



April 13, 2020

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capitol Station
Austin, Texas 78711

Attention: Regulatory Department

Re: Shell Western Exploration and Production Co.
University 20 TG Unit 3907H
Winkler County, TX
API #42-495-34450
Job No. 66132

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	
Shawn Ramnarine	3907H	192	21,901	2/8/20	4/10/20	MWD

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



SWEPI

**Winkler County, Texas (NAD27)
University 20 TG Unit
3907H**

OH / 66132

Survey: Phoenix MWD Surveys

Standard Survey Report

11 April, 2020



Company:	SWEPI	Local Co-ordinate Reference:	Well 3907H
Project:	Winkler County, Texas (NAD27)	TVD Reference:	RKB @ 2794.50usft (Precision 559)
Site:	University 20 TG Unit	MD Reference:	RKB @ 2794.50usft (Precision 559)
Well:	3907H	North Reference:	Grid
Wellbore:	OH / 66132	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Precision 559)	Database:	USA Compass

Project	Winkler County, Texas (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site	University 20 TG Unit		
Site Position:		Northing:	762,909.88 usft
From:	Map	Easting:	1,073,370.48 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	31° 43' 48.672296 N
		Longitude:	103° 18' 50.454998 W
		Grid Convergence:	-1.54 °

Well	3907H					
Well Position	+N/-S	0.00 usft	Northing:	739,733.39 usft	Latitude:	31° 40' 0.741741 N
	+E/-W	0.00 usft	Easting:	1,078,514.12 usft	Longitude:	103° 17' 43.774466 W
Position Uncertainty		1.00 usft	Wellhead Elevation:	usft	Ground Level:	2,768.50 usft

Wellbore	OH / 66132				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	3/31/2020	6.93	59.45	47,307.94656273

Design	Surveys (Precision 559)				
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	163.98	

Survey Program	Date	4/11/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
192.00	21,960.00	Phoenix MWD Surveys (OH / 66132)	MWD+HRGM+AX	OWSG MWD + HRGM + Axial Correction	

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
192.00	0.60	326.35	192.00	0.84	-0.56	-0.96	0.31	0.31	0.00
First Phoenix MWD Survey									
351.00	0.60	318.63	350.99	2.15	-1.57	-2.50	0.05	0.00	-4.86
531.00	1.96	355.88	530.94	5.93	-2.41	-6.37	0.85	0.76	20.69
722.00	7.35	348.74	721.24	21.18	-5.03	-21.75	2.83	2.82	-3.74
911.00	8.76	346.72	908.37	47.05	-10.70	-48.18	0.76	0.75	-1.07
1,100.00	8.85	346.04	1,095.15	75.17	-17.52	-77.08	0.07	0.05	-0.36
1,290.00	9.13	346.19	1,282.81	103.99	-24.64	-106.75	0.15	0.15	0.08
1,479.00	9.48	347.21	1,469.32	133.73	-31.66	-137.27	0.20	0.19	0.54
1,668.00	9.75	347.68	1,655.67	164.54	-38.52	-168.78	0.15	0.14	0.25

