



Legacy Reserves

Lea County, NM

Lea Unit

62H

ST01

Survey: ProDirectional

Survey Report

21 March, 2017



30-025-43247



ProDirectional
Survey Report



Company:	Legacy Reserves	Local Co-ordinate Reference:	Well 62H
Project:	Lea County, NM (NAD27)	TVD Reference:	GL 3688'+KB 20' @ 3708.00usft (McVay 4)
Site:	Lea Unit	MD Reference:	GL 3688'+KB 20' @ 3708.00usft (McVay 4)
Well:	62H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	MWD	Database:	WellPlanner1

Project	Lea County, NM (NAD27)		
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		
Site Position:		Northing:	567,540.50 usft
From:	Map	Easting:	757,874.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 33' 26.964 N
		Longitude:	103° 29' 46.949 W
		Grid Convergence:	0.45 °

Well	62H					
Well Position	+N/-S	0.00 usft	Northing:	567,540.50 usft	Latitude:	32° 33' 26.964 N
	+E/-W	0.00 usft	Easting:	757,874.60 usft	Longitude:	103° 29' 46.949 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,688.00 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/20/2017	6.78	60.57	48,341.30

Design	MWD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	10,757.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	355.40	



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Survey Program Date 3/21/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	5,400.00	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
5,566.00	10,757.00	Survey #2 (OH)	MWD - OWSG	MWD - OWSG
10,851.00	18,938.00	Lateral (ST01)	MWD - OWSG	MWD - OWSG

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	567,540.50	757,874.60
100.00	0.77	46.44	100.00	0.42	0.46	0.49	0.67	46.44	567,540.96	757,875.09
200.00	0.73	31.94	199.99	1.36	1.47	1.31	1.97	41.79	567,541.97	757,875.91
300.00	0.68	44.55	299.98	2.26	2.43	2.06	3.19	40.34	567,542.93	757,876.66
400.00	0.22	44.78	399.98	2.77	2.99	2.62	3.97	41.19	567,543.49	757,877.22
500.00	0.20	273.82	499.98	2.92	3.14	2.58	4.06	39.40	567,543.64	757,877.18
600.00	0.26	225.39	599.98	2.80	2.99	2.24	3.74	36.86	567,543.49	757,876.84
700.00	0.49	230.05	699.97	2.41	2.56	1.75	3.10	34.43	567,543.06	757,876.35
800.00	0.56	238.71	799.97	1.94	2.03	1.01	2.26	26.40	567,542.53	757,875.61
900.00	0.56	256.67	899.97	1.65	1.66	0.11	1.66	3.90	567,542.16	757,874.71
1,000.00	0.74	246.66	999.96	1.36	1.29	-0.96	1.61	323.53	567,541.79	757,873.64
1,100.00	0.89	243.37	1,099.95	0.87	0.69	-2.24	2.35	287.06	567,541.19	757,872.36
1,200.00	1.09	249.20	1,199.93	0.31	0.00	-3.83	3.83	270.04	567,540.50	757,870.77
1,300.00	1.32	245.03	1,299.91	-0.36	-0.82	-5.76	5.82	261.88	567,539.68	757,868.84
1,400.00	1.59	241.54	1,399.88	-1.32	-1.97	-8.02	8.26	256.21	567,538.53	757,866.58
1,500.00	1.59	238.11	1,499.84	-2.52	-3.36	-10.42	10.95	252.11	567,537.14	757,864.18
1,600.00	1.49	240.36	1,599.80	-3.70	-4.74	-12.73	13.58	249.58	567,535.76	757,861.87
1,700.00	1.11	249.85	1,699.78	-4.51	-5.72	-14.77	15.84	248.84	567,534.78	757,859.83
1,800.00	1.12	259.20	1,799.76	-4.88	-6.23	-16.64	17.77	249.46	567,534.27	757,857.96
1,900.00	1.22	270.04	1,899.74	-4.90	-6.41	-18.66	19.73	251.03	567,534.09	757,855.94



