

# **Fleur De Lis Energy, LLC**

**Reagan County, Tx (NAD 27) USE  
Sec 19-30&31, Blk 9 & Sec 6, Blk 8  
University 9-31 #9H**

**Pilot**

**Survey: Survey #2**

## **Survey Report - Geographic**

**28 February, 2018**

## Survey Report - Geographic

<b>Company:</b> Fleur De Lis Energy, LLC	<b>Local Co-ordinate Reference:</b> Well University 9-31 #9H
<b>Project:</b> Reagan County, Tx (NAD 27) USE	<b>TVD Reference:</b> KB=25 @ 2804.0usft
<b>Site:</b> Sec 19-30&31, Blk 9 & Sec 6, Blk 8	<b>MD Reference:</b> KB=25 @ 2804.0usft
<b>Well:</b> University 9-31 #9H	<b>North Reference:</b> Grid
<b>Wellbore:</b> Pilot	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Pilot	<b>Database:</b> EDM 5000.1

<b>Project</b> Reagan County, Tx (NAD 27) USE		
<b>Map System:</b> US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b> NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b> Texas Central 4203		

<b>Site</b> Sec 19-30&31, Blk 9 & Sec 6, Blk 8			
<b>Site Position:</b>	<b>Northing:</b> 569,958.55 usft	<b>Latitude:</b>	31° 13' 40.536 N
<b>From:</b> Map	<b>Easting:</b> 1,613,269.81 usft	<b>Longitude:</b>	101° 34' 14.399 W
<b>Position Uncertainty:</b> 0.0 usft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b>	-0.64 °

<b>Well</b> University 9-31 #9H			
<b>Well Position</b>	<b>+N/-S</b> 0.0 usft	<b>Northing:</b> 569,958.55 usft	<b>Latitude:</b> 31° 13' 40.536 N
	<b>+E/-W</b> 0.0 usft	<b>Easting:</b> 1,613,269.81 usft	<b>Longitude:</b> 101° 34' 14.399 W
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b> 0.0 usft	<b>Ground Level:</b> 2,779.0 usft

<b>Wellbore</b> Pilot					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/10/2017	5.90	59.58	47,687

<b>Design</b> Pilot					
<b>Audit Notes:</b>					
<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b>	0.0		
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	3.76	

<b>Survey Program</b>		<b>Date</b> 2/28/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
52.0	740.0	Pilot (Pilot)	MWD	MWD - Standard
896.0	10,215.0	Survey #2 (Pilot)	MWD	MWD - Standard

<b>Survey</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
740.0	0.92	255.48	739.9	3.5	-5.2	569,962.04	1,613,264.57	31° 13' 40.570 N	101° 34' 14.460 W	
896.0	0.90	256.30	895.9	2.9	-7.6	569,961.44	1,613,262.16	31° 13' 40.564 N	101° 34' 14.488 W	
<b>1st MWD Pilot Hole Survey</b>										
1,086.0	1.00	257.70	1,085.9	2.2	-10.7	569,960.73	1,613,259.09	31° 13' 40.557 N	101° 34' 14.523 W	
1,276.0	0.90	261.20	1,275.9	1.6	-13.8	569,960.15	1,613,256.00	31° 13' 40.551 N	101° 34' 14.559 W	
1,466.0	1.20	262.70	1,465.8	1.1	-17.3	569,959.67	1,613,252.55	31° 13' 40.546 N	101° 34' 14.598 W	
1,656.0	1.30	261.30	1,655.8	0.5	-21.4	569,959.09	1,613,248.45	31° 13' 40.539 N	101° 34' 14.645 W	
1,847.0	1.50	254.90	1,846.7	-0.4	-25.9	569,958.11	1,613,243.89	31° 13' 40.529 N	101° 34' 14.698 W	
2,038.0	0.70	238.00	2,037.7	-1.7	-29.3	569,956.84	1,613,240.49	31° 13' 40.516 N	101° 34' 14.737 W	
2,228.0	0.70	230.50	2,227.7	-3.1	-31.2	569,955.49	1,613,238.61	31° 13' 40.503 N	101° 34' 14.758 W	
2,419.0	0.90	231.90	2,418.7	-4.7	-33.3	569,953.82	1,613,236.53	31° 13' 40.486 N	101° 34' 14.782 W	