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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)
1,857.00	10.30	349.64	1,841.78	196.80	-44.98	-201.57	0.34	0.29	1.04
2,045.00	10.59	349.80	2,026.67	230.33	-51.06	-235.48	0.16	0.15	0.09
2,234.00	10.28	350.69	2,212.54	264.07	-56.86	-269.51	0.18	-0.16	0.47
2,424.00	7.70	359.96	2,400.20	293.53	-59.62	-298.59	1.55	-1.36	4.88
2,613.00	5.35	14.36	2,587.98	314.74	-57.44	-318.36	1.51	-1.24	7.62
2,803.00	2.56	5.04	2,777.51	327.55	-54.87	-329.97	1.50	-1.47	-4.91
2,992.00	3.33	17.62	2,966.26	336.98	-52.84	-338.48	0.53	0.41	6.66
3,181.00	3.91	22.76	3,154.88	348.16	-48.68	-348.07	0.35	0.31	2.72
3,371.00	0.95	150.24	3,344.75	352.76	-45.39	-351.59	2.40	-1.56	67.09
3,560.00	0.94	140.10	3,533.72	350.22	-43.62	-348.65	0.09	-0.01	-5.37
3,749.00	0.76	154.28	3,722.70	347.90	-42.08	-346.00	0.15	-0.10	7.50
3,938.00	1.09	119.71	3,911.68	345.88	-39.98	-343.48	0.34	0.17	-18.29
4,127.00	2.19	95.57	4,100.60	344.64	-34.82	-340.86	0.67	0.58	-12.77
4,316.00	2.36	82.89	4,289.45	344.77	-27.36	-338.93	0.28	0.09	-6.71
4,505.00	2.39	83.52	4,478.29	345.69	-19.59	-337.67	0.02	0.02	0.33
4,694.00	2.89	82.33	4,667.09	346.77	-10.95	-336.33	0.27	0.26	-0.63
4,882.00	3.29	82.69	4,854.81	348.09	-0.90	-334.82	0.21	0.21	0.19
4,977.00	3.17	83.03	4,949.66	348.76	4.41	-334.00	0.13	-0.13	0.36
5,159.00	1.83	130.86	5,131.50	347.47	11.60	-330.77	1.30	-0.74	26.28
5,348.00	1.72	143.10	5,320.41	343.22	15.59	-325.59	0.21	-0.06	6.48
5,538.00	0.02	358.26	5,510.38	340.98	17.30	-322.96	0.91	-0.89	-76.23
5,726.00	0.22	5.81	5,698.38	341.37	17.33	-323.33	0.11	0.11	4.02
5,915.00	0.36	17.60	5,887.38	342.30	17.55	-324.16	0.08	0.07	6.24
6,104.00	0.66	44.71	6,076.37	343.64	18.50	-325.19	0.20	0.16	14.34
6,293.00	1.02	50.38	6,265.35	345.48	20.56	-326.39	0.20	0.19	3.00
6,481.00	0.88	49.18	6,453.33	347.49	22.94	-327.67	0.08	-0.07	-0.64
6,670.00	0.67	51.16	6,642.31	349.13	24.90	-328.70	0.11	-0.11	1.05
6,859.00	0.73	58.45	6,831.30	350.46	26.79	-329.46	0.06	0.03	3.86
7,049.00	0.63	33.88	7,021.28	351.96	28.40	-330.45	0.16	-0.05	-12.93
7,237.00	0.67	2.51	7,209.27	353.91	29.02	-332.16	0.19	0.02	-16.69
7,426.00	0.51	6.75	7,398.26	355.85	29.17	-333.98	0.09	-0.08	2.24
7,615.00	0.82	69.19	7,587.25	357.17	30.53	-334.87	0.39	0.16	33.04
7,805.00	0.66	71.92	7,777.23	357.99	32.84	-335.03	0.09	-0.08	1.44
7,994.00	0.83	66.65	7,966.22	358.87	35.14	-335.24	0.10	0.09	-2.79
8,183.00	0.45	34.79	8,155.21	360.02	36.82	-335.88	0.27	-0.20	-16.86
8,371.00	0.34	19.88	8,343.20	361.16	37.43	-336.80	0.08	-0.06	-7.93
8,560.00	0.30	7.60	8,532.20	362.17	37.68	-337.71	0.04	-0.02	-6.50
8,749.00	0.24	309.39	8,721.20	362.91	37.44	-338.49	0.14	-0.03	-30.80
8,938.00	0.63	50.70	8,910.19	363.82	37.94	-339.22	0.38	0.21	53.60
9,128.00	0.61	16.06	9,100.18	365.46	39.03	-340.49	0.19	-0.01	-18.23
9,316.00	1.06	354.44	9,288.16	368.15	39.14	-343.05	0.29	0.24	-11.50
9,505.00	1.53	10.29	9,477.11	372.37	39.42	-347.03	0.31	0.25	8.39
9,694.00	0.47	11.48	9,666.08	375.62	40.02	-349.98	0.56	-0.56	0.63

