



**PO Box 4482, Midland, TX 79704 | 432-296-6366**

Railroad Commission of Texas  
Oil & Gas Division  
P.O. Box 12967  
Austin, TX 78711

Attn: Pam Johns

1/17/2022

Re: Piedra Operating, LLC.  
Well: University 8-9 N #4LS  
Field: Spraberry (Trend Area)  
Rig: Burton 10  
County: Andrews County, TX  
Permit: 874738  
API Well No: 42-003-48483

Enclosed please find the original of the surveys performed on the referenced well by True Shot, LLC. (P-5 No. 871488). Other information required by your office is as follows:

Name & Title Of Surveyor	Wellhole Number	Survey Depths	Dates Performed	Type Survey
B. Miller, Field Service Technician	Original Hole	105' - 1791'	1/14/2022 – 1/15/2022	MWD

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

A handwritten signature in blue ink, appearing to read 'R. Nesloney', is positioned above the printed name.

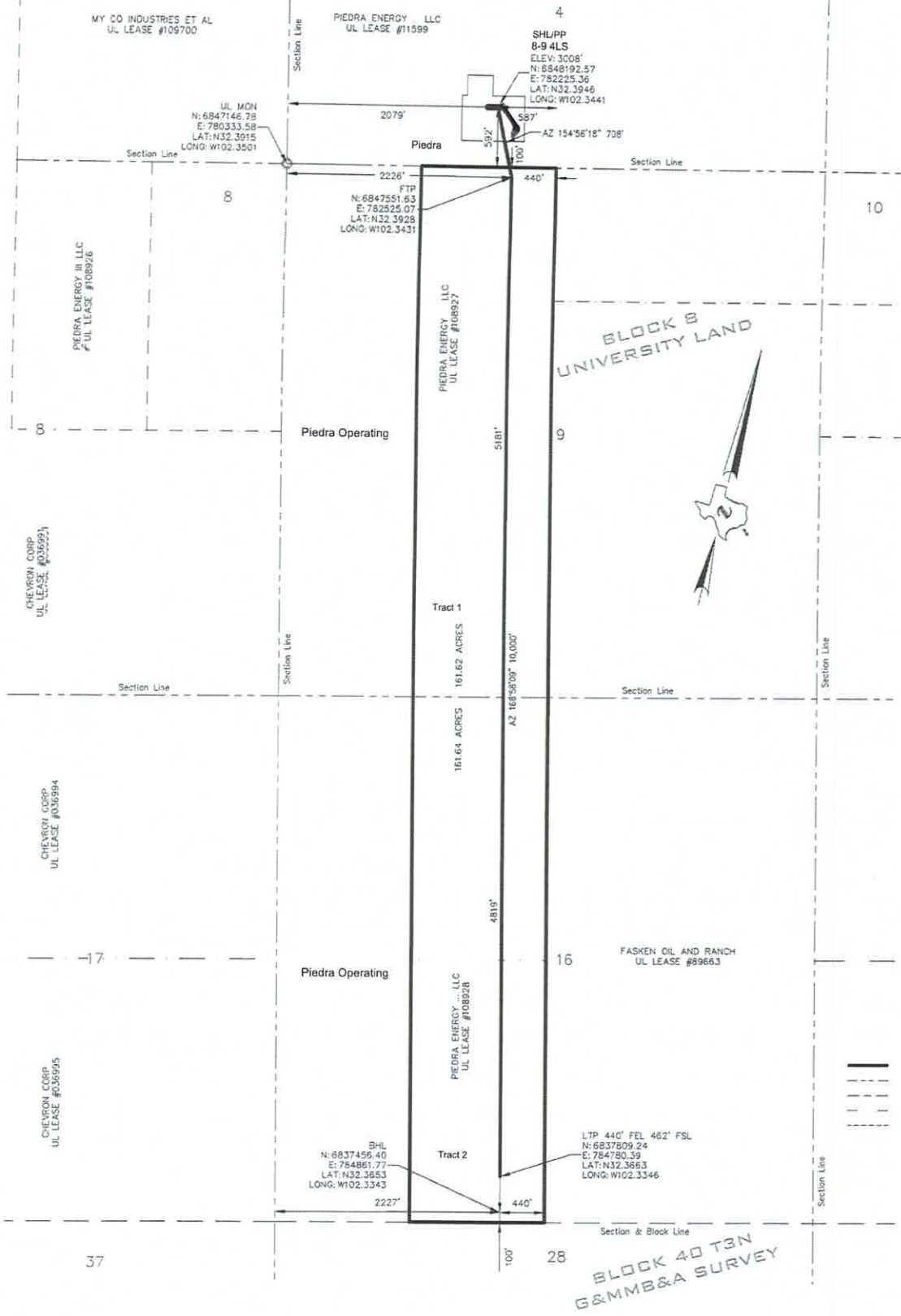
Randall Nesloney  
MWD Manager

1/17/2022

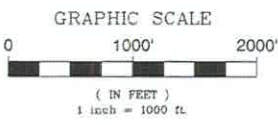
Cc: Piedra Operating, LLC.