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Design: MWD

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

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
2,000.00	1.07	261.07	1,999.72	-4.88	-6.56	-20.65	21.67	252.38	567,533.94	757,853.95
2,100.00	0.77	238.06	2,099.71	-5.26	-7.06	-22.14	23.24	252.32	567,533.44	757,852.46
2,200.00	0.45	263.95	2,199.70	-5.58	-7.46	-23.10	24.28	252.11	567,533.04	757,851.50
2,300.00	0.31	271.35	2,299.70	-5.56	-7.49	-23.76	24.92	252.50	567,533.01	757,850.84
2,400.00	0.50	295.67	2,399.70	-5.31	-7.30	-24.43	25.49	253.37	567,533.20	757,850.17
2,500.00	0.64	293.71	2,499.69	-4.83	-6.88	-25.33	26.25	254.80	567,533.62	757,849.27
2,600.00	0.62	264.31	2,599.69	-4.57	-6.71	-26.38	27.22	255.73	567,533.79	757,848.22
2,700.00	0.61	238.17	2,699.68	-4.83	-7.05	-27.37	28.26	255.56	567,533.45	757,847.23
2,800.00	0.45	223.54	2,799.68	-5.33	-7.61	-28.09	29.11	254.84	567,532.89	757,846.51
2,900.00	0.34	141.16	2,899.67	-5.84	-8.13	-28.18	29.33	253.91	567,532.37	757,846.42
3,000.00	0.31	89.67	2,999.67	-6.11	-8.36	-27.72	28.95	253.23	567,532.14	757,846.88
3,100.00	0.42	92.13	3,099.67	-6.17	-8.37	-27.09	28.35	252.83	567,532.13	757,847.51
3,200.00	0.60	88.81	3,199.67	-6.24	-8.37	-26.20	27.50	252.28	567,532.13	757,848.40
3,300.00	0.65	92.53	3,299.66	-6.34	-8.39	-25.11	26.47	251.53	567,532.11	757,849.49
3,400.00	0.60	66.31	3,399.66	-6.24	-8.20	-24.06	25.42	251.18	567,532.30	757,850.54
3,500.00	0.67	63.74	3,499.65	-5.86	-7.73	-23.06	24.32	251.46	567,532.77	757,851.54
3,600.00	0.74	57.59	3,599.64	-5.34	-7.13	-21.99	23.11	252.04	567,533.37	757,852.61
3,700.00	0.91	39.76	3,699.63	-4.47	-6.17	-20.93	21.82	253.58	567,534.33	757,853.67
3,800.00	0.98	39.28	3,799.62	-3.29	-4.90	-19.88	20.48	256.16	567,535.60	757,854.72
3,900.00	0.47	76.35	3,899.61	-2.61	-4.14	-18.94	19.39	257.68	567,536.36	757,855.66
4,000.00	0.66	63.78	3,999.60	-2.33	-3.79	-18.03	18.42	258.14	567,536.71	757,856.57
4,100.00	1.08	61.12	4,099.59	-1.73	-3.08	-16.69	16.97	259.55	567,537.42	757,857.91
4,200.00	0.59	73.40	4,199.58	-1.23	-2.48	-15.37	15.57	260.85	567,538.02	757,859.23
4,300.00	1.15	93.79	4,299.57	-1.27	-2.39	-13.87	14.08	260.21	567,538.11	757,860.73
4,400.00	2.10	101.34	4,399.53	-1.92	-2.82	-11.08	11.43	255.71	567,537.68	757,863.52
4,500.00	1.63	109.07	4,499.48	-3.00	-3.65	-7.93	8.73	245.32	567,536.85	757,866.67
4,600.00	1.95	94.55	4,599.43	-3.84	-4.25	-4.89	6.48	229.06	567,536.25	757,869.71