## Survey Report - Geographic

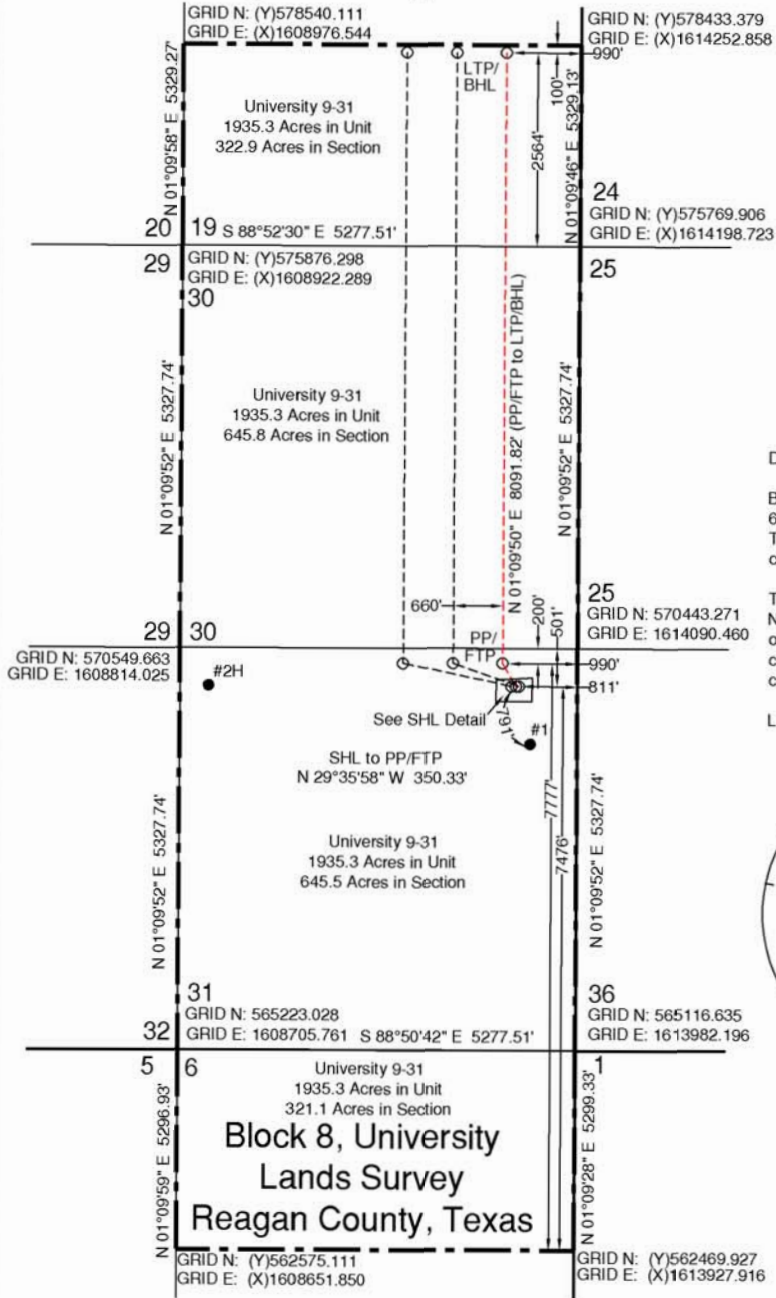
<b>Company:</b>	Fleur De Lis Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well University 9-31 #9H
<b>Project:</b>	Reagan County, Tx (NAD 27) USE	<b>TVD Reference:</b>	KB=25 @ 2804.0usft
<b>Site:</b>	Sec 19-30&31, Blk 9 & Sec 6, Blk 8	<b>MD Reference:</b>	KB=25 @ 2804.0usft
<b>Well:</b>	University 9-31 #9H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Pilot	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Pilot	<b>Database:</b>	EDM 5000.1