[illegible]

University 8-9 N #4LS  
Proposed Bottom Hole Location  
True Shot, LLC.  
Closure Distance: 15.39 Feet  
Closure Direction: 224.30 Degrees Azimuth



**LEGEND:**  
— ACTIVE PIEDRA LINE  
--- SECTION LINE  
--- BLOCK LINE  
--- LEASE LINE  
--- INACTIVE PIEDRA LINE



NOTE:  
COURSES, DISTANCES AND COORDINATES SHOWN HEREON ARE LAMBERT GRID AND CONFORM TO THE "TEXAS COORDINATE SYSTEM", TEXAS NORTH CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983. ALL DISTANCES AND COORDINATES ARE SHOWN IN GRID FEET.  
ELEVATION NAVD 1985

**SCHUMANN ENGINEERING CO.**  
A LATERAL LAND COMPANY  
CIVIL ENGINEERING - LAND SURVEYING  
800 N. WARDEN STREET SUITE 100 WICANDO, TEXAS 75791  
TELEPHONE: (409) 884-2548

THE UNDERSIGNED DOES HEREBY CERTIFY THAT THIS LOCATION WAS THIS DAY MADE ON THE GROUND BY ME OR UNDER MY SUPERVISION AND THAT THIS PLAT IS A CORRECT REPRESENTATION THEREOF.

DATED THIS 10TH DAY OF NOVEMBER, 2021  
RJ DAUM  
TEXAS RLS 4826



Parent to 7H

THIS WELL IS TO BE LOCATED 12.7 MILES IN A EASTERLY DIRECTION FROM ANDREWS WHICH IS THE NEAREST TOWN IN THE COUNTY OF THE WELL SITE.

**LOCATION PLAT**  
PIEDRA OPERATING, LLC.  
WELL NO. 4LS  
UNIVERSITY 8-9  
SURFACE HOLE  
592 FEET FROM THE SOUTH AND  
2079 FEET FROM THE WEST LINES,  
SECTION 4, BLOCK 9,  
BOTTOM HOLE  
100 FEET FROM THE SOUTH AND  
2227 FEET FROM THE WEST LINES  
SECTION 16, BLOCK 8,  
UNIVERSITY LAND  
ANDREWS COUNTY, TEXAS  
QUAD: FIVE WELLS RANCH SW PROJECT: 78158-B  
SCALE: 1" = 1000' JOB NO: 78,158



PO Box 4482, Midland, TX 79704 | 432-296-6366

## MWD Survey Certification

State of Texas  
County of Andrews

I, Randall Nesloney, certify that: I am employed by True Shot, LLC.; that I did on the day(s) of 1/14/2022 through 1/15/2022 conduct or supervise the taking of MWD surveys from a depth of 105 feet to a depth of 1791 feet, that the data is true, correct, complete and within the limitations of the tool as set forth by True Shot, LLC; that I am authorized and qualified to make this report; that these surveys were conducted at the request of Piedra Operating, LLC. for the University 8-9 N #4LS (API No. 42-003-48483, Permit No. 874738), located in Andrews County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by True Shot, LLC.

A handwritten signature in blue ink, appearing to be 'R. Nesloney'.

1/17/2022

Randall Nesloney  
MWD Manager

Cc: Piedra Operating, LLC.





## **Piedra Operating LLC**

**Andrews Co TX**

**Sec 4/9/16 Blk 8/9 T3N**

**University 8-9 4H LS**

**OH Wellbore**

**Design: As Drilled**

## **Standard Survey Report**

**14 April, 2022**



<b>Company:</b>	Piedra Operating LLC	<b>Local Co-ordinate Reference:</b>	Well University 8-9 4H LS
<b>Project:</b>	Andrews Co TX	<b>TVD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Site:</b>	Sec 4/9/16 Blk 8/9 T3N	<b>MD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Well:</b>	University 8-9 4H LS	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH Wellbore	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Midland

<b>Project</b>	Andrews Co TX, Andrews County, Texas		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Texas North Central Zone		

Site		Sec 4/9/16 Blk 8/9 T3N, Site Center: University 8-4 #1			
Site Position:		Northing:	6,851,121.30 usft	Latitude:	32.402669
From:	Map	Easting:	782,866.20 usft	Longitude:	-102.342409
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-2.10 °

Well		University 8-9 4H LS				
Well Position	+N/-S	0.00 usft	Northing:	6,848,192.57 usft	Latitude:	32.394560
	+E/-W	0.00 usft	Easting:	782,225.36 usft	Longitude:	-102.344137
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,034.00 usft	Ground Level:	3,008.00 usft

<b>Wellbore</b>	OH Wellbore				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM2021_FILE	12/31/2021	5.83	60.02	47,494.90000000

<b>Design</b>	As Drilled				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	166.12	

<b>Survey Program</b>	<b>Date</b>	4/14/2022			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
121.00	1,807.00	Survey #1 (OH Wellbore)	MWD	MWD - Standard	
1,952.00	19,833.00	Survey #2 (OH Wellbore)	MWD+HDGM	OWSG MWD + HDGM	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
121.00	0.57	142.25	121.00	-0.48	0.37	0.55	0.47	0.47	0.00	
245.00	0.62	221.18	244.99	-1.47	0.30	1.50	0.61	0.04	63.65	
319.00	1.23	255.72	318.98	-1.97	-0.73	1.73	1.08	0.82	46.68	
405.00	1.10	247.81	404.97	-2.51	-2.39	1.86	0.24	-0.15	-9.20	
490.00	1.05	225.66	489.95	-3.36	-3.70	2.37	0.49	-0.06	-26.06	
577.00	0.97	218.54	576.94	-4.49	-4.73	3.22	0.17	-0.09	-8.18	
666.00	0.66	221.00	665.93	-5.47	-5.53	3.98	0.35	-0.35	2.76	
754.00	0.18	299.84	753.93	-5.78	-5.99	4.18	0.74	-0.55	89.59	
840.00	0.31	211.07	839.92	-5.91	-6.22	4.25	0.41	0.15	-103.22	