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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
4,700.00	1.91	87.10	4,699.37	-4.16	-4.30	-1.53	4.56	199.65	567,536.20	757,873.07
4,800.00	1.46	91.26	4,799.33	-4.34	-4.24	1.40	4.47	161.68	567,536.26	757,876.00
4,900.00	1.34	99.36	4,899.30	-4.75	-4.46	3.83	5.88	139.33	567,536.04	757,878.43
5,000.00	2.89	78.01	4,999.23	-4.71	-4.12	7.45	8.52	118.97	567,536.38	757,882.05
5,100.00	2.59	86.43	5,099.11	-4.43	-3.46	12.17	12.65	105.87	567,537.04	757,886.77
5,200.00	2.15	91.55	5,199.03	-4.67	-3.37	16.30	16.65	101.68	567,537.13	757,890.90
5,300.00	1.66	86.00	5,298.97	-4.88	-3.32	19.62	19.90	99.60	567,537.18	757,894.22
5,400.00	1.81	75.03	5,398.93	-4.61	-2.81	22.59	22.77	97.09	567,537.69	757,897.19
5,566.00	1.70	88.30	5,564.85	-4.27	-2.06	27.59	27.66	94.27	567,538.44	757,902.19
5,755.00	1.50	87.00	5,753.78	-4.48	-1.85	32.86	32.91	93.22	567,538.65	757,907.46
5,944.00	1.20	92.40	5,942.72	-4.79	-1.80	37.31	37.35	92.76	567,538.70	757,911.91
6,039.00	1.10	94.00	6,037.70	-5.05	-1.91	39.21	39.26	92.78	567,538.59	757,913.81
6,133.00	1.10	93.60	6,131.69	-5.31	-2.03	41.01	41.06	92.83	567,538.47	757,915.61
6,228.00	1.10	92.00	6,226.67	-5.54	-2.12	42.83	42.88	92.83	567,538.38	757,917.43
6,322.00	1.00	84.60	6,320.65	-5.64	-2.07	44.55	44.60	92.66	567,538.43	757,919.15
6,417.00	1.10	77.10	6,415.64	-5.49	-1.79	46.26	46.30	92.21	567,538.71	757,920.86
6,511.00	1.10	90.50	6,509.62	-5.44	-1.59	48.05	48.07	91.90	567,538.91	757,922.65
6,606.00	0.80	84.40	6,604.61	-5.51	-1.54	49.62	49.64	91.78	567,538.96	757,924.22
6,794.00	0.90	86.60	6,792.59	-5.52	-1.32	52.40	52.42	91.45	567,539.18	757,927.00
6,889.00	0.30	283.20	6,887.58	-5.46	-1.22	52.90	52.92	91.32	567,539.28	757,927.50
6,983.00	0.60	273.60	6,981.58	-5.31	-1.13	52.17	52.18	91.25	567,539.37	757,926.77
7,077.00	0.60	273.20	7,075.58	-5.18	-1.08	51.19	51.20	91.20	567,539.42	757,925.79
7,172.00	0.80	269.60	7,170.57	-5.06	-1.05	50.03	50.04	91.21	567,539.45	757,924.63
7,266.00	0.90	256.00	7,264.56	-5.13	-1.24	48.66	48.67	91.46	567,539.26	757,923.26
7,361.00	1.00	253.10	7,359.55	-5.43	-1.66	47.14	47.17	92.01	567,538.84	757,921.74
7,455.00	0.90	249.50	7,453.53	-5.81	-2.15	45.66	45.71	92.70	567,538.35	757,920.26
7,550.00	0.80	271.50	7,548.52	-5.94	-2.40	44.30	44.36	93.10	567,538.10	757,918.90



