



PHOENIX

TECHNOLOGY SERVICES USA INC.

Celebrating 20 Years of Focused Solutions

3610 Elkins Road, Midland, Texas 79705 T. 432.684.0057 F. 432.686.7964 www.phxtech.com

March 6, 2018

Oil Conservation Division
State of New Mexico
1625 N. French Drive
District 1 - Hobbs
Hobbs, New Mexico 88240

HOBBS OCD

MAR 19 2018

RECEIVED

Attention: Regulatory Department

Re: Legacy Reserves
Lea Unit No. 49H
Lea County, New Mexico
API # 30-025-44410
Job No. 62435

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Oscar Velasquez	49H	0	9,000	3/3/18	3/3/18	Gyro

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Brittany Carley

Brittany Carley
Operations Administrator

SURVEY CERTIFICATION FORM

3610 Elkins Road Midland, TX 79705 t:432-684-0057 f: 432-686-7964



Company: Legacy

Job #: 62435

Well Name: Lea Unit No.49H

County/State: Lea Co., N.M.

Survey Instrument Type: North Seek Rate Gyro

API # 30-025-44410

TIE-IN DATA

Measure Depth (ft)	Vertical Depth (ft)	Inclination (°)	Azimuth (°)	N-S Coordinates	E-W Coordinates	Data Source
0	0	0	0	0	0	Surface

First Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2018-03-03	0	0	0

Last Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
2018-03-03	9000	0.36	340.28

Projected TD Survey

Date	Depth (ft)	Inclination (°)	Azimuth (°)
0	0	0	0

Grid Correction
-0.43

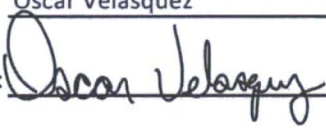
Gyro Operator: Phoenix Technology Services USA Ltd.

Gyro Supervisor: Angel Guebara

To the best of my knowledge I certify this survey data to be correct and true

Date: 3-3-2018

Print Name: Oscar Velasquez

Signature: 