<b>Company:</b>	Piedra Operating LLC	<b>Local Co-ordinate Reference:</b>	Well University 8-9 4H LS
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<b>Site:</b>	Sec 4/9/16 Blk 8/9 T3N	<b>MD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Well:</b>	University 8-9 4H LS	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH Wellbore	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Midland

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)
926.00	0.62	223.64	925.92	-6.45	-6.67	4.66	0.38	0.36	14.62
1,012.00	0.84	219.95	1,011.91	-7.27	-7.39	5.28	0.26	0.26	-4.29
1,100.00	0.92	196.57	1,099.90	-8.44	-8.01	6.27	0.41	0.09	-26.57
1,189.00	0.48	269.78	1,188.90	-9.13	-8.58	6.80	1.02	-0.49	82.26
1,273.00	0.35	258.36	1,272.90	-9.18	-9.19	6.71	0.18	-0.15	-13.60
1,360.00	0.31	244.29	1,359.89	-9.34	-9.66	6.75	0.10	-0.05	-16.17
1,446.00	0.31	208.26	1,445.89	-9.64	-9.98	6.97	0.22	0.00	-41.90
1,579.00	0.35	178.38	1,578.89	-10.36	-10.14	7.63	0.13	0.03	-22.47
1,711.00	0.31	258.09	1,710.89	-10.84	-10.48	8.01	0.32	-0.03	60.39
1,807.00	0.22	170.47	1,806.89	-11.08	-10.70	8.19	0.39	-0.09	-91.27
1,952.00	0.48	199.10	1,951.89	-11.92	-10.85	8.97	0.21	0.18	19.74
2,047.00	1.45	149.22	2,046.88	-13.33	-10.37	10.46	1.26	1.02	-52.51
2,141.00	2.80	140.78	2,140.81	-16.13	-8.31	13.67	1.47	1.44	-8.98
2,235.00	4.36	131.64	2,234.62	-20.29	-4.18	18.69	1.76	1.66	-9.72
2,330.00	4.65	129.54	2,329.33	-25.14	1.48	24.76	0.35	0.31	-2.21
2,424.00	5.18	130.86	2,422.98	-30.34	7.63	31.28	0.58	0.56	1.40
2,518.00	5.25	129.31	2,516.59	-35.84	14.17	38.19	0.17	0.07	-1.65
2,613.00	5.21	127.39	2,611.20	-41.21	20.96	45.04	0.19	-0.04	-2.02
2,707.00	5.23	126.56	2,704.81	-46.36	27.79	51.67	0.08	0.02	-0.88
2,801.00	5.33	126.24	2,798.41	-51.49	34.75	58.32	0.11	0.11	-0.34
2,896.00	5.21	126.74	2,893.01	-56.68	41.77	65.04	0.14	-0.13	0.53
2,990.00	5.13	127.27	2,986.63	-61.78	48.53	71.62	0.10	-0.09	0.56
3,085.00	5.10	125.34	3,081.25	-66.79	55.36	78.12	0.18	-0.03	-2.03
3,179.00	5.08	124.89	3,174.88	-71.59	62.18	84.42	0.05	-0.02	-0.48
3,274.00	5.08	123.72	3,269.50	-76.33	69.13	90.69	0.11	0.00	-1.23
3,368.00	4.98	123.06	3,363.14	-80.86	76.01	96.74	0.12	-0.11	-0.70
3,463.00	3.70	135.64	3,457.87	-85.31	81.61	102.39	1.67	-1.35	13.24
3,558.00	2.99	139.48	3,552.71	-89.38	85.36	107.25	0.78	-0.75	4.04
3,652.00	2.54	133.82	3,646.60	-92.69	88.46	111.20	0.56	-0.48	-6.02
3,746.00	1.10	120.95	3,740.55	-94.59	90.73	113.60	1.58	-1.53	-13.69
3,841.00	0.88	116.98	3,835.53	-95.39	92.16	114.72	0.24	-0.23	-4.18
3,935.00	0.53	104.19	3,929.53	-95.83	93.23	115.40	0.41	-0.37	-13.61
4,030.00	0.53	105.21	4,024.52	-96.05	94.08	115.82	0.01	0.00	1.07
4,124.00	1.10	179.47	4,118.52	-97.07	94.51	116.91	1.15	0.61	79.00
4,218.00	1.33	186.07	4,212.49	-99.05	94.40	118.81	0.29	0.24	7.02
4,313.00	1.30	180.78	4,307.47	-101.23	94.27	120.89	0.13	-0.03	-5.57
4,407.00	1.31	182.56	4,401.44	-103.37	94.21	122.95	0.04	0.01	1.89
4,501.00	1.21	174.79	4,495.42	-105.43	94.25	124.96	0.21	-0.11	-8.27
4,595.00	1.09	171.37	4,589.40	-107.30	94.47	126.83	0.15	-0.13	-3.64
4,690.00	1.07	172.81	4,684.39	-109.07	94.72	128.62	0.04	-0.02	1.52
4,785.00	1.23	209.79	4,779.37	-110.84	94.32	130.23	0.78	0.17	38.93
4,880.00	1.22	214.93	4,874.35	-112.55	93.24	131.64	0.12	-0.01	5.41
4,974.00	1.10	205.95	4,968.33	-114.19	92.27	132.99	0.23	-0.13	-9.55