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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
7,644.00	0.90	270.40	7,642.51	-5.81	-2.38	42.91	42.97	93.17	567,538.12	757,917.51
7,738.00	1.00	275.60	7,736.50	-5.60	-2.29	41.35	41.41	93.17	567,538.21	757,915.95
7,833.00	1.20	261.70	7,831.48	-5.52	-2.35	39.54	39.61	93.41	567,538.15	757,914.14
7,927.00	1.10	267.30	7,925.46	-5.55	-2.54	37.67	37.75	93.85	567,537.96	757,912.27
8,021.00	1.40	269.50	8,019.44	-5.44	-2.59	35.62	35.71	94.16	567,537.91	757,910.22
8,116.00	1.40	279.70	8,114.41	-5.07	-2.41	33.31	33.40	94.13	567,538.09	757,907.91
8,209.00	1.20	276.10	8,207.39	-4.61	-2.11	31.22	31.30	93.87	567,538.39	757,905.82
8,304.00	1.30	280.50	8,302.37	-4.14	-1.81	29.18	29.23	93.55	567,538.69	757,903.78
8,398.00	1.60	282.10	8,396.34	-3.49	-1.34	26.84	26.88	92.86	567,539.16	757,901.44
8,492.00	1.80	283.00	8,490.29	-2.66	-0.73	24.12	24.13	91.74	567,539.77	757,898.72
8,587.00	2.20	282.80	8,585.24	-1.67	0.01	20.89	20.89	89.98	567,540.51	757,895.49
8,681.00	2.10	293.70	8,679.17	-0.31	1.10	17.55	17.59	86.41	567,541.60	757,892.15
8,775.00	2.30	302.80	8,773.10	1.65	2.81	14.39	14.66	78.94	567,543.31	757,888.99
8,870.00	1.00	281.10	8,868.06	3.03	4.01	11.98	12.63	71.50	567,544.51	757,886.58
8,964.00	1.30	274.00	8,962.04	3.41	4.24	10.11	10.96	67.25	567,544.74	757,884.71
9,058.00	1.50	272.10	9,056.01	3.72	4.36	7.81	8.95	60.85	567,544.86	757,882.41
9,153.00	1.40	267.90	9,150.98	3.91	4.36	5.41	6.95	51.14	567,544.86	757,880.01
9,247.00	1.30	269.70	9,244.96	4.04	4.31	3.20	5.37	36.55	567,544.81	757,877.80
9,342.00	1.40	292.20	9,339.93	4.65	4.75	1.05	4.86	12.42	567,545.25	757,875.65
9,436.00	1.70	304.50	9,433.90	6.04	5.97	-1.17	6.08	348.94	567,546.47	757,873.43
9,530.00	1.60	308.00	9,527.86	7.81	7.57	-3.35	8.28	336.12	567,548.07	757,871.25
9,625.00	1.60	328.60	9,622.82	9.89	9.52	-5.09	10.79	331.88	567,550.02	757,869.51
9,719.00	1.90	337.20	9,716.78	12.55	12.07	-6.37	13.65	332.17	567,552.57	757,868.23
9,813.00	1.90	342.80	9,810.73	15.55	15.00	-7.44	16.74	333.62	567,555.50	757,867.16
9,908.00	1.90	338.00	9,905.67	18.59	17.96	-8.49	19.87	334.69	567,558.46	757,866.11
10,002.00	1.70	322.40	9,999.63	21.24	20.51	-9.93	22.79	334.17	567,561.01	757,864.67
10,096.00	1.30	308.10	10,093.60	23.13	22.27	-11.62	25.12	332.45	567,562.77	757,862.98