Company: Legacy
 Well: Lea Unit No. 49H
 Location: Lea Co., N.M.
 Rig: Mcvay 4

Job Number: 62435
 Grid Corr.: -0.43
 Lat: 32.60
 Long: -103.51

Date: 03-03-18
 Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: 20ft
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclina- tion (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
Enter Tie-In Survey on Line 10			FIELD COPY, NON-DEFINITIVE										
TIE IN	0			0	0	0	0	0					
Gyro	100.00	0.19	312.41	100	100.00	0.11	0.11 N	0.12 W	0.17	312.41	0.19	0.19	312.41
	200.00	0.09	180.09	100	200.00	0.15	0.15 N	0.24 W	0.28	300.64	0.26	-0.10	-132.32
	300.00	0.29	197.38	100	300.00	-0.17	0.17 S	0.32 W	0.37	241.39	0.21	0.20	17.29
	400.00	0.49	267.26	100	400.00	-0.44	0.44 S	0.82 W	0.93	242.05	0.48	0.20	69.88
	500.00	0.61	225.09	100	499.99	-0.83	0.83 S	1.63 W	1.83	242.89	0.41	0.12	-42.17
	600.00	0.65	225.43	100	599.99	-1.61	1.61 S	2.41 W	2.90	236.29	0.04	0.04	0.34
	700.00	0.61	248.66	100	699.98	-2.20	2.20 S	3.31 W	3.97	236.39	0.26	-0.04	23.23
	800.00	0.32	302.71	100	799.98	-2.24	2.24 S	4.04 W	4.62	240.97	0.50	-0.29	54.05
	900.00	0.30	295.96	100	899.98	-1.98	1.98 S	4.51 W	4.92	246.34	0.04	-0.02	-6.75
	1000.00	0.23	78.63	100	999.98	-1.82	1.82 S	4.55 W	4.90	248.17	0.50	-0.07	-217.33
	1100.00	0.12	11.40	100	1099.98	-1.68	1.68 S	4.33 W	4.65	248.80	0.21	-0.11	-67.23
	1200.00	0.18	237.54	100	1199.98	-1.66	1.66 S	4.44 W	4.74	249.50	0.28	0.06	226.14
	1300.00	0.38	311.82	100	1299.97	-1.52	1.52 S	4.82 W	5.06	252.46	0.37	0.20	74.28
	1400.00	0.41	306.64	100	1399.97	-1.09	1.09 S	5.36 W	5.47	258.50	0.05	0.03	-5.18
	1500.00	0.76	278.01	100	1499.97	-0.78	0.78 S	6.30 W	6.35	262.91	0.45	0.35	-28.63
	1600.00	1.10	274.23	100	1599.95	-0.62	0.62 S	7.91 W	7.94	265.52	0.35	0.34	-3.78
	1700.00	0.90	279.36	100	1699.94	-0.42	0.42 S	9.65 W	9.66	267.49	0.22	-0.20	5.13
	1800.00	0.73	285.66	100	1799.93	-0.12	0.12 S	11.03 W	11.04	269.36	0.19	-0.17	6.30
	1900.00	0.68	302.26	100	1899.92	0.37	0.37 N	12.15 W	12.16	271.73	0.21	-0.05	16.60
	2000.00	0.73	328.22	100	1999.91	1.22	1.22 N	12.99 W	13.04	275.39	0.32	0.05	25.96
	2100.00	0.51	336.83	100	2099.91	2.18	2.18 N	13.50 W	13.67	279.15	0.24	-0.22	8.61
	2200.00	0.55	330.69	100	2199.90	3.00	3.00 N	13.91 W	14.23	282.18	0.07	0.04	-6.14
	2300.00	0.80	343.97	100	2299.90	4.09	4.09 N	14.34 W	14.91	285.93	0.29	0.25	13.28
	2400.00	0.67	327.63	100	2399.89	5.26	5.26 N	14.84 W	15.75	289.50	0.25	-0.13	-16.34
	2500.00	0.76	343.93	100	2499.88	6.39	6.39 N	15.34 W	16.62	292.61	0.22	0.09	16.30
	2600.00	0.68	358.46	100	2599.87	7.62	7.62 N	15.54 W	17.30	296.12	0.20	-0.08	14.53
	2700.00	0.88	9.32	100	2699.86	8.97	8.97 N	15.43 W	17.85	300.17	0.25	0.20	-349.14
	2800.00	0.99	19.85	100	2799.85	10.54	10.54 N	15.01 W	18.34	305.07	0.20	0.11	10.53
	2900.00	1.76	42.14	100	2899.82	12.49	12.49 N	13.69 W	18.53	312.38	0.92	0.77	22.29
	3000.00	2.06	48.10	100	2999.76	14.83	14.83 N	11.32 W	18.66	322.65	0.36	0.30	5.96