<b>Company:</b>	Piedra Operating LLC	<b>Local Co-ordinate Reference:</b>	Well University 8-9 4H LS
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<b>Well:</b>	University 8-9 4H LS	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH Wellbore	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Midland

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)	
5,069.00	1.15	205.18	5,063.31	-115.87	91.47	134.43	0.05	0.05	-0.81	
5,163.00	1.02	204.56	5,157.29	-117.48	90.72	135.82	0.14	-0.14	-0.66	
5,258.00	0.88	221.76	5,252.28	-118.80	89.88	136.89	0.33	-0.15	18.11	
5,352.00	0.81	225.88	5,346.27	-119.80	88.92	137.63	0.10	-0.07	4.38	
5,446.00	0.81	225.96	5,440.26	-120.72	87.97	138.30	0.00	0.00	0.09	
5,541.00	0.93	229.43	5,535.25	-121.69	86.90	138.99	0.14	0.13	3.65	
5,635.00	0.84	232.11	5,629.24	-122.61	85.78	139.61	0.11	-0.10	2.85	
5,730.00	0.91	261.31	5,724.23	-123.15	84.48	139.82	0.47	0.07	30.74	
5,824.00	1.06	278.84	5,818.21	-123.13	82.88	139.42	0.36	0.16	18.65	
5,918.00	1.08	289.06	5,912.20	-122.71	81.19	138.60	0.20	0.02	10.87	
6,013.00	1.04	289.53	6,007.18	-122.13	79.53	137.64	0.04	-0.04	0.49	
6,107.00	0.89	313.75	6,101.17	-121.34	78.20	136.55	0.46	-0.16	25.77	
6,201.00	0.85	347.17	6,195.16	-120.15	77.51	135.24	0.53	-0.04	35.55	
6,296.00	0.87	347.95	6,290.15	-118.76	77.21	133.81	0.02	0.02	0.82	
6,390.00	0.92	351.40	6,384.14	-117.31	76.95	132.35	0.08	0.05	3.67	
6,485.00	0.86	353.90	6,479.12	-115.85	76.76	130.88	0.08	-0.06	2.63	
6,579.00	0.84	359.11	6,573.11	-114.46	76.67	129.51	0.08	-0.02	5.54	
6,674.00	0.82	359.14	6,668.10	-113.09	76.65	128.17	0.02	-0.02	0.03	
6,769.00	0.75	358.61	6,763.09	-111.78	76.62	126.90	0.07	-0.07	-0.56	
6,863.00	0.77	354.23	6,857.09	-110.54	76.55	125.68	0.07	0.02	-4.66	
6,958.00	0.71	357.95	6,952.08	-109.32	76.46	124.47	0.08	-0.06	3.92	
7,052.00	0.53	351.09	7,046.07	-108.31	76.37	123.47	0.21	-0.19	-7.30	
7,147.00	0.48	5.52	7,141.07	-107.48	76.34	122.65	0.14	-0.05	15.19	
7,241.00	0.32	357.41	7,235.07	-106.82	76.37	122.02	0.18	-0.17	-8.63	
7,335.00	0.27	5.52	7,329.07	-106.34	76.38	121.56	0.07	-0.05	8.63	
7,430.00	0.19	12.89	7,424.06	-105.96	76.43	121.21	0.09	-0.08	7.76	
7,524.00	0.11	65.32	7,518.06	-105.77	76.55	121.05	0.16	-0.09	55.78	
7,619.00	0.54	121.67	7,613.06	-105.97	77.02	121.35	0.51	0.45	59.32	
7,713.00	0.75	145.74	7,707.06	-106.71	77.74	122.25	0.36	0.22	25.61	
7,807.00	0.87	144.25	7,801.05	-107.80	78.50	123.49	0.13	0.13	-1.59	
7,901.00	1.28	144.23	7,895.03	-109.23	79.53	125.12	0.44	0.44	-0.02	
7,995.00	1.25	132.83	7,989.01	-110.78	80.90	126.95	0.27	-0.03	-12.13	
8,090.00	1.14	132.81	8,083.99	-112.13	82.35	128.61	0.12	-0.12	-0.02	
8,184.00	1.13	128.31	8,177.97	-113.34	83.76	130.12	0.10	-0.01	-4.79	
8,278.00	1.00	134.90	8,271.95	-114.49	85.07	131.56	0.19	-0.14	7.01	
8,372.00	0.82	132.94	8,365.94	-115.53	86.15	132.82	0.19	-0.19	-2.09	
8,466.00	0.64	147.67	8,459.93	-116.43	86.92	133.88	0.28	-0.19	15.67	
8,560.00	0.38	144.33	8,553.93	-117.12	87.38	134.67	0.28	-0.28	-3.55	
8,655.00	0.47	129.13	8,648.93	-117.63	87.87	135.27	0.15	0.09	-16.00	
8,819.00	0.69	73.29	8,812.92	-117.77	89.34	135.76	0.35	0.13	-34.05	
8,913.00	0.61	76.77	8,906.91	-117.49	90.36	135.74	0.09	-0.09	3.70	
9,008.00	11.60	154.75	9,001.26	-126.04	94.95	145.14	12.09	11.57	82.08	
9,102.00	23.30	158.82	9,090.78	-152.02	105.73	172.94	12.51	12.45	4.33	



<b>Company:</b>	Piedra Operating LLC	<b>Local Co-ordinate Reference:</b>	Well University 8-9 4H LS
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<b>Design:</b>	As Drilled	<b>Database:</b>	Midland