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10,190.00	1.30	305.40	10,187.57	24.54	23.55	-13.33	27.06	330.50	567,564.05	757,861.27
10,285.00	1.60	303.50	10,282.54	26.05	24.91	-15.31	29.24	328.42	567,565.41	757,859.29
10,379.00	1.70	292.00	10,376.50	27.49	26.15	-17.70	31.58	325.91	567,566.65	757,856.90
10,474.00	1.50	280.60	10,471.47	28.45	26.91	-20.23	33.66	323.07	567,567.41	757,854.37
10,568.00	0.40	273.80	10,565.45	28.82	27.16	-21.76	34.80	321.29	567,567.66	757,852.84
10,663.00	0.60	225.70	10,660.45	28.55	26.83	-22.45	34.99	320.08	567,567.33	757,852.15
10,757.00	1.00	222.70	10,754.44	27.68	25.89	-23.36	34.87	317.94	567,566.39	757,851.24
Tie-on to OH at 10757' MD										
10,851.00	1.60	244.80	10,848.41	26.66	24.72	-25.10	35.23	314.57	567,565.22	757,849.50
First ST01 Survey: 10851' MD										
10,905.00	3.10	310.10	10,902.38	27.42	25.34	-26.90	36.96	313.29	567,565.84	757,847.70
10,946.00	9.10	326.00	10,943.13	31.03	28.75	-29.57	41.24	314.20	567,569.25	757,845.03
10,993.00	10.60	327.70	10,989.43	38.09	35.49	-33.95	49.11	316.26	567,575.99	757,840.65
11,040.00	14.20	333.60	11,035.33	47.28	44.31	-38.83	58.91	318.77	567,584.81	757,835.77
11,087.00	17.00	339.40	11,080.60	59.24	55.90	-43.81	71.03	321.91	567,596.40	757,830.79
11,135.00	21.50	339.70	11,125.90	74.46	70.73	-49.33	86.24	325.10	567,611.23	757,825.27
11,182.00	25.80	340.50	11,168.95	92.64	88.46	-55.74	104.55	327.78	567,628.96	757,818.86
11,229.00	30.10	340.50	11,210.45	113.93	109.22	-63.09	126.13	329.99	567,649.72	757,811.51
11,276.00	33.40	340.40	11,250.41	137.82	132.52	-71.37	150.52	331.70	567,673.02	757,803.23
11,323.00	36.20	339.90	11,289.00	163.69	157.75	-80.48	177.09	332.97	567,698.25	757,794.12
11,370.00	39.00	340.40	11,326.24	191.36	184.72	-90.21	205.57	333.97	567,725.22	757,784.39
11,417.00	39.80	339.70	11,362.56	220.12	212.76	-100.39	235.25	334.74	567,753.26	757,774.21
11,464.00	42.30	339.10	11,398.00	249.79	241.65	-111.25	266.03	335.28	567,782.15	757,763.35
11,511.00	46.10	339.40	11,431.69	281.26	272.28	-122.86	298.72	335.71	567,812.78	757,751.74
11,558.00	49.40	338.90	11,463.28	314.65	304.79	-135.24	333.45	336.07	567,845.29	757,739.36
11,605.00	51.00	339.40	11,493.37	349.32	338.53	-148.09	369.51	336.37	567,879.03	757,726.51
11,652.00	53.80	337.90	11,522.04	384.97	373.21	-161.66	406.71	336.58	567,913.71	757,712.94



ProDirectional Survey Report



Company: Legacy Reserves
Project: Lea County, NM (NAD27)
Site: Lea Unit
Well: 62H
Wellbore: ST01
Design: MWD