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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)
9,883.00	0.82	209.99	9,855.08	375.20	39.50	-349.73	0.67	0.19	-85.44
10,072.00	2.93	188.38	10,043.97	369.25	38.12	-344.39	1.16	1.12	-11.43
10,260.00	3.00	190.97	10,231.72	359.67	36.49	-335.63	0.08	0.04	1.38
10,449.00	2.07	179.72	10,420.53	351.40	35.56	-327.94	0.56	-0.49	-5.95
10,637.00	1.99	224.37	10,608.42	345.67	33.30	-323.06	0.82	-0.04	23.75
10,826.00	2.36	224.71	10,797.29	340.56	28.26	-319.53	0.20	0.20	0.18
11,015.00	2.11	221.85	10,986.14	335.20	23.20	-315.78	0.14	-0.13	-1.51
11,204.00	2.20	207.34	11,175.01	329.39	19.22	-311.29	0.29	0.05	-7.68
11,249.00	2.21	206.97	11,219.98	327.85	18.43	-310.03	0.04	0.02	-0.82
11,318.00	3.11	175.33	11,288.91	324.80	17.98	-307.22	2.45	1.30	-45.86
11,381.00	5.39	156.47	11,351.73	320.38	19.30	-302.61	4.20	3.62	-29.94
11,476.00	17.55	154.82	11,444.66	303.26	27.20	-283.98	12.80	12.80	-1.74
11,571.00	29.55	160.92	11,531.60	268.03	41.01	-246.30	12.87	12.63	6.42
11,665.00	39.13	165.72	11,609.14	217.25	55.94	-193.38	10.58	10.19	5.11
11,759.00	49.86	167.39	11,676.10	153.25	71.14	-127.67	11.48	11.41	1.78
11,854.00	60.33	171.10	11,730.39	76.81	85.50	-50.23	11.47	11.02	3.91
11,948.00	67.89	173.11	11,771.41	-6.89	97.06	33.41	8.27	8.04	2.14
12,043.00	78.75	170.17	11,798.65	-96.77	110.33	123.46	11.81	11.43	-3.09
12,090.00	86.34	168.46	11,804.74	-142.53	118.97	169.83	16.55	16.15	-3.64
12,184.00	89.30	166.57	11,808.31	-234.23	139.28	263.57	3.74	3.15	-2.01
12,279.00	90.35	165.12	11,808.61	-326.34	162.51	358.51	1.88	1.11	-1.53
12,373.00	90.24	164.60	11,808.12	-417.08	187.06	452.50	0.57	-0.12	-0.55
12,468.00	93.40	169.54	11,805.10	-509.58	208.30	547.27	6.17	3.33	5.20
12,562.00	93.18	169.17	11,799.71	-601.81	225.63	640.71	0.46	-0.23	-0.39
12,657.00	94.06	168.92	11,793.71	-694.89	243.65	735.15	0.96	0.93	-0.26
12,752.00	92.04	167.51	11,788.66	-787.75	263.03	829.75	2.59	-2.13	-1.48
12,846.00	90.22	165.06	11,786.80	-879.04	285.31	923.64	3.25	-1.94	-2.61
12,941.00	89.95	164.71	11,786.66	-970.75	310.08	1,018.63	0.47	-0.28	-0.37
13,035.00	89.35	162.30	11,787.23	-1,060.88	336.77	1,112.62	2.64	-0.64	-2.56
13,130.00	90.33	164.34	11,787.50	-1,151.87	364.03	1,207.60	2.38	1.03	2.15
13,224.00	90.04	163.36	11,787.20	-1,242.16	390.18	1,301.60	1.09	-0.31	-1.04
13,319.00	90.55	163.00	11,786.71	-1,333.10	417.67	1,396.59	0.66	0.54	-0.38
13,508.00	89.99	162.58	11,785.82	-1,513.63	473.59	1,585.55	0.37	-0.30	-0.22
13,602.00	88.67	160.31	11,786.92	-1,602.73	503.49	1,679.44	2.79	-1.40	-2.41
13,696.00	91.62	165.96	11,786.68	-1,692.64	530.75	1,773.38	6.78	3.14	6.01
13,885.00	88.70	162.21	11,786.15	-1,874.34	582.56	1,962.32	2.51	-1.54	-1.98
13,979.00	88.33	162.00	11,788.59	-1,963.77	611.44	2,056.24	0.45	-0.39	-0.22
14,074.00	87.94	162.22	11,791.68	-2,054.12	640.60	2,151.14	0.47	-0.41	0.23
14,168.00	91.36	162.70	11,792.25	-2,143.74	668.93	2,245.09	3.67	3.64	0.51
14,263.00	91.81	162.81	11,789.62	-2,234.43	697.08	2,340.03	0.49	0.47	0.12
14,358.00	93.12	163.33	11,785.54	-2,325.23	724.72	2,434.93	1.48	1.38	0.55
14,452.00	93.20	163.07	11,780.36	-2,415.08	751.85	2,528.78	0.29	0.09	-0.28
14,547.00	93.37	163.24	11,774.91	-2,505.85	779.33	2,623.61	0.25	0.18	0.18