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)
9,196.00	28.94	162.56	9,175.15	-191.08	119.28	214.12	6.25	6.00	3.98
9,290.00	32.28	163.07	9,256.04	-236.81	133.41	261.90	3.56	3.55	0.54
9,385.00	44.73	163.24	9,330.24	-293.30	150.50	320.85	13.11	13.11	0.18
9,479.00	45.84	163.56	9,396.37	-357.32	169.58	387.57	1.21	1.18	0.34
9,574.00	52.96	162.11	9,458.16	-426.17	190.90	459.53	7.58	7.49	-1.53
9,668.00	59.92	157.10	9,510.11	-499.46	218.30	537.25	8.63	7.40	-5.33
9,732.84	63.35	155.21	9,540.91	-551.63	241.37	593.43	5.88	5.30	-2.91
<b>Cross Lease Line - 9732.84 MD 9540.91 TVD</b>									
9,763.00	64.96	154.37	9,554.06	-576.19	252.94	620.05	5.88	5.32	-2.79
9,843.93	73.18	154.83	9,582.95	-644.42	285.32	694.05	10.17	10.16	0.57
<b>FTP 100 FNL - 9843.93 MD 9582.95 TVD</b>									
9,858.00	74.61	154.91	9,586.85	-656.66	291.06	707.31	10.17	10.16	0.54
9,978.00	90.74	159.92	9,602.11	-766.19	336.52	824.55	14.06	13.44	4.18
10,073.00	90.44	162.70	9,601.13	-856.16	366.96	919.20	2.94	-0.32	2.93
10,167.00	90.81	164.88	9,600.10	-946.42	393.19	1,013.11	2.35	0.39	2.32
10,262.00	91.11	166.08	9,598.51	-1,038.37	417.01	1,108.09	1.30	0.32	1.26
10,356.00	91.68	167.74	9,596.22	-1,129.89	438.29	1,202.05	1.87	0.61	1.77
10,451.00	92.48	168.77	9,592.77	-1,222.84	457.62	1,296.92	1.37	0.84	1.08
10,545.00	91.41	169.53	9,589.58	-1,315.11	475.30	1,390.73	1.40	-1.14	0.81
10,640.00	90.37	167.63	9,588.11	-1,408.21	494.11	1,485.63	2.28	-1.09	-2.00
10,735.00	88.49	166.08	9,589.05	-1,500.71	515.71	1,580.61	2.56	-1.98	-1.63
10,829.00	88.62	164.93	9,591.42	-1,591.69	539.23	1,674.57	1.23	0.14	-1.22
10,924.00	88.49	165.32	9,593.82	-1,683.47	563.61	1,769.53	0.43	-0.14	0.41
11,018.00	88.02	166.11	9,596.68	-1,774.52	586.79	1,863.48	0.98	-0.50	0.84
11,112.00	88.05	166.41	9,599.91	-1,865.78	609.10	1,957.42	0.32	0.03	0.32
11,206.00	88.39	167.29	9,602.83	-1,957.27	630.48	2,051.37	1.00	0.36	0.94
11,300.00	88.16	168.31	9,605.66	-2,049.10	650.33	2,145.28	1.11	-0.24	1.09
11,394.00	88.79	168.53	9,608.16	-2,141.16	669.20	2,239.17	0.71	0.67	0.23
11,489.00	90.17	168.19	9,609.02	-2,234.20	688.36	2,334.10	1.50	1.45	-0.36
11,583.00	90.54	167.82	9,608.44	-2,326.14	707.90	2,428.04	0.56	0.39	-0.39
11,677.00	91.92	166.19	9,606.42	-2,417.71	729.03	2,522.00	2.27	1.47	-1.73
11,771.00	92.12	166.45	9,603.11	-2,508.98	751.25	2,615.95	0.35	0.21	0.28
11,866.00	93.02	166.61	9,598.85	-2,601.28	773.35	2,710.85	0.96	0.95	0.17
11,960.00	92.12	165.20	9,594.63	-2,692.35	796.22	2,804.75	1.78	-0.96	-1.50
12,055.00	89.87	165.79	9,592.98	-2,784.30	820.01	2,899.72	2.45	-2.37	0.62
12,150.00	89.77	165.86	9,593.28	-2,876.41	843.27	2,994.72	0.13	-0.11	0.07
12,244.00	90.57	166.22	9,593.00	-2,967.63	865.95	3,088.72	0.93	0.85	0.38
12,339.00	90.10	165.42	9,592.44	-3,059.74	889.22	3,183.71	0.98	-0.49	-0.84
12,433.00	89.73	165.70	9,592.58	-3,150.77	912.66	3,277.71	0.49	-0.39	0.30
12,528.00	90.10	165.94	9,592.73	-3,242.87	935.93	3,372.71	0.46	0.39	0.25
12,622.00	89.80	165.99	9,592.81	-3,334.07	958.73	3,466.71	0.32	-0.32	0.05
12,716.00	89.20	166.51	9,593.63	-3,425.37	981.07	3,560.70	0.84	-0.64	0.55
12,811.00	89.97	167.22	9,594.32	-3,517.88	1,002.66	3,655.69	1.10	0.81	0.75
12,905.00	90.44	168.34	9,593.98	-3,609.75	1,022.55	3,749.65	1.29	0.50	1.19