Local Co-ordinate Reference: Well 62H
TVD Reference: GL 3688'+KB 20' @ 3708.00usft (McVay 4)
MD Reference: GL 3688'+KB 20' @ 3708.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
11,699.00	58.50	338.60	11,548.22	422.26	409.45	-176.11	445.72	336.73	567,949.95	757,698.49
11,746.00	65.50	339.80	11,570.27	462.09	448.23	-190.82	487.16	336.94	567,988.73	757,683.78
11,794.00	73.10	341.50	11,587.22	505.48	490.56	-205.67	531.94	337.25	568,031.06	757,668.93
11,841.00	80.40	342.70	11,597.99	549.97	534.07	-219.72	577.50	337.64	568,074.57	757,654.88
11,888.00	87.90	344.70	11,602.78	595.72	578.91	-232.83	623.98	338.09	568,119.41	757,641.77
11,904.00	89.70	345.30	11,603.11	611.45	594.36	-236.97	639.86	338.26	568,134.86	757,637.63
11,998.00	92.10	346.00	11,601.64	704.08	685.41	-260.26	733.16	339.21	568,225.91	757,614.34
12,092.00	92.30	346.30	11,598.03	796.79	776.61	-282.74	826.48	339.99	568,317.11	757,591.86
12,188.00	91.80	345.80	11,594.59	891.45	869.72	-305.87	921.94	340.62	568,410.22	757,568.73
12,280.00	91.60	345.90	11,591.86	982.14	958.89	-328.35	1,013.55	341.10	568,499.39	757,546.25
12,374.00	91.90	347.00	11,588.99	1,074.95	1,050.23	-350.37	1,107.13	341.55	568,590.73	757,524.23
12,469.00	92.30	349.10	11,585.51	1,169.10	1,143.10	-370.02	1,201.50	342.06	568,683.60	757,504.58
12,563.00	91.50	350.50	11,582.39	1,262.59	1,235.56	-386.66	1,294.65	342.62	568,776.06	757,487.94
12,657.00	92.00	353.50	11,579.52	1,356.37	1,328.59	-399.73	1,387.43	343.26	568,869.09	757,474.87
12,751.00	92.10	356.10	11,576.16	1,450.30	1,422.14	-408.25	1,479.58	343.98	568,962.64	757,466.35
12,845.00	91.70	357.60	11,573.04	1,544.22	1,515.94	-413.41	1,571.30	344.75	569,056.44	757,461.19
12,940.00	92.00	358.00	11,569.98	1,639.08	1,610.82	-417.05	1,663.94	345.48	569,151.32	757,457.55
13,034.00	91.60	358.10	11,567.02	1,732.93	1,704.72	-420.25	1,755.76	346.15	569,245.22	757,454.35
13,128.00	91.60	357.60	11,564.40	1,826.81	1,798.62	-423.77	1,847.87	346.74	569,339.12	757,450.83
13,222.00	92.50	357.10	11,561.04	1,920.70	1,892.46	-428.12	1,940.28	347.25	569,432.96	757,446.48
13,317.00	93.20	359.00	11,556.31	2,015.47	1,987.28	-431.35	2,033.55	347.75	569,527.78	757,443.25
13,411.00	93.90	0.30	11,550.49	2,109.03	2,081.10	-431.92	2,125.44	348.28	569,621.60	757,442.68
13,505.00	94.20	0.20	11,543.85	2,202.46	2,174.86	-431.51	2,217.25	348.78	569,715.36	757,443.09
13,599.00	93.30	359.50	11,537.71	2,295.98	2,268.66	-431.76	2,309.38	349.22	569,809.16	757,442.84
13,693.00	93.50	359.30	11,532.13	2,389.58	2,362.49	-432.74	2,401.79	349.62	569,902.99	757,441.86
13,788.00	93.40	359.50	11,526.41	2,484.18	2,457.31	-433.73	2,495.29	349.99	569,997.81	757,440.87
13,882.00	94.50	359.00	11,519.94	2,577.74	2,551.08	-434.96	2,587.89	350.32	570,091.58	757,439.64



ProDirectional Survey Report



Company: Legacy Reserves
Project: Lea County, NM (NAD27)
Site: Lea Unit
Well: 62H
Wellbore: ST01
Design: MWD