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
2,609.0	1.00	240.20	2,608.6	-6.5	-35.9	569,952.07	1,613,233.91	31° 13' 40.468 N	101° 34' 14.812 W	
2,799.0	0.90	235.80	2,798.6	-8.1	-38.6	569,950.41	1,613,231.24	31° 13' 40.452 N	101° 34' 14.843 W	
2,987.0	1.00	232.40	2,986.6	-10.0	-41.1	569,948.58	1,613,228.72	31° 13' 40.433 N	101° 34' 14.871 W	
3,177.0	0.80	230.70	3,176.6	-11.8	-43.4	569,946.73	1,613,226.38	31° 13' 40.415 N	101° 34' 14.898 W	
3,367.0	0.80	235.50	3,366.5	-13.4	-45.6	569,945.14	1,613,224.26	31° 13' 40.399 N	101° 34' 14.922 W	
3,557.0	1.10	233.50	3,556.5	-15.3	-48.1	569,943.30	1,613,221.70	31° 13' 40.380 N	101° 34' 14.951 W	
3,738.0	1.40	233.80	3,737.5	-17.6	-51.3	569,940.96	1,613,218.52	31° 13' 40.357 N	101° 34' 14.988 W	
3,929.0	1.10	238.10	3,928.4	-19.9	-54.7	569,938.61	1,613,215.08	31° 13' 40.333 N	101° 34' 15.027 W	
4,119.0	0.80	224.50	4,118.4	-21.8	-57.2	569,936.70	1,613,212.60	31° 13' 40.314 N	101° 34' 15.055 W	
4,319.0	0.40	232.10	4,318.4	-23.3	-58.7	569,935.28	1,613,211.07	31° 13' 40.300 N	101° 34' 15.073 W	
4,478.0	0.40	254.50	4,477.4	-23.8	-59.7	569,934.79	1,613,210.10	31° 13' 40.295 N	101° 34' 15.084 W	
4,668.0	0.50	253.90	4,667.4	-24.2	-61.1	569,934.38	1,613,208.67	31° 13' 40.290 N	101° 34' 15.100 W	
4,857.0	0.60	245.20	4,856.4	-24.8	-62.8	569,933.74	1,613,206.97	31° 13' 40.284 N	101° 34' 15.120 W	
5,048.0	0.60	267.70	5,047.4	-25.3	-64.7	569,933.28	1,613,205.07	31° 13' 40.279 N	101° 34' 15.142 W	
5,238.0	0.50	288.10	5,237.3	-25.1	-66.5	569,933.50	1,613,203.29	31° 13' 40.281 N	101° 34' 15.162 W	
5,428.0	0.40	285.90	5,427.3	-24.6	-68.0	569,933.94	1,613,201.86	31° 13' 40.285 N	101° 34' 15.179 W	
5,619.0	0.30	332.30	5,618.3	-24.0	-68.8	569,934.56	1,613,200.99	31° 13' 40.291 N	101° 34' 15.189 W	
5,808.0	0.70	19.10	5,807.3	-22.5	-68.7	569,936.09	1,613,201.13	31° 13' 40.307 N	101° 34' 15.187 W	
5,999.0	0.80	34.80	5,998.3	-20.3	-67.5	569,938.29	1,613,202.28	31° 13' 40.328 N	101° 34' 15.175 W	
6,189.0	1.00	53.00	6,188.3	-18.2	-65.5	569,940.38	1,613,204.36	31° 13' 40.349 N	101° 34' 15.151 W	
6,379.0	0.90	56.10	6,378.3	-16.3	-62.9	569,942.21	1,613,206.92	31° 13' 40.368 N	101° 34' 15.122 W	
6,856.0	0.50	31.60	6,855.2	-12.5	-58.7	569,946.07	1,613,211.12	31° 13' 40.406 N	101° 34' 15.074 W	
7,299.0	0.70	28.60	7,298.2	-8.5	-56.4	569,950.09	1,613,213.43	31° 13' 40.446 N	101° 34' 15.048 W	
7,804.0	0.70	66.10	7,803.2	-4.5	-52.1	569,954.05	1,613,217.73	31° 13' 40.486 N	101° 34' 14.999 W	
8,313.0	1.20	61.50	8,312.1	-0.7	-44.6	569,957.85	1,613,225.25	31° 13' 40.525 N	101° 34' 14.912 W	
8,811.0	1.70	32.60	8,809.9	8.0	-36.0	569,966.56	1,613,233.82	31° 13' 40.612 N	101° 34' 14.815 W	
9,075.0	1.40	36.30	9,073.8	13.9	-32.0	569,972.46	1,613,237.83	31° 13' 40.671 N	101° 34' 14.769 W	
9,390.0	1.70	34.00	9,388.7	20.9	-27.1	569,979.44	1,613,242.73	31° 13' 40.740 N	101° 34' 14.714 W	
9,454.0	2.00	33.10	9,452.7	22.6	-25.9	569,981.16	1,613,243.87	31° 13' 40.757 N	101° 34' 14.701 W	
9,644.0	2.30	21.30	9,642.6	28.9	-22.7	569,987.49	1,613,247.06	31° 13' 40.820 N	101° 34' 14.665 W	
9,708.0	2.20	17.10	9,706.5	31.3	-21.9	569,989.86	1,613,247.89	31° 13' 40.844 N	101° 34' 14.656 W	
9,835.0	1.50	1.40	9,833.5	35.3	-21.2	569,993.85	1,613,248.65	31° 13' 40.883 N	101° 34' 14.648 W	
9,898.0	1.30	6.80	9,896.4	36.8	-21.1	569,995.38	1,613,248.75	31° 13' 40.899 N	101° 34' 14.647 W	
9,962.0	1.30	6.80	9,960.4	38.3	-20.9	569,996.83	1,613,248.92	31° 13' 40.913 N	101° 34' 14.645 W	
10,025.0	1.40	2.80	10,023.4	39.8	-20.8	569,998.30	1,613,249.05	31° 13' 40.928 N	101° 34' 14.644 W	
10,089.0	1.30	358.30	10,087.4	41.3	-20.7	569,999.81	1,613,249.06	31° 13' 40.942 N	101° 34' 14.644 W	
10,215.0	1.40	346.90	10,213.3	44.2	-21.1	570,002.74	1,613,248.67	31° 13' 40.971 N	101° 34' 14.648 W	
<b>Last MWD Pilot Hole Survey 10215 MD/10213.3 44.2 N -21.1 W N: 570002.7 E: 1613248.6</b>										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
896.0	895.9	2.9	-7.6	1st MWD Pilot Hole Survey	
10,215.0	10,213.3	44.2	-21.1	Last MWD Pilot Hole Survey 10215 MD/10213.3 44.2 N -21.1 W N: 570002.7 E	