<b>Company:</b>	Piedra Operating LLC	<b>Local Co-ordinate Reference:</b>	Well University 8-9 4H LS
<b>Project:</b>	Andrews Co TX	<b>TVD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Site:</b>	Sec 4/9/16 Blk 8/9 T3N	<b>MD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Well:</b>	University 8-9 4H LS	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH Wellbore	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Midland

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)
13,000.00	90.34	169.06	9,593.33	-3,702.90	1,041.17	3,844.55	0.77	-0.11	0.76
13,094.00	89.23	167.91	9,593.69	-3,795.01	1,059.93	3,938.47	1.70	-1.18	-1.22
13,188.00	89.36	167.44	9,594.84	-3,886.83	1,080.00	4,032.42	0.52	0.14	-0.50
13,282.00	88.12	166.81	9,596.91	-3,978.44	1,100.94	4,126.38	1.48	-1.32	-0.67
13,376.00	89.77	168.12	9,598.64	-4,070.18	1,121.33	4,220.34	2.24	1.76	1.39
13,471.00	89.63	167.72	9,599.14	-4,163.08	1,141.21	4,315.29	0.45	-0.15	-0.42
13,565.00	88.29	167.15	9,600.84	-4,254.81	1,161.66	4,409.24	1.55	-1.43	-0.61
13,659.00	89.43	167.58	9,602.71	-4,346.51	1,182.22	4,503.20	1.30	1.21	0.46
13,753.00	91.31	168.79	9,602.11	-4,438.51	1,201.46	4,597.13	2.38	2.00	1.29
13,847.00	91.68	168.90	9,599.65	-4,530.71	1,219.64	4,690.99	0.41	0.39	0.12
13,941.00	92.75	170.63	9,596.02	-4,623.14	1,236.33	4,784.73	2.16	1.14	1.84
14,036.00	91.44	168.57	9,592.55	-4,716.51	1,253.47	4,879.48	2.57	-1.38	-2.17
14,130.00	90.64	166.74	9,590.84	-4,808.31	1,273.56	4,973.43	2.12	-0.85	-1.95
14,224.00	90.50	166.67	9,589.91	-4,899.79	1,295.18	5,067.42	0.17	-0.15	-0.07
14,319.00	90.10	166.36	9,589.41	-4,992.17	1,317.33	5,162.42	0.53	-0.42	-0.33
14,413.00	89.56	165.85	9,589.69	-5,083.42	1,339.90	5,256.41	0.79	-0.57	-0.54
14,506.00	89.33	166.10	9,590.59	-5,173.64	1,362.44	5,349.41	0.37	-0.25	0.27
14,601.00	89.26	166.27	9,591.76	-5,265.88	1,385.12	5,444.40	0.19	-0.07	0.18
14,695.00	89.87	165.01	9,592.47	-5,356.94	1,408.43	5,538.39	1.49	0.65	-1.34
14,789.00	88.89	165.09	9,593.49	-5,447.75	1,432.68	5,632.37	1.05	-1.04	0.09
14,882.00	89.77	166.88	9,594.58	-5,537.98	1,455.20	5,725.36	2.14	0.95	1.92
14,977.00	88.86	166.11	9,595.71	-5,630.34	1,477.38	5,820.35	1.25	-0.96	-0.81
15,071.00	91.24	166.85	9,595.63	-5,721.73	1,499.36	5,914.34	2.65	2.53	0.79
15,165.00	92.18	167.46	9,592.82	-5,813.33	1,520.25	6,008.28	1.19	1.00	0.65
15,259.00	92.65	167.89	9,588.86	-5,905.09	1,540.29	6,102.16	0.68	0.50	0.46
15,354.00	93.09	168.48	9,584.11	-5,997.96	1,559.72	6,196.98	0.77	0.46	0.62
15,448.00	93.22	168.29	9,578.93	-6,089.89	1,578.62	6,290.76	0.24	0.14	-0.20
15,542.00	94.13	169.18	9,572.91	-6,181.89	1,596.94	6,384.47	1.35	0.97	0.95
15,636.00	90.54	169.29	9,569.08	-6,274.14	1,614.48	6,478.24	3.82	-3.82	0.12
15,731.00	90.13	168.92	9,568.52	-6,367.43	1,632.44	6,573.11	0.58	-0.43	-0.39
15,826.00	88.86	168.33	9,569.36	-6,460.56	1,651.17	6,668.01	1.47	-1.34	-0.62
15,920.00	90.60	169.15	9,569.80	-6,552.74	1,669.53	6,761.91	2.05	1.85	0.87
16,015.00	93.09	169.32	9,566.75	-6,646.01	1,687.26	6,856.71	2.63	2.62	0.18
16,109.00	89.56	166.92	9,564.57	-6,737.95	1,706.60	6,950.61	4.54	-3.76	-2.55
16,203.00	88.59	166.86	9,566.09	-6,829.49	1,727.92	7,044.58	1.03	-1.03	-0.06
16,297.00	87.72	165.97	9,569.12	-6,920.81	1,749.99	7,138.53	1.32	-0.93	-0.95
16,392.00	87.38	165.81	9,573.18	-7,012.86	1,773.13	7,233.44	0.40	-0.36	-0.17
16,486.00	86.75	166.00	9,577.99	-7,103.91	1,795.99	7,327.32	0.70	-0.67	0.20
16,581.00	87.48	166.07	9,582.77	-7,195.99	1,818.89	7,422.20	0.77	0.77	0.07
16,676.00	91.64	166.79	9,583.50	-7,288.31	1,841.17	7,517.17	4.44	4.38	0.76
16,770.00	91.54	167.94	9,580.89	-7,380.00	1,861.72	7,611.11	1.23	-0.11	1.22
16,865.00	91.61	168.85	9,578.28	-7,473.02	1,880.83	7,706.00	0.96	0.07	0.96
16,959.00	91.07	167.95	9,576.08	-7,565.07	1,899.72	7,799.90	1.12	-0.57	-0.96