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14,641.00	90.96	163.78	11,771.36	-2,595.92	805.99	2,717.54	2.63	-2.56	0.57
14,736.00	90.30	161.97	11,770.32	-2,686.69	833.96	2,812.51	2.03	-0.69	-1.91
14,831.00	90.75	161.14	11,769.45	-2,776.81	864.02	2,907.42	0.99	0.47	-0.87
14,926.00	91.36	161.81	11,767.70	-2,866.87	894.19	3,002.31	0.95	0.64	0.71
15,020.00	88.44	163.40	11,767.86	-2,956.56	922.29	3,096.27	3.54	-3.11	1.69
15,114.00	88.11	163.43	11,770.69	-3,046.61	949.11	3,190.22	0.35	-0.35	0.03
15,209.00	88.68	164.20	11,773.35	-3,137.81	975.58	3,285.18	1.01	0.60	0.81
15,303.00	91.66	167.07	11,773.07	-3,228.85	998.90	3,379.12	4.40	3.17	3.05
15,398.00	91.12	165.92	11,770.77	-3,321.19	1,021.08	3,474.00	1.34	-0.57	-1.21
15,492.00	90.45	164.45	11,769.48	-3,412.05	1,045.11	3,567.97	1.72	-0.71	-1.56
15,586.00	88.68	162.81	11,770.19	-3,502.23	1,071.60	3,661.96	2.57	-1.88	-1.74
15,681.00	88.96	162.20	11,772.15	-3,592.82	1,100.15	3,756.91	0.71	0.29	-0.64
15,775.00	89.08	163.09	11,773.76	-3,682.53	1,128.19	3,850.87	0.96	0.13	0.95
15,870.00	92.44	165.93	11,772.50	-3,774.05	1,153.55	3,945.83	4.63	3.54	2.99
15,965.00	90.59	166.05	11,769.99	-3,866.18	1,176.54	4,040.73	1.95	-1.95	0.13
16,059.00	90.88	167.65	11,768.78	-3,957.71	1,197.92	4,134.61	1.73	0.31	1.70
16,154.00	92.00	169.54	11,766.39	-4,050.80	1,216.70	4,229.26	2.31	1.18	1.99
16,248.00	91.56	169.90	11,763.47	-4,143.24	1,233.47	4,322.75	0.60	-0.47	0.38
16,343.00	90.05	169.40	11,762.14	-4,236.68	1,250.53	4,417.27	1.67	-1.59	-0.53
16,437.00	93.82	169.47	11,758.97	-4,329.02	1,267.76	4,510.77	4.01	4.01	0.07
16,532.00	92.01	168.71	11,754.13	-4,422.18	1,285.71	4,605.27	2.07	-1.91	-0.80
16,626.00	91.25	166.96	11,751.46	-4,514.03	1,305.51	4,699.01	2.03	-0.81	-1.86
16,721.00	89.25	164.02	11,751.05	-4,605.98	1,329.31	4,793.96	3.74	-2.11	-3.09
16,815.00	90.22	161.86	11,751.48	-4,695.84	1,356.89	4,887.94	2.52	1.03	-2.30
16,910.00	89.45	156.50	11,751.75	-4,784.60	1,390.64	4,982.57	5.70	-0.81	-5.64
17,004.00	94.71	159.27	11,748.34	-4,871.59	1,425.99	5,075.94	6.32	5.60	2.95
17,098.00	95.24	160.59	11,740.19	-4,959.54	1,458.13	5,169.35	1.51	0.56	1.40
17,192.00	93.20	161.54	11,733.27	-5,048.21	1,488.54	5,262.96	2.39	-2.17	1.01
17,286.00	90.33	164.29	11,730.38	-5,138.00	1,516.14	5,356.88	4.23	-3.05	2.93
17,381.00	90.70	164.72	11,729.52	-5,229.55	1,541.52	5,451.88	0.60	0.39	0.45
17,475.00	87.67	163.55	11,730.86	-5,319.94	1,567.21	5,545.85	3.46	-3.22	-1.24
17,569.00	87.17	163.52	11,735.09	-5,410.00	1,593.82	5,639.76	0.53	-0.53	-0.03
17,663.00	89.16	163.83	11,738.10	-5,500.16	1,620.23	5,733.70	2.14	2.12	0.33
17,758.00	89.53	163.50	11,739.19	-5,591.32	1,646.95	5,828.69	0.52	0.39	-0.35
17,853.00	88.85	162.13	11,740.53	-5,682.06	1,675.01	5,923.66	1.61	-0.72	-1.44
17,947.00	90.32	162.71	11,741.21	-5,771.67	1,703.40	6,017.62	1.68	1.56	0.62
18,041.00	89.30	161.09	11,741.52	-5,861.01	1,732.60	6,111.55	2.04	-1.09	-1.72
18,136.00	90.42	163.00	11,741.76	-5,951.38	1,761.89	6,206.49	2.33	1.18	2.01
18,231.00	90.10	163.29	11,741.33	-6,042.30	1,789.43	6,301.48	0.45	-0.34	0.31
18,325.00	89.51	164.16	11,741.65	-6,132.53	1,815.78	6,395.48	1.12	-0.63	0.93
18,420.00	92.90	164.95	11,739.65	-6,224.06	1,841.07	6,490.44	3.66	3.57	0.83
18,515.00	94.00	163.72	11,733.93	-6,315.37	1,866.67	6,585.26	1.74	1.16	-1.29
18,609.00	93.81	164.14	11,727.53	-6,405.48	1,892.63	6,679.04	0.49	-0.20	0.45
18,704.00	92.46	164.06	11,722.33	-6,496.71	1,918.62	6,773.90	1.42	-1.42	-0.08