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

# Block 9, University Lands Survey Reagan County, Texas

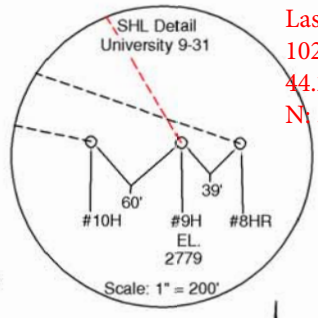


Last Take Point/  
Bottom Hole Location (LTP/BHL)  
GRID N: (Y)578353.423  
GRID E: (X)1613260.963  
NAD'83 Lat/Long  
Lat: 31°15'04.170" N  
Long: 101°34'17.006" W

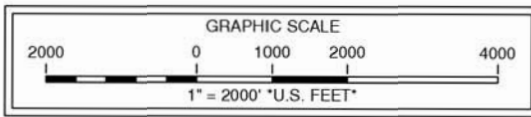
Penetration Point (PP)/ First Take Point (FTP)  
GRID N: (Y)570289.881  
GRID E: (X)1611776.865  
NAD'83 Lat/Long  
Lat: +31°13'44.200"  
Long: -101°34'33.066"

Surface Hole Location (SHL)  
GRID N: (Y)569958.548  
GRID E: (X)1613269.815  
NAD'83 Lat/Long  
Lat: +31°13'41.086"  
Long: -101°34'15.828"

Driving Directions:  
Beginning at the intersection of US Highway 67 & ST Highway 137 in Big Lake, Texas, Travel West for 6.7 Miles to a lease road at coordinates 31°12'54.99" N, 101°34'39.02" N.  
Turn Right (North) on lease road and travel North for 1/2 of a mile to the first intersection of a lease road to the right. Turn right (East) & continue for a total distance of 1 mile to coordinates 31°13'34.61" N, 101°34'16.75" W.  
Location is 659.5 feet to the left (North).



Last Pilot Hole Survey  
10215 MD/10213.3 TVD  
44.2 N -21.1 W  
N: 570002.7 E: 1613248.6



Note: Well is located 7.0 miles Northwest of the city of Big Lake, Texas.  
Note: Survey Reconstruction filed in the Office of Pennell & Marlowe Land Surveyors, Inc.  
Note: Coordinates shown herein are on The Texas Coordinate System of 1927, Central Zone.  
Note: Bearings and distances are based on The Texas Coordinate System of 1927, Central Zone.  
Note: Example: (S-99999) indicates General Land Office file number.

Revised: 06/12/17 BLS  
USGS Quadrangle Sheet: Best, Tex.



*Stephen P. Marlowe*

March 23, 2017  
170322 ID1.BLS

Railroad Commission Permit Plat  
FDL OPERATING, LLC.  
University 9-31 #9H  
501' FROM NORTH LINE  
811' FROM EAST LINE  
University 9-31 Unit  
1935.3 Acres (Called) in Unit  
Sections 19, 30 & 31, Block 9, &  
Section 6, Block 8  
University Lands Survey  
Reagan County, Texas



## Survey Certification Form

STATE OF TEXAS

REAGAN COUNTY

I **Christina Myers**, certify that; I am employed **Integrity Directional Services**; that I did on the day(s) of **09/07/2017** through **09/162017** conduct or supervise the taking of MWD surveys from a depth of **896 feet** to a depth of **10215 feet**. The data is true, correct, complete, and within the limitations of the tool set forth by Integrity Directional Services. I am authorized and qualified to make this report, and that this report was conducted at the request of **FDL Operating, LLC.** , for the **University 9-31 #9H Pilot Hole** , API # **42-383-38086/** drilled in **Reagan** County, Texas. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Integrity Directional Services.

*Christina Myers*

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Christina Myers  
Well Planner



## **Fleur De Lis Energy, LLC**

**Reagan County, Tx (NAD 27) USE  
Sec 19-30&31, Blk 9 & Sec 6, Blk 8  
University 9-31 #9H**

**Wellbore #2**

**Survey: Survey #1**

## **Survey Report - Geographic**

**18 September, 2017**



<b>Company:</b>	Fleur De Lis Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well University 9-31 #9H
<b>Project:</b>	Reagan County, Tx (NAD 27) USE	<b>TVD Reference:</b>	KB=25 @ 2804.0usft
<b>Site:</b>	Sec 19-30&31, Blk 9 & Sec 6, Blk 8	<b>MD Reference:</b>	KB=25 @ 2804.0usft
<b>Well:</b>	University 9-31 #9H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #2	<b>Database:</b>	EDM 5000.1 Multi User Db

<b>Project</b>	Reagan County, Tx (NAD 27) USE		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Texas Central 4203		