<b>Company:</b>	Piedra Operating LLC	<b>Local Co-ordinate Reference:</b>	Well University 8-9 4H LS
<b>Project:</b>	Andrews Co TX	<b>TVD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Site:</b>	Sec 4/9/16 Blk 8/9 T3N	<b>MD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Well:</b>	University 8-9 4H LS	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH Wellbore	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Midland

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)
17,053.00	92.15	168.42	9,573.44	-7,657.04	1,918.96	7,893.80	1.25	1.15	0.50
17,147.00	90.47	165.46	9,571.29	-7,748.57	1,940.20	7,987.75	3.62	-1.79	-3.15
17,241.00	91.51	166.32	9,569.67	-7,839.72	1,963.11	8,081.73	1.44	1.11	0.91
17,336.00	89.97	164.57	9,568.44	-7,931.66	1,986.98	8,176.71	2.45	-1.62	-1.84
17,430.00	90.20	164.72	9,568.30	-8,022.30	2,011.87	8,270.68	0.29	0.24	0.16
17,525.00	91.27	165.89	9,567.08	-8,114.19	2,035.97	8,365.66	1.67	1.13	1.23
17,619.00	89.83	166.92	9,566.18	-8,205.54	2,058.06	8,459.65	1.88	-1.53	1.10
17,713.00	88.66	166.61	9,567.42	-8,297.04	2,079.58	8,553.64	1.29	-1.24	-0.33
17,808.00	89.23	167.01	9,569.17	-8,389.52	2,101.25	8,648.61	0.73	0.60	0.42
17,902.00	88.99	167.03	9,570.63	-8,481.10	2,122.36	8,742.59	0.26	-0.26	0.02
17,997.00	90.03	167.50	9,571.44	-8,573.76	2,143.30	8,837.57	1.20	1.09	0.49
18,091.00	88.76	167.32	9,572.43	-8,665.49	2,163.79	8,931.53	1.36	-1.35	-0.19
18,185.00	89.03	167.45	9,574.25	-8,757.21	2,184.32	9,025.49	0.32	0.29	0.14
18,279.00	90.40	167.79	9,574.71	-8,849.02	2,204.47	9,119.46	1.50	1.46	0.36
18,373.00	90.54	167.66	9,573.94	-8,940.87	2,224.45	9,213.42	0.20	0.15	-0.14
18,468.00	89.80	167.72	9,573.66	-9,033.68	2,244.71	9,308.38	0.78	-0.78	0.06
18,562.00	91.04	167.53	9,572.97	-9,125.49	2,264.85	9,402.34	1.33	1.32	-0.20
18,656.00	90.47	166.43	9,571.73	-9,217.07	2,286.03	9,496.32	1.32	-0.61	-1.17
18,751.00	90.64	166.17	9,570.81	-9,309.36	2,308.52	9,591.32	0.33	0.18	-0.27
18,845.00	91.14	166.57	9,569.35	-9,400.70	2,330.67	9,685.31	0.68	0.53	0.43
18,939.00	90.20	165.86	9,568.25	-9,491.98	2,353.07	9,779.30	1.25	-1.00	-0.76
19,033.00	90.77	166.57	9,567.46	-9,583.27	2,375.47	9,873.29	0.97	0.61	0.76
19,127.00	91.14	167.13	9,565.89	-9,674.79	2,396.85	9,967.27	0.71	0.39	0.60
19,221.00	91.54	167.15	9,563.69	-9,766.41	2,417.76	10,061.23	0.43	0.43	0.02
19,316.00	88.56	166.59	9,563.61	-9,858.92	2,439.34	10,156.21	3.19	-3.14	-0.59
19,410.00	88.86	166.61	9,565.73	-9,950.33	2,461.12	10,250.18	0.32	0.32	0.02
19,504.00	90.27	166.28	9,566.44	-10,041.71	2,483.15	10,344.18	1.54	1.50	-0.35
19,598.00	91.44	166.12	9,565.04	-10,132.99	2,505.57	10,438.17	1.26	1.24	-0.17
19,692.00	91.71	166.35	9,562.45	-10,224.25	2,527.93	10,532.13	0.38	0.29	0.24
19,773.00	93.02	166.53	9,559.11	-10,302.93	2,546.90	10,613.06	1.63	1.62	0.22
19,833.00	93.02	166.53	9,555.95	-10,361.19	2,560.86	10,672.97	0.00	0.00	0.00
Actual BH: 483.5 FSL 429 FEL - 19833 MD 9555.95 MD - Y-6837831.38 X-784786.22. - 32.366356°N 102.334620°W									

<b>Company:</b>	Piedra Operating LLC	<b>Local Co-ordinate Reference:</b>	Well University 8-9 4H LS
<b>Project:</b>	Andrews Co TX	<b>TVD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Site:</b>	Sec 4/9/16 Blk 8/9 T3N	<b>MD Reference:</b>	HP 460 3008 GL 26 KB @ 3034.00usft
<b>Well:</b>	University 8-9 4H LS	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH Wellbore	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Midland