Local Co-ordinate Reference: Well 62H
TVD Reference: GL 3688'+KB 20' @ 3708.00usft (McVay 4)
MD Reference: GL 3688'+KB 20' @ 3708.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
13,976.00	93.50	359.60	11,513.38	2,671.29	2,644.84	-436.11	2,680.55	350.64	570,185.34	757,438.49
14,071.00	91.70	359.50	11,509.07	2,765.94	2,739.73	-436.85	2,774.34	350.94	570,280.23	757,437.75
14,165.00	91.80	358.70	11,506.20	2,859.70	2,833.68	-438.33	2,867.38	351.21	570,374.18	757,436.27
14,259.00	92.00	358.60	11,503.09	2,953.50	2,927.60	-440.54	2,960.56	351.44	570,468.10	757,434.06
14,353.00	92.00	357.50	11,499.80	3,047.34	3,021.49	-443.74	3,053.90	351.65	570,561.99	757,430.86
14,447.00	92.30	357.50	11,496.28	3,141.21	3,115.33	-447.83	3,147.35	351.82	570,655.83	757,426.77
14,541.00	92.70	358.00	11,492.18	3,235.04	3,209.17	-451.52	3,240.78	351.99	570,749.67	757,423.08
14,636.00	93.20	358.50	11,487.29	3,329.80	3,304.00	-454.42	3,335.10	352.17	570,844.50	757,420.18
14,730.00	93.50	358.80	11,481.80	3,423.49	3,397.81	-456.63	3,428.36	352.35	570,938.31	757,417.97
14,824.00	92.90	359.00	11,476.55	3,517.16	3,491.65	-458.43	3,521.61	352.52	571,032.15	757,416.17
14,919.00	91.80	359.10	11,472.65	3,611.89	3,586.55	-460.00	3,615.93	352.69	571,127.05	757,414.60
15,013.00	91.60	359.00	11,469.86	3,705.66	3,680.50	-461.56	3,709.33	352.85	571,221.00	757,413.04
15,107.00	92.30	359.30	11,466.67	3,799.40	3,774.43	-462.96	3,802.72	353.01	571,314.93	757,411.64
15,201.00	92.90	359.50	11,462.40	3,893.08	3,868.33	-463.94	3,896.05	353.16	571,408.83	757,410.66
15,295.00	90.90	359.00	11,459.29	3,986.81	3,962.26	-465.17	3,989.48	353.30	571,502.76	757,409.43
15,390.00	91.10	359.20	11,457.63	4,081.59	4,057.24	-466.66	4,083.99	353.44	571,597.74	757,407.94
15,484.00	92.10	359.90	11,455.00	4,175.31	4,151.20	-467.40	4,177.43	353.58	571,691.70	757,407.20
15,578.00	92.10	359.60	11,451.56	4,268.98	4,245.13	-467.81	4,270.83	353.71	571,785.63	757,406.79
15,672.00	92.60	359.40	11,447.70	4,362.66	4,339.05	-468.63	4,364.28	353.84	571,879.55	757,405.97
15,766.00	93.10	359.30	11,443.03	4,456.32	4,432.93	-469.69	4,457.74	353.95	571,973.43	757,404.91
15,860.00	93.50	359.60	11,437.62	4,549.93	4,526.77	-470.59	4,551.16	354.06	572,067.27	757,404.01
15,955.00	91.50	359.20	11,433.48	4,644.60	4,621.67	-471.59	4,645.66	354.17	572,162.17	757,403.01
16,049.00	92.00	359.20	11,430.60	4,738.35	4,715.61	-472.90	4,739.27	354.27	572,256.11	757,401.70
16,143.00	93.10	359.90	11,426.42	4,832.01	4,809.51	-473.64	4,832.78	354.38	572,350.01	757,400.96
16,237.00	92.20	358.80	11,422.08	4,925.68	4,903.41	-474.70	4,926.33	354.47	572,443.91	757,399.90
16,331.00	92.00	357.80	11,418.63	5,019.50	4,997.30	-477.49	5,020.06	354.54	572,537.80	757,397.11
16,425.00	91.20	357.50	11,416.01	5,113.39	5,091.18	-481.34	5,113.89	354.60	572,631.68	757,393.26



ProDirectional Survey Report



Company: Legacy Reserves
Project: Lea County, NM (NAD27)
Site: Lea Unit
Well: 62H
Wellbore: ST01
Design: MWD