<b>Site</b>	Sec 19-30&31, Blk 9 & Sec 6, Blk 8				
<b>Site Position:</b>		<b>Northing:</b>	569,958.55 usft	<b>Latitude:</b>	31° 13' 40.536 N
<b>From:</b>	Map	<b>Easting:</b>	1,613,269.81 usft	<b>Longitude:</b>	101° 34' 14.399 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.64 °

<b>Well</b>	University 9-31 #9H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	569,958.55 usft	<b>Latitude:</b>	31° 13' 40.536 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,613,269.81 usft	<b>Longitude:</b>	101° 34' 14.399 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	0.0 usft	<b>Ground Level:</b>	2,779.0 usft

<b>Wellbore</b>	Wellbore #2				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	7/10/2017	5.90	59.58	47,687

<b>Design</b>	Wellbore #2				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	6,800.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	359.94	

<b>Survey Program</b>	<b>Date</b>	9/18/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
52.0	6,800.0	Pilot (Pilot)	MWD	MWD - Standard	
6,842.0	15,994.0	Survey #1 (Wellbore #2)	MWD	MWD - Standard	

<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>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>	
6,800.0	0.54	36.26	6,799.2	-12.9	-59.0	569,945.65	1,613,210.84	31° 13' 40.402 N	101° 34' 15.077 W	
<b>PP/FTP University 9-31 #9H</b>										
6,842.0	5.10	53.10	6,841.2	-11.6	-57.4	569,946.93	1,613,212.45	31° 13' 40.415 N	101° 34' 15.059 W	
<b>1st MWD Survey</b>										
6,933.0	9.40	58.20	6,931.4	-5.3	-47.8	569,953.28	1,613,222.00	31° 13' 40.479 N	101° 34' 14.949 W	
7,023.0	8.10	38.20	7,020.4	3.6	-37.6	569,962.13	1,613,232.17	31° 13' 40.568 N	101° 34' 14.833 W	
7,115.0	8.00	21.90	7,111.5	14.6	-31.2	569,973.17	1,613,238.57	31° 13' 40.678 N	101° 34' 14.761 W	
7,205.0	8.20	1.30	7,200.6	26.8	-28.8	569,985.40	1,613,241.05	31° 13' 40.799 N	101° 34' 14.734 W	
7,295.0	6.70	356.90	7,289.9	38.5	-28.9	569,997.06	1,613,240.91	31° 13' 40.914 N	101° 34' 14.737 W	
7,340.0	9.80	357.80	7,334.4	45.0	-29.2	570,003.51	1,613,240.62	31° 13' 40.978 N	101° 34' 14.741 W	
7,385.0	13.40	2.00	7,378.5	54.0	-29.2	570,012.55	1,613,240.66	31° 13' 41.068 N	101° 34' 14.742 W	