Company:	SWEPI	Local Co-ordinate Reference:	Well 3907H
Project:	Winkler County, Texas (NAD27)	TVD Reference:	RKB @ 2794.50usft (Precision 559)
Site:	University 20 TG Unit	MD Reference:	RKB @ 2794.50usft (Precision 559)
Well:	3907H	North Reference:	Grid
Wellbore:	OH / 66132	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Precision 559)	Database:	USA Compass

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)
18,798.00	91.26	163.10	11,719.28	-6,586.83	1,945.17	6,867.84	1.63	-1.28	-1.02
18,893.00	91.30	163.77	11,717.16	-6,677.86	1,972.25	6,962.82	0.71	0.04	0.71
18,987.00	91.50	161.57	11,714.86	-6,767.56	2,000.24	7,056.76	2.35	0.21	-2.34
19,081.00	90.87	158.44	11,712.92	-6,855.86	2,032.37	7,150.50	3.40	-0.67	-3.33
19,176.00	92.06	162.39	11,710.49	-6,945.32	2,064.20	7,245.26	4.34	1.25	4.16
19,270.00	92.55	162.90	11,706.71	-7,034.97	2,092.22	7,339.16	0.75	0.52	0.54
19,364.00	92.15	163.77	11,702.85	-7,124.94	2,119.15	7,433.08	1.02	-0.43	0.93
19,458.00	90.82	162.57	11,700.42	-7,214.88	2,146.36	7,527.03	1.91	-1.41	-1.28
19,552.00	91.01	160.84	11,698.92	-7,304.11	2,175.86	7,620.94	1.85	0.20	-1.84
19,647.00	90.67	163.10	11,697.52	-7,394.43	2,205.26	7,715.87	2.41	-0.36	2.38
19,741.00	90.96	162.36	11,696.19	-7,484.19	2,233.16	7,809.83	0.85	0.31	-0.79
19,836.00	91.15	164.70	11,694.44	-7,575.27	2,260.09	7,904.81	2.47	0.20	2.46
19,930.00	90.10	165.05	11,693.41	-7,666.00	2,284.61	7,998.79	1.18	-1.12	0.37
20,024.00	92.04	162.26	11,691.66	-7,756.18	2,311.06	8,092.76	3.61	2.06	-2.97
20,119.00	90.86	165.00	11,689.25	-7,847.29	2,337.82	8,187.71	3.14	-1.24	2.88
20,214.00	90.50	163.72	11,688.13	-7,938.76	2,363.43	8,282.70	1.40	-0.38	-1.35
20,309.00	90.99	163.28	11,686.89	-8,029.84	2,390.41	8,377.69	0.69	0.52	-0.46
20,403.00	90.59	160.94	11,685.59	-8,119.28	2,419.28	8,471.63	2.53	-0.43	-2.49
20,498.00	90.25	162.76	11,684.90	-8,209.55	2,448.87	8,566.55	1.95	-0.36	1.92
20,592.00	93.91	166.45	11,681.49	-8,300.08	2,473.80	8,660.45	5.53	3.89	3.93