Company: Legacy
Well: Lea Unit No. 49H
Location: Lea Co., N.M.
Rig: Mcvay 4

Job Number: 62435
Grid Corr.: -0.43
Lat: 32.60
Long: -103.51

Calculation Method: Minimum Curvature
Proposed Azimuth:
RKB - MSL in feet: 20ft
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	3100.00	1.97	49.54	100	3099.70	17.15	17.15 N	8.67 W	19.22	333.16	0.10	-0.09	1.44
	3200.00	1.03	60.40	100	3199.67	18.71	18.71 N	6.58 W	19.83	340.61	0.98	-0.94	10.86
	3300.00	1.08	73.01	100	3299.65	19.42	19.42 N	4.90 W	20.03	345.84	0.24	0.05	12.61
	3400.00	1.01	81.69	100	3399.63	19.83	19.83 N	3.13 W	20.07	351.03	0.17	-0.07	8.68
	3500.00	1.02	154.41	100	3499.62	19.15	19.15 N	1.87 W	19.24	354.42	1.20	0.01	72.72
	3600.00	1.07	168.47	100	3599.61	17.43	17.43 N	1.30 W	17.48	355.73	0.26	0.05	14.06
	3700.00	2.34	175.16	100	3699.56	14.49	14.49 N	0.94 W	14.52	356.28	1.28	1.27	6.69
	3800.00	3.19	177.04	100	3799.44	9.67	9.67 N	0.63 W	9.69	356.30	0.85	0.85	1.88
	3900.00	3.67	175.57	100	3899.26	3.70	3.70 N	0.24 W	3.71	356.36	0.49	0.48	-1.47
	4000.00	3.84	192.91	100	3999.05	-2.75	2.75 S	0.74 W	2.85	194.97	1.14	0.17	17.34
	4100.00	2.77	190.96	100	4098.88	-8.39	8.39 S	1.94 W	8.61	193.05	1.08	-1.07	-1.95
	4200.00	1.29	211.18	100	4198.82	-11.72	11.72 S	2.99 W	12.10	194.29	1.62	-1.48	20.22
	4300.00	0.66	226.81	100	4298.80	-13.08	13.08 S	3.99 W	13.68	196.96	0.68	-0.63	15.63
	4400.00	0.83	238.83	100	4398.80	-13.85	13.85 S	5.03 W	14.74	199.95	0.23	0.17	12.02
	4500.00	0.83	244.31	100	4498.78	-14.54	14.54 S	6.30 W	15.85	203.43	0.08	0.00	5.48
	4600.00	0.92	245.60	100	4598.77	-15.19	15.19 S	7.68 W	17.02	206.84	0.09	0.09	1.29
	4700.00	1.02	239.61	100	4698.76	-15.97	15.97 S	9.18 W	18.42	209.91	0.14	0.10	-5.99
	4800.00	1.04	247.27	100	4798.74	-16.77	16.77 S	10.79 W	19.94	212.76	0.14	0.02	7.66
	4900.00	1.15	246.33	100	4898.72	-17.52	17.52 S	12.54 W	21.55	215.60	0.11	0.11	-0.94
	5000.00	1.06	232.58	100	4998.71	-18.49	18.49 S	14.20 W	23.31	217.53	0.28	-0.09	-13.75
	5100.00	0.98	242.36	100	5098.69	-19.45	19.45 S	15.69 W	24.99	218.90	0.19	-0.08	9.78
	5200.00	1.23	254.68	100	5198.67	-20.13	20.13 S	17.48 W	26.66	220.98	0.34	0.25	12.32
	5300.00	1.21	262.19	100	5298.65	-20.55	20.55 S	19.56 W	28.38	223.59	0.16	-0.02	7.51
	5400.00	1.31	248.40	100	5398.62	-21.12	21.12 S	21.67 W	30.26	225.74	0.32	0.10	-13.79
	5500.00	1.39	246.82	100	5498.60	-22.02	22.02 S	23.85 W	32.46	227.29	0.09	0.08	-1.58
	5600.00	1.51	241.60	100	5598.56	-23.12	23.12 S	26.12 W	34.89	228.49	0.18	0.12	-5.22
	5700.00	1.72	245.90	100	5698.52	-24.36	24.36 S	28.65 W	37.61	229.63	0.24	0.21	4.30
	5800.00	1.77	235.44	100	5798.48	-25.85	25.85 S	31.30 W	40.59	230.45	0.32	0.05	-10.46
	5900.00	1.75	236.26	100	5898.43	-27.57	27.57 S	33.84 W	43.65	230.83	0.03	-0.02	0.82
	6000.00	1.69	237.18	100	5998.39	-29.22	29.22 S	36.35 W	46.63	231.20	0.07	-0.06	0.92
	6100.00	1.87	244.85	100	6098.34	-30.71	30.71 S	39.06 W	49.69	231.82	0.30	0.18	7.67
	6200.00	1.92	238.33	100	6198.28	-32.28	32.28 S	41.96 W	52.95	232.43	0.22	0.05	-6.52
	6300.00	1.81	236.25	100	6298.23	-34.04	34.04 S	44.70 W	56.19	232.71	0.13	-0.11	-2.08