<b>Company:</b>	Fleur De Lis Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well University 9-31 #9H
<b>Project:</b>	Reagan County, Tx (NAD 27) USE	<b>TVD Reference:</b>	KB=25 @ 2804.0usft
<b>Site:</b>	Sec 19-30&31, Blk 9 & Sec 6, Blk 8	<b>MD Reference:</b>	KB=25 @ 2804.0usft
<b>Well:</b>	University 9-31 #9H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #2	<b>Database:</b>	EDM 5000.1 Multi User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
7,430.0	17.60	2.20	7,421.8	66.0	-28.7	570,024.56	1,613,241.10	31° 13' 41.187 N	101° 34' 14.738 W	
7,476.0	21.50	1.80	7,465.2	81.4	-28.2	570,039.94	1,613,241.63	31° 13' 41.339 N	101° 34' 14.734 W	
7,522.0	25.80	1.60	7,507.3	99.8	-27.6	570,058.39	1,613,242.18	31° 13' 41.521 N	101° 34' 14.730 W	
7,567.0	29.70	1.80	7,547.1	120.8	-27.0	570,079.32	1,613,242.80	31° 13' 41.729 N	101° 34' 14.726 W	
7,612.0	34.60	0.50	7,585.2	144.7	-26.5	570,103.26	1,613,243.26	31° 13' 41.966 N	101° 34' 14.724 W	
7,657.0	39.30	0.20	7,621.1	171.7	-26.4	570,130.30	1,613,243.43	31° 13' 42.233 N	101° 34' 14.725 W	
7,702.0	44.10	358.80	7,654.7	201.7	-26.7	570,160.22	1,613,243.15	31° 13' 42.530 N	101° 34' 14.732 W	
7,748.0	47.60	358.10	7,686.8	234.7	-27.6	570,193.21	1,613,242.25	31° 13' 42.856 N	101° 34' 14.747 W	
7,794.0	52.10	358.10	7,716.4	269.8	-28.7	570,228.34	1,613,241.08	31° 13' 43.204 N	101° 34' 14.765 W	
7,839.0	56.60	356.80	7,742.6	306.3	-30.4	570,264.86	1,613,239.45	31° 13' 43.565 N	101° 34' 14.788 W	
7,885.0	61.60	355.00	7,766.3	345.7	-33.2	570,304.22	1,613,236.61	31° 13' 43.954 N	101° 34' 14.826 W	
7,930.0	65.60	354.60	7,786.3	385.8	-36.9	570,344.35	1,613,232.95	31° 13' 44.351 N	101° 34' 14.873 W	
7,976.0	71.40	356.60	7,803.1	428.5	-40.1	570,387.00	1,613,229.69	31° 13' 44.773 N	101° 34' 14.916 W	
8,021.0	75.30	358.50	7,816.0	471.5	-42.0	570,430.07	1,613,227.85	31° 13' 45.199 N	101° 34' 14.943 W	
8,053.0	75.66	358.35	7,824.0	502.5	-42.8	570,461.03	1,613,227.00	31° 13' 45.505 N	101° 34' 14.957 W	
<b>Cross Sec Line 8053 MD/7824 TVD 502.5 N -42.8 W N: 570461.0 E: 1613227.0</b>										
8,065.0	75.80	358.30	7,827.0	514.1	-43.1	570,472.66	1,613,226.66	31° 13' 45.620 N	101° 34' 14.962 W	
8,110.0	80.50	359.70	7,836.2	558.1	-43.9	570,516.68	1,613,225.90	31° 13' 46.056 N	101° 34' 14.977 W	
8,201.0	90.00	359.60	7,843.8	648.7	-44.5	570,607.26	1,613,225.34	31° 13' 46.952 N	101° 34' 14.995 W	
8,290.0	90.20	357.30	7,843.6	737.7	-46.9	570,696.22	1,613,222.94	31° 13' 47.832 N	101° 34' 15.034 W	
8,380.0	90.20	354.90	7,843.3	827.5	-53.0	570,786.01	1,613,216.82	31° 13' 48.720 N	101° 34' 15.116 W	
8,470.0	90.00	351.80	7,843.1	916.8	-63.4	570,875.39	1,613,206.39	31° 13' 49.604 N	101° 34' 15.247 W	
8,560.0	90.00	353.90	7,843.1	1,006.1	-74.6	570,964.68	1,613,195.19	31° 13' 50.486 N	101° 34' 15.388 W	
8,649.0	90.40	351.30	7,842.8	1,094.4	-86.1	571,052.94	1,613,183.73	31° 13' 51.359 N	101° 34' 15.531 W	
8,739.0	88.50	358.10	7,843.7	1,183.9	-94.4	571,142.49	1,613,175.42	31° 13' 52.244 N	101° 34' 15.638 W	