Local Co-ordinate Reference: Well 62H
TVD Reference: GL 3688'+KB 20' @ 3708.00usft (McVay 4)
MD Reference: GL 3688'+KB 20' @ 3708.00usft (McVay 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
16,519.00	90.90	357.90	11,414.28	5,207.30	5,185.09	-485.12	5,207.74	354.65	572,725.59	757,389.48
16,613.00	91.10	358.00	11,412.64	5,301.19	5,279.02	-488.48	5,301.57	354.71	572,819.52	757,386.12
16,707.00	90.70	356.50	11,411.17	5,395.12	5,372.89	-492.99	5,395.46	354.76	572,913.39	757,381.61
16,801.00	91.00	356.60	11,409.77	5,489.10	5,466.71	-498.64	5,489.41	354.79	573,007.21	757,375.96
16,896.00	90.70	356.60	11,408.36	5,584.06	5,561.54	-504.28	5,584.35	354.82	573,102.04	757,370.32
16,990.00	90.70	356.60	11,407.22	5,678.04	5,655.36	-509.85	5,678.30	354.85	573,195.86	757,364.75
17,084.00	90.80	356.70	11,405.99	5,772.01	5,749.19	-515.34	5,772.25	354.88	573,289.69	757,359.26
17,179.00	91.20	357.00	11,404.33	5,866.96	5,844.04	-520.56	5,867.18	354.91	573,384.54	757,354.04
17,273.00	90.70	356.70	11,402.77	5,960.92	5,937.88	-525.73	5,961.11	354.94	573,478.38	757,348.87
17,367.00	92.40	358.10	11,400.23	6,054.82	6,031.74	-529.99	6,054.98	354.98	573,572.24	757,344.61
17,461.00	91.20	357.30	11,397.27	6,148.70	6,125.62	-533.76	6,148.83	355.02	573,666.12	757,340.84
17,555.00	91.90	357.80	11,394.73	6,242.59	6,219.50	-537.78	6,242.70	355.06	573,760.00	757,336.82
17,650.00	93.10	358.90	11,390.59	6,337.37	6,314.37	-540.51	6,337.46	355.11	573,854.87	757,334.09
17,744.00	93.70	358.90	11,385.01	6,431.03	6,408.18	-542.31	6,431.09	355.16	573,948.68	757,332.29
17,838.00	95.40	358.60	11,377.56	6,524.57	6,501.86	-544.36	6,524.61	355.21	574,042.36	757,330.24
17,932.00	94.30	358.10	11,369.61	6,618.11	6,595.48	-547.05	6,618.13	355.26	574,135.98	757,327.55
18,027.00	94.20	358.40	11,362.57	6,712.73	6,690.18	-549.95	6,712.74	355.30	574,230.68	757,324.65
18,121.00	91.70	359.00	11,357.73	6,806.44	6,784.02	-552.07	6,806.45	355.35	574,324.52	757,322.53
18,216.00	90.90	358.60	11,355.58	6,901.25	6,878.97	-554.06	6,901.25	355.40	574,419.47	757,320.54
18,310.00	91.30	359.10	11,353.77	6,995.06	6,972.94	-555.95	6,995.07	355.44	574,513.44	757,318.65
18,404.00	91.70	359.50	11,351.31	7,088.81	7,066.90	-557.10	7,088.82	355.49	574,607.40	757,317.50
18,501.00	91.60	359.40	11,348.52	7,185.53	7,163.85	-558.03	7,185.55	355.55	574,704.35	757,316.57
18,595.00	90.40	359.00	11,346.88	7,279.31	7,257.83	-559.34	7,279.35	355.59	574,798.33	757,315.26
18,689.00	90.80	358.40	11,345.89	7,373.15	7,351.80	-561.47	7,373.21	355.63	574,892.30	757,313.13
18,784.00	91.50	359.00	11,343.99	7,467.97	7,446.75	-563.63	7,468.05	355.67	574,987.25	757,310.97
18,878.00	91.70	358.60	11,341.36	7,561.77	7,540.70	-565.60	7,561.88	355.71	575,081.20	757,309.00

Last Survey: 18878' MD, 11341' TVD

Company:	Legacy Reserves	Local Co-ordinate Reference:	Well 62H
Project:	Lea County, NM (NAD27)	TVD Reference:	GL 3688'+KB 20' @ 3708.00usft (McVay 4)
Site:	Lea Unit	MD Reference:	GL 3688'+KB 20' @ 3708.00usft (McVay 4)
Well:	62H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	MWD	Database:	WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
18,938.00	91.70	358.60	11,339.58	7,621.65	7,600.65	-567.06	7,621.78	355.73	575,141.15	757,307.54
PTB: 18938' MD, 11339.58' TVD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,757.00	10,754.44	25.89	-23.36	Tie-on to OH at 10757' MD	
10,851.00	10,848.41	24.72	-25.10	First ST01 Survey: 10851' MD	
18,878.00	11,341.36	7,540.70	-565.60	Last Survey: 18878' MD, 11341' TVD	
18,938.00	11,339.58	7,600.65	-567.06	PTB: 18938' MD, 11339.58' TVD	