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,732.84	9,540.91	-551.63	241.37	Cross Lease Line
9,732.84	9,540.91	-551.63	241.37	9732.84 MD 9540.91 TVD
9,843.93	9,582.95	-644.42	285.32	FTP 100 FNL
9,843.93	9,582.95	-644.42	285.32	9843.93 MD 9582.95 TVD
19,833.00	9,555.95	-10,361.19	2,560.86	Actual BH: 483.5 FSL 429 FEL
19,833.00	9,555.95	-10,361.19	2,560.86	19833 MD 9555.95 MD
19,833.00	9,555.95	-10,361.19	2,560.86	Y-6837831.38 X-784786.22.
19,833.00	9,555.95	-10,361.19	2,560.86	32.366356°N 102.334620°W

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

MY CO INDUSTRIES ET AL  
UL LEASE #109700

PIEDRA ENERGY III LLC  
UL LEASE #11599

4

8-9 4H LS  
ELEV: 3008'  
N: 6848192.57  
E: 782225.36  
LAT: N32.3946  
LONG: W102.3441

UL MON  
N: 6847146.78  
E: 780333.58  
LAT: N32.3915  
LONG: W102.3501

2079'

587'

AZ 154°56'18" 708'

Section Line

Section Line

8

10

PIEDRA ENERGY III LLC  
UL LEASE #108926

FTP  
N: 6847551.63  
E: 782525.07  
LAT: N32.3928  
LONG: W102.3431

PIEDRA ENERGY III LLC  
UL LEASE #108927

BLOCK 8  
UNIVERSITY LAND

8

9

CHEVRON CORP  
UL LEASE #036991

Section Line

Section Line

CHEVRON CORP  
UL LEASE #036994

161.62 ACRES

161.64 ACRES

AZ 168°58'09" 10,000'

4819'

17

16

FASKEN OIL AND RANCH  
UL LEASE #89663

PIEDRA ENERGY III LLC  
UL LEASE #108928

BHL  
N: 6837456.40  
E: 784861.77  
LAT: N32.3653  
LONG: W102.3343

LTP 440' FEL 462' FSL  
N: 6837809.24  
E: 784780.39  
LAT: N32.3663  
LONG: W102.3346

2227'

440'

Section & Block Line

37

28

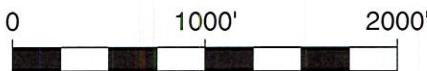
BLOCK 40 T3N  
G&MMB&A SURVEY

LEGEND:

- ACTIVE PIEDRA LINE
- SECTION LINE
- BLOCK LINE
- LEASE LINE
- INACTIVE PIEDRA LINE

BH: 9555.95 TVD 10361.19 S 2560.86 E  
19833 MD 10672.97 ft @ 166.12 Az

GRAPHIC SCALE



( IN FEET )  
1 inch = 1000 ft.

NOTE:

COURSES, DISTANCES AND COORDINATES SHOWN HEREON ARE LAMBERT GRID AND CONFORM TO THE "TEXAS COORDINATE SYSTEM", TEXAS NORTH CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983. ALL DISTANCES AND COORDINATES ARE SHOWN IN GRID FEET.

ELEVATION NAVD 1988



**SCHUMANN**  
ENGINEERING CO.  
A LATERAL LAND COMPANY

CIVIL ENGINEERING - LAND SURVEYING  
TEXAS FIRM No. F1680 - TEXAS FIRM No. 10149500

800 N. MARIENFELD STREET  
SUITE 100  
MIDLAND, TEXAS 79701

Office (432) 684-5548

THE UNDERSIGNED DOES HEREBY CERTIFY  
THAT THIS LOCATION WAS THIS DAY MADE  
ON THE GROUND BY ME OR UNDER MY  
SUPERVISION AND THAT THIS PLAT IS A  
CORRECT REPRESENTATION THEREOF.

DATED THIS 10TH DAY OF NOVEMBER, 2021

RJ DAUM  
TEXAS RLS 4826



THIS WELL IS TO BE LOCATED 12.7 MILES IN A  
EASTERLY DIRECTION FROM ANDREWS WHICH IS THE  
NEAREST TOWN IN THE COUNTY OF THE WELL SITE.

LOCATION PLAT

PIEDRA OPERATING, LLC.

WELL NO. 4H LS  
UNIVERSITY 8-9 N

SURFACE HOLE  
592 FEET FROM THE SOUTH AND  
2079 FEET FROM THE WEST LINES,  
SECTION 4, BLOCK 9,  
BOTTOM HOLE  
100 FEET FROM THE SOUTH AND  
2227 FEET FROM THE WEST LINES  
SECTION 16, BLOCK 8,  
UNIVERSITY LAND  
ANDREWS COUNTY, TEXAS

QUAD: FIVE WELLS RANCH SW  
SCALE: 1" = 1000'

PROJECT: 78158-B  
JOB NO: 78,158





State of Texas  
County of Midland

I, Kevin Elger, certify that; I am employed by Scientific Drilling International; that I did on the day(s) of 03/07/2022 through 04/06/2022 conduct or supervise the taking of a MWD survey from a depth of 1807 feet to a depth of 19773 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Scientific Drilling International; that I am authorized and qualified to make this report; that this survey was conducted at the request of Piedra Operating for the University 8-9 4H LS Well, API# 42-003-48483 in Andrews County, Texas; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Scientific Drilling International.

A handwritten signature in blue ink, appearing to read "Kevin Elger". The signature is written in a cursive, stylized font.

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Field Technician