8,829.0	87.80	359.30	7,846.6	1,273.9	-96.4	571,232.42	1,613,173.38	31° 13' 53.134 N	101° 34' 15.673 W	
8,919.0	87.00	359.60	7,850.7	1,363.8	-97.3	571,322.32	1,613,172.52	31° 13' 54.024 N	101° 34' 15.695 W	
9,010.0	90.10	359.20	7,853.0	1,454.7	-98.2	571,413.27	1,613,171.57	31° 13' 54.924 N	101° 34' 15.717 W	
9,101.0	90.30	359.90	7,852.7	1,545.7	-99.0	571,504.27	1,613,170.85	31° 13' 55.824 N	101° 34' 15.737 W	
9,192.0	91.00	1.20	7,851.6	1,636.7	-98.1	571,595.26	1,613,171.72	31° 13' 56.725 N	101° 34' 15.739 W	
9,281.0	89.30	359.90	7,851.4	1,725.7	-97.2	571,684.25	1,613,172.58	31° 13' 57.606 N	101° 34' 15.740 W	
9,372.0	90.00	0.60	7,851.9	1,816.7	-96.8	571,775.24	1,613,172.98	31° 13' 58.506 N	101° 34' 15.747 W	
9,462.0	90.30	1.30	7,851.7	1,906.7	-95.3	571,865.23	1,613,174.47	31° 13' 59.397 N	101° 34' 15.742 W	
9,551.0	89.90	1.80	7,851.6	1,995.6	-92.9	571,954.20	1,613,176.88	31° 14' 0.278 N	101° 34' 15.725 W	
9,641.0	90.50	359.60	7,851.2	2,085.6	-91.8	572,044.18	1,613,177.98	31° 14' 1.169 N	101° 34' 15.724 W	
9,731.0	90.10	359.60	7,850.8	2,175.6	-92.5	572,134.18	1,613,177.35	31° 14' 2.060 N	101° 34' 15.743 W	
9,821.0	89.90	0.90	7,850.8	2,265.6	-92.1	572,224.18	1,613,177.74	31° 14' 2.950 N	101° 34' 15.750 W	
9,911.0	90.00	0.60	7,850.8	2,355.6	-90.9	572,314.17	1,613,178.92	31° 14' 3.841 N	101° 34' 15.748 W	
10,002.0	90.00	1.00	7,850.8	2,446.6	-89.6	572,405.16	1,613,180.19	31° 14' 4.742 N	101° 34' 15.745 W	
10,093.0	90.00	1.30	7,850.8	2,537.6	-87.8	572,496.14	1,613,182.01	31° 14' 5.643 N	101° 34' 15.736 W	
10,182.0	90.30	0.60	7,850.6	2,626.6	-86.3	572,585.13	1,613,183.49	31° 14' 6.524 N	101° 34' 15.730 W	
10,273.0	90.20	1.50	7,850.2	2,717.6	-84.7	572,676.11	1,613,185.16	31° 14' 7.424 N	101° 34' 15.723 W	
10,364.0	89.70	2.70	7,850.3	2,808.5	-81.3	572,767.05	1,613,188.49	31° 14' 8.325 N	101° 34' 15.696 W	
10,455.0	90.10	359.60	7,850.5	2,899.5	-79.5	572,858.02	1,613,190.32	31° 14' 9.225 N	101° 34' 15.686 W	
10,545.0	90.20	359.50	7,850.2	2,989.5	-80.2	572,948.02	1,613,189.61	31° 14' 10.116 N	101° 34' 15.706 W	
10,635.0	90.40	359.50	7,849.7	3,079.5	-81.0	573,038.01	1,613,188.83	31° 14' 11.006 N	101° 34' 15.727 W	
10,726.0	90.40	0.20	7,849.1	3,170.5	-81.2	573,129.01	1,613,188.59	31° 14' 11.907 N	101° 34' 15.741 W	
10,817.0	90.00	1.10	7,848.8	3,261.5	-80.2	573,220.00	1,613,189.62	31° 14' 12.808 N	101° 34' 15.741 W	
10,909.0	90.30	1.70	7,848.6	3,353.4	-77.9	573,311.97	1,613,191.87	31° 14' 13.718 N	101° 34' 15.727 W	
11,000.0	90.30	1.70	7,848.1	3,444.4	-75.2	573,402.93	1,613,194.57	31° 14' 14.619 N	101° 34' 15.707 W	
11,091.0	90.50	2.00	7,847.4	3,535.3	-72.3	573,493.88	1,613,197.51	31° 14' 15.519 N	101° 34' 15.685 W	
11,182.0	90.00	0.60	7,847.0	3,626.3	-70.2	573,584.86	1,613,199.57	31° 14' 16.420 N	101° 34' 15.673 W	
11,273.0	91.30	3.20	7,846.0	3,717.2	-67.2	573,675.79	1,613,202.59	31° 14' 17.320 N	101° 34' 15.650 W	
11,362.0	89.30	0.60	7,845.5	3,806.2	-64.3	573,764.73	1,613,205.54	31° 14' 18.201 N	101° 34' 15.627 W	
11,453.0	90.90	2.80	7,845.4	3,897.1	-61.6	573,855.68	1,613,208.24	31° 14' 19.101 N	101° 34' 15.608 W	