20,686.00	93.57	165.66	11,675.35	-8,391.12	2,496.41	8,754.19	0.91	-0.36	-0.84
20,781.00	91.38	166.94	11,671.25	-8,483.32	2,518.88	8,849.02	2.67	-2.31	1.35
20,875.00	91.02	166.31	11,669.28	-8,574.75	2,540.62	8,942.90	0.77	-0.38	-0.67
20,970.00	90.19	164.96	11,668.28	-8,666.77	2,564.19	9,037.85	1.67	-0.87	-1.42
21,064.00	90.02	164.96	11,668.11	-8,757.55	2,588.58	9,131.83	0.18	-0.18	0.00
21,159.00	90.81	165.72	11,667.42	-8,849.45	2,612.63	9,226.80	1.15	0.83	0.80
21,253.00	90.18	165.43	11,666.61	-8,940.49	2,636.04	9,320.76	0.74	-0.67	-0.31
21,348.00	90.52	166.83	11,666.03	-9,032.71	2,658.81	9,415.69	1.52	0.36	1.47
21,442.00	90.58	167.39	11,665.12	-9,124.34	2,679.78	9,509.55	0.60	0.06	0.60
21,536.00	90.18	167.00	11,664.50	-9,216.00	2,700.62	9,603.40	0.59	-0.43	-0.41
21,630.00	90.04	166.30	11,664.32	-9,307.46	2,722.32	9,697.29	0.76	-0.15	-0.74
21,725.00	90.22	167.95	11,664.10	-9,400.07	2,743.49	9,792.15	1.75	0.19	1.74
21,820.00	89.68	167.65	11,664.19	-9,492.92	2,763.56	9,886.94	0.65	-0.57	-0.32
21,901.00	90.15	169.01	11,664.31	-9,572.24	2,779.95	9,967.70	1.78	0.58	1.68
Final Phoenix MWD Survey									
21,960.00	90.15	169.01	11,664.15	-9,630.16	2,791.19	10,026.47	0.00	0.00	0.00
Projection to TD									



Company:	SWEPI	Local Co-ordinate Reference:	Well 3907H
Project:	Winkler County, Texas (NAD27)	TVD Reference:	RKB @ 2794.50usft (Precision 559)
Site:	University 20 TG Unit	MD Reference:	RKB @ 2794.50usft (Precision 559)
Well:	3907H	North Reference:	Grid
Wellbore:	OH / 66132	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Precision 559)	Database:	USA Compass

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
192.00	192.00	0.84	-0.56	First Phoenix MWD Survey
21,901.00	11,664.31	-9,572.24	2,779.95	Final Phoenix MWD Survey
21,960.00	11,664.15	-9,630.16	2,791.19	Projection to TD

SURVEY DATA CERTIFICATION



PHOENIX
TECHNOLOGY SERVICES

Job #: 66132
Client: SWEPI
County & State: Winkler County, TX
Well: University 20 TG Unit 3907H
API No: 42-495-34450
Proposed Direction: 163.98°