Company: Legacy
 Well: Lea Unit No. 49H
 Location: Lea Co., N.M.
 Rig: McVay 4

Job Number: 62435
 Grid Corr.: -0.43
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Calculation Method: Minimum Curvature
 Proposed Azimuth:
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Survey Tool Type	Survey Depth (ft)	Inclina- tion (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	6400.00	2.02	240.06	100	6398.17	-35.80	35.80 S	47.54 W	59.51	233.02	0.25	0.21	3.81
	6500.00	1.95	235.92	100	6498.11	-37.63	37.63 S	50.48 W	62.96	233.30	0.16	-0.07	-4.14
	6600.00	1.79	234.22	100	6598.06	-39.50	39.50 S	53.16 W	66.22	233.39	0.17	-0.16	-1.70
	6700.00	1.37	226.15	100	6698.02	-41.24	41.24 S	55.29 W	68.97	233.28	0.47	-0.42	-8.07
	6800.00	1.53	223.53	100	6797.99	-43.04	43.04 S	57.07 W	71.48	232.98	0.17	0.16	-2.62
	6900.00	1.44	221.89	100	6897.96	-44.94	44.94 S	58.83 W	74.03	232.62	0.10	-0.09	-1.64
	7000.00	1.50	228.01	100	6997.92	-46.75	46.75 S	60.64 W	76.57	232.37	0.17	0.06	6.12
	7100.00	1.48	218.06	100	7097.89	-48.64	48.64 S	62.41 W	79.12	232.07	0.26	-0.02	-9.95
	7200.00	1.72	223.02	100	7197.85	-50.76	50.76 S	64.23 W	81.86	231.68	0.28	0.24	4.96
	7300.00	1.60	226.40	100	7297.81	-52.82	52.82 S	66.26 W	84.74	231.44	0.15	-0.12	3.38
	7400.00	1.68	225.13	100	7397.77	-54.81	54.81 S	68.31 W	87.58	231.26	0.09	0.08	-1.27
	7500.00	1.76	229.65	100	7497.72	-56.84	56.84 S	70.52 W	90.58	231.13	0.16	0.08	4.52
	7600.00	1.83	233.22	100	7597.67	-58.79	58.79 S	72.97 W	93.71	231.14	0.13	0.07	3.57
	7700.00	1.98	232.01	100	7697.62	-60.81	60.81 S	75.61 W	97.03	231.19	0.16	0.15	-1.21
	7800.00	1.81	228.89	100	7797.56	-62.91	62.91 S	78.16 W	100.34	231.17	0.20	-0.17	-3.12
	7900.00	2.18	226.82	100	7897.50	-65.25	65.25 S	80.74 W	103.81	231.05	0.38	0.37	-2.07
	8000.00	2.11	220.14	100	7997.43	-67.96	67.96 S	83.31 W	107.52	230.79	0.26	-0.07	-6.68
	8100.00	0.90	257.23	100	8097.40	-69.54	69.54 S	85.26 W	110.03	230.80	1.49	-1.21	37.09
	8200.00	0.81	260.21	100	8197.39	-69.84	69.84 S	86.73 W	111.35	231.16	0.10	-0.09	2.98
	8300.00	0.31	325.27	100	8297.38	-69.73	69.73 S	87.58 W	111.95	231.47	0.74	-0.50	65.06
	8400.00	0.30	281.12	100	8397.38	-69.46	69.46 S	87.99 W	112.10	231.71	0.23	-0.01	-44.15
	8500.00	0.59	256.42	100	8497.38	-69.53	69.53 S	88.75 W	112.74	231.92	0.34	0.29	-24.70
	8600.00	0.50	222.78	100	8597.38	-69.97	69.97 S	89.54 W	113.64	231.99	0.33	-0.09	-33.64
	8700.00	0.42	294.08	100	8697.37	-70.14	70.14 S	90.17 W	114.24	232.12	0.54	-0.08	71.30
	8800.00	0.77	5.46	100	8797.37	-69.33	69.33 S	90.44 W	113.96	232.53	0.75	0.35	-288.62
	8900.00	0.22	19.15	100	8897.36	-68.47	68.47 S	90.32 W	113.34	232.83	0.56	-0.55	13.69
	9000.00	0.36	340.28	100	8997.36	-68.00	68.00 S	90.36 W	113.09	233.04	0.23	0.14	321.13