33.87	6,158.48	0.32	0.00	-0.32
16,805.00	88.20	178.20	10,886.51	-6,252.30	36.66	6,252.41	0.30	-0.21	-0.21
16,899.00	89.50	179.20	10,888.40	-6,346.26	38.79	6,346.37	1.74	1.38	1.06
16,994.00	89.10	179.50	10,889.56	-6,441.24	39.86	6,441.37	0.53	-0.42	0.32
17,088.00	90.50	178.80	10,889.89	-6,535.23	41.26	6,535.36	1.67	1.49	-0.74
17,182.00	90.70	178.60	10,888.90	-6,629.20	43.39	6,629.34	0.30	0.21	-0.21
17,276.00	90.60	178.80	10,887.83	-6,723.17	45.52	6,723.32	0.24	-0.11	0.21
17,370.00	90.70	178.90	10,886.77	-6,817.14	47.41	6,817.31	0.15	0.11	0.11
17,465.00	89.70	179.80	10,886.44	-6,912.14	48.49	6,912.30	1.42	-1.05	0.95
17,559.00	89.60	180.00	10,887.01	-7,006.13	48.65	7,006.30	0.24	-0.11	0.21
17,653.00	89.40	179.80	10,887.83	-7,100.13	48.82	7,100.30	0.30	-0.21	-0.21
17,747.00	89.30	180.00	10,888.90	-7,194.12	48.98	7,194.29	0.24	-0.11	0.21
17,842.00	89.10	180.10	10,890.22	-7,289.11	48.90	7,289.28	0.24	-0.21	0.11
17,916.00	89.10	180.00	10,891.39	-7,363.10	48.83	7,363.27	0.14	0.00	-0.14
Final MWD Survey									
17,971.00	89.10	180.00	10,892.25	-7,418.10	48.83	7,418.26	0.00	0.00	0.00
Projection to Bit/TD - BHL (LU #54H/OH)									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,700.00	9,697.51	-62.57	-29.47	Tie-In to VES Gyro Survey
9,896.00	9,893.44	-67.60	-29.41	First TDS MWD Survey
17,916.00	10,891.39	-7,363.10	48.83	Final MWD Survey
17,971.00	10,892.25	-7,418.10	48.83	Projection to Bit/TD

Checked By: _____ Approved By: _____ Date: _____