TIE-IN DATA

MD	TVD	INC	AZM	N/-S	E/-W	DATA SOURCE
0.00 ft	0.00 ft	0.00°	0.00°	. N	. E	Surface
Data Source Company:						PHX

SURVEY DATA

First Survey Date	First Survey Depth	INC	AZM
8-Feb-20	192 ft	0.60°	326.35°

Last Survey Date	Last Survey Depth	INC	AZM
10-Apr-20	21,901 ft	90.15°	169.01°

Survey Instrument Type

Velocity

Projected TD Survey Date	Projected TD Survey Depth	INC	AZM
10-Apr-20	21,960 ft	90.15°	169.01°

CORRECTION INFORMATION

Magnetic Declination Used	6.93 degrees
Grid Convergence Used	-1.54 degrees

Corrected to True/Grid North

Grid North

Total Correction	8.47 degrees
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Shawn Ramnarine

TO THE BEST OF MY KNOWLEDGE, I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

Signature

4/10/2020

Date



SHELL WESTERN
E&P

WELL LOCATION
LEASE NAME & WELL NO.:
UNIVERSITY 20 TG UNIT 3907H

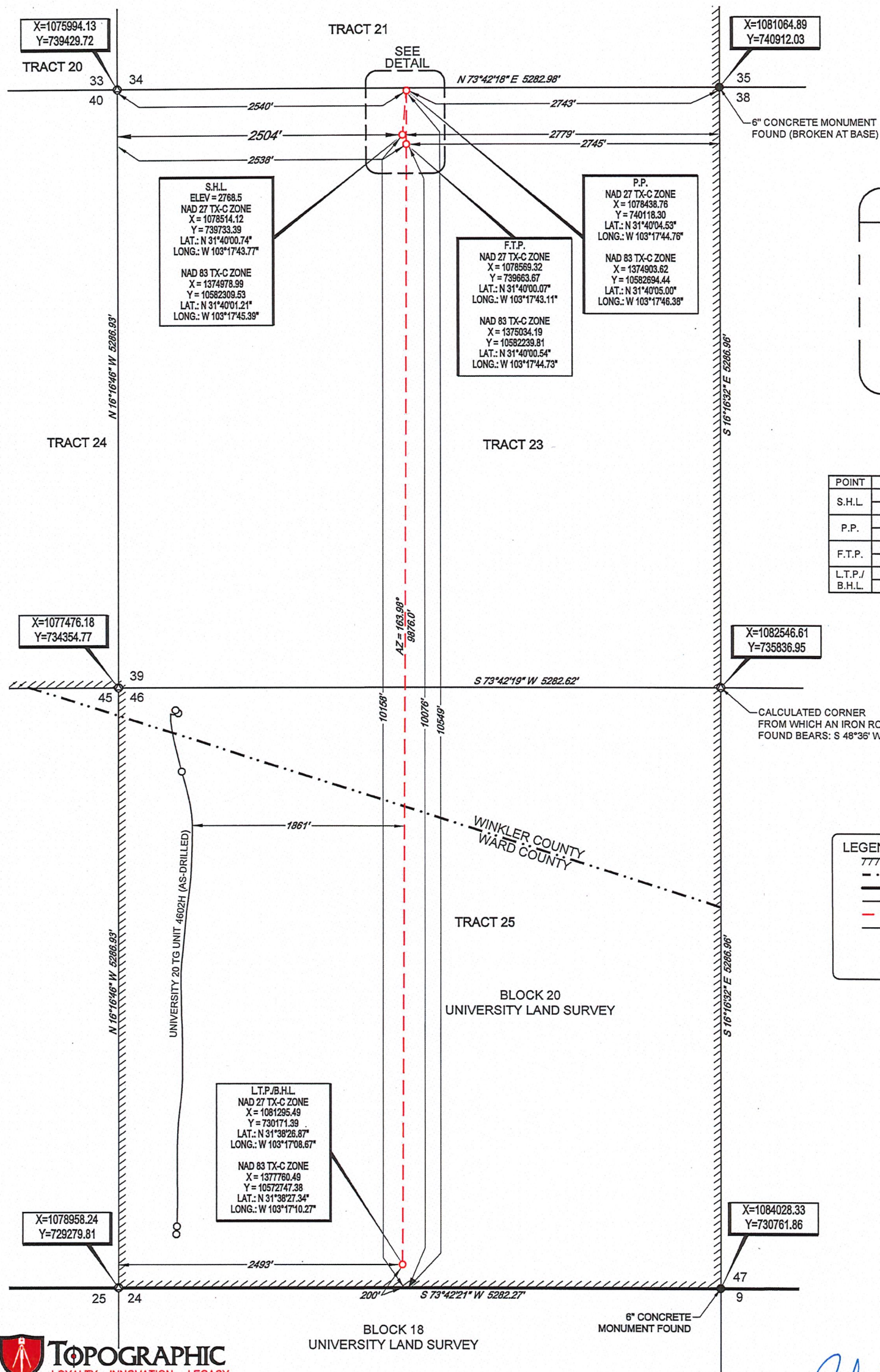
UNIT/LEASE ACREAGE:
13103.98 ACRES (MEASURED)

NEAREST TOWN IN COUNTY:
±9.9 MILES SOUTHWEST OF WINK, TEXAS

DESCRIPTION:
SECTIONS 39 & 46, BLOCK 20, UNIVERSITY LAND SURVEY
WINKLER & WARD COUNTIES, TEXAS



SCALE: 1" = 1000'
0' 500' 1000'



TIES TABLE

POINT	UNIT	SURVEY/SECTION
S.H.L.	2779' FNEL 10158' FSEL	416' FNWL & 2504' FSWL
P.P.	2743' FNEL 10549' FSEL	25' FNWL & 2540' FSWL
F.T.P.	2745' FNEL 10076' FSEL	498' FNWL & 2538' FSWL
L.T.P./ B.H.L.	2493' FSWL 200' FSEL	2493' FSWL & 200' FSEL

LEGEND:

- Unit Boundary
- Approximate County Line
- Block/Township Line
- Survey/Section line
- Proposed Well Path
- Existing/Permitted Well Path
- Monument Found
- Calculated Corner
- Well Point



John R. Anderson 8/14/19
John R. Anderson, R.P.L.S. No. 6442

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
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TELEPHONE: (817) 744-7512 • FAX: (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

UL-20-39-P2A UNIVERSITY 20 TG UNIT 3907H	REVISION:		NOTES:	NOTES CONT'D:
	INT	DATE		
DATE: 08/14/2019			1. ORIGINAL DOCUMENT SIZE: 11" X 17"	6. THE PRELIMINARY LOCATION HAS BEEN CAREFULLY SURVEYED ON THE GROUND DURING THE DATE OF JUNE 21, 2019.
FILE: 10_UL_20_39_P2A_UNIVERSITY_20_TG_UNIT_3907H			2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927, UNLESS OTHERWISE NOTED.	7. S.H.L. = SURFACE HOLE LOCATION
DRAWN BY: A.C.L./O.M.			3. THIS LOCATION AND/OR UNIT/LEASE BOUNDARY HAS BEEN CAREFULLY SURVEYED ON THE GROUND UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE ACCORDING TO THE EVIDENCE, OFFICIAL SURVEY RECORDS, MAPS, AND OTHER DATA PROVIDED BY SHELL WESTERN E&P. THIS PLAT WAS CREATED FOR THE SOLE PURPOSE OF FILING A PERMIT WITH THE RAILROAD COMMISSION OF TEXAS AND SHOULD NOT BE CONSTRUED AS A "BOUNDARY SURVEY" IN COMPLIANCE WITH T.B.P.L.S. MINIMUM STANDARDS OF PROCEDURES FOR BOUNDARY SURVEYS. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.	8. P.P. = POINT OF PENETRATION
SHEET: 1 OF 1			4. ALL ELEVATION VALUES CONTAINED HEREON ARE ORTHOMETRIC ONLY, BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), U.S. SURVEY FEET.	9. F.T.P. = FIRST TAKE POINT
			5. ALL MINERAL OWNERSHIP DATA SHOWN HEREIN IS BASED ON INFORMATION PROVIDED BY SHELL WESTERN E&P OR ITS SUBSIDIARIES & AFFILIATES.	10. L.T.P. = LAST TAKE POINT
				11. B.H.L. = BOTTOM HOLE LOCATION