<b>Company:</b>	Fleur De Lis Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well University 9-31 #9H
<b>Project:</b>	Reagan County, Tx (NAD 27) USE	<b>TVD Reference:</b>	KB=25 @ 2804.0usft
<b>Site:</b>	Sec 19-30&31, Blk 9 & Sec 6, Blk 8	<b>MD Reference:</b>	KB=25 @ 2804.0usft
<b>Well:</b>	University 9-31 #9H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #2	<b>Database:</b>	EDM 5000.1 Multi User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
11,544.0	90.30	1.80	7,844.4	3,988.0	-57.9	573,946.60	1,613,211.89	31° 14' 20.002 N	101° 34' 15.578 W	
11,634.0	90.00	359.90	7,844.2	4,078.0	-56.6	574,036.58	1,613,213.22	31° 14' 20.893 N	101° 34' 15.574 W	
11,725.0	90.70	1.60	7,843.6	4,169.0	-55.4	574,127.57	1,613,214.41	31° 14' 21.793 N	101° 34' 15.572 W	
11,815.0	90.40	358.90	7,842.8	4,259.0	-55.0	574,217.56	1,613,214.81	31° 14' 22.684 N	101° 34' 15.579 W	
11,907.0	90.00	359.20	7,842.5	4,351.0	-56.5	574,309.54	1,613,213.28	31° 14' 23.594 N	101° 34' 15.608 W	
11,998.0	90.10	359.80	7,842.4	4,442.0	-57.3	574,400.54	1,613,212.49	31° 14' 24.495 N	101° 34' 15.629 W	
12,090.0	90.50	358.50	7,841.9	4,534.0	-58.7	574,492.53	1,613,211.12	31° 14' 25.405 N	101° 34' 15.656 W	
12,179.0	90.00	0.70	7,841.5	4,623.0	-59.3	574,581.52	1,613,210.50	31° 14' 26.286 N	101° 34' 15.675 W	
12,271.0	90.70	3.70	7,840.9	4,714.9	-55.8	574,673.44	1,613,214.03	31° 14' 27.196 N	101° 34' 15.646 W	
12,360.0	90.50	359.10	7,840.0	4,803.8	-53.6	574,762.38	1,613,216.21	31° 14' 28.076 N	101° 34' 15.632 W	
12,450.0	89.90	357.90	7,839.7	4,893.8	-56.0	574,852.35	1,613,213.85	31° 14' 28.967 N	101° 34' 15.671 W	
12,540.0	91.70	358.90	7,838.4	4,983.7	-58.5	574,942.30	1,613,211.34	31° 14' 29.857 N	101° 34' 15.711 W	
12,631.0	92.10	359.20	7,835.4	5,074.7	-60.0	575,033.24	1,613,209.83	31° 14' 30.757 N	101° 34' 15.741 W	
12,722.0	92.00	359.10	7,832.2	5,165.6	-61.3	575,124.17	1,613,208.48	31° 14' 31.656 N	101° 34' 15.768 W	
12,811.0	89.40	1.80	7,831.1	5,254.6	-60.6	575,213.14	1,613,209.18	31° 14' 32.537 N	101° 34' 15.771 W	
12,901.0	90.50	6.10	7,831.2	5,344.4	-54.4	575,302.91	1,613,215.38	31° 14' 33.426 N	101° 34' 15.711 W	
12,991.0	89.20	2.20	7,831.4	5,434.1	-47.9	575,392.65	1,613,221.89	31° 14' 34.315 N	101° 34' 15.648 W	
13,081.0	90.90	3.70	7,831.3	5,524.0	-43.3	575,482.53	1,613,226.52	31° 14' 35.205 N	101° 34' 15.606 W	
13,171.0	89.50	0.30	7,831.0	5,613.9	-40.2	575,572.46	1,613,229.66	31° 14' 36.096 N	101° 34' 15.581 W	
13,260.0	90.30	1.30	7,831.2	5,702.9	-38.9	575,661.44	1,613,230.90	31° 14' 36.977 N	101° 34' 15.578 W	
13,350.0	89.10	358.20	7,831.6	5,792.9	-39.3	575,751.43	1,613,230.51	31° 14' 37.867 N	101° 34' 15.594 W	
13,388.0	89.44	359.14	7,832.1	5,830.9	-40.2	575,789.42	1,613,229.63	31° 14' 38.243 N	101° 34' 15.609 W	
<b>Cross Sec Line 13388 MD/7832.1 TVD 5830.9 N -40.2 W N: 575789.4 E: 1613229.6</b>										
13,439.0	89.90	0.40	7,832.4	5,881.9	-40.4	575,840.41	1,613,229.42	31° 14' 38.748 N	101° 34' 15.618 W	
13,529.0	88.90	0.50	7,833.4	5,971.9	-39.7	575,930.41	1,613,230.13	31° 14' 39.639 N	101° 34' 15.622 W	
13,618.0	88.50	1.10	7,835.4	6,060.8	-38.4	576,019.37	1,613,231.37	31° 14' 40.519 N	101° 34' 15.619 W	
13,707.0	91.30	1.10	7,835.5	6,149.8	-36.7	576,108.35	1,613,233.08	31° 14' 41.400 N	101° 34' 15.610 W	
13,797.0	90.30	0.70	7,834.3	6,239.8	-35.3	576,198.33	1,613,234.49	31° 14' 42.291 N	101° 34' 15.606 W	
13,886.0	89.20	359.30	7,834.7	6,328.8	-35.3	576,287.32	1,613,234.49	31° 14' 43.172 N	101° 34' 15.617 W	
13,976.0	92.50	359.20	7,833.3	6,418.7	-36.5	576,377.29	1,613,233.32	31° 14' 44.062 N	101° 34' 15.642 W	
14,065.0	92.20	0.40	7,829.7	6,507.7	-36.8	576,466.21	1,613,233.01	31° 14' 44.942 N	101° 34' 15.657 W	
14,155.0	91.80	1.20	7,826.5	6,597.6	-35.5	576,556.15	1,613,234.26	31° 14' 45.832 N	101° 34' 15.654 W	
14,246.0	91.40	1.10	7,824.0	6,688.5	-33.7	576,647.10	1,613,236.09	31° 14' 46.733 N	101° 34' 15.645 W	
14,337.0	89.40	359.00	7,823.4	6,779.5	-33.6	576,738.08	1,613,236.17	31° 14' 47.633 N	101° 34' 15.656 W	
14,425.0	88.70	0.20	7,824.8	6,867.5	-34.3	576,826.07	1,613,235.55	31° 14' 48.504 N	101° 34' 15.674 W	
14,515.0	91.50	2.80	7,824.7	6,957.5	-31.9	576,916.02	1,613,237.91	31° 14' 49.394 N	101° 34' 15.658 W	
14,605.0	90.00	1.20	7,823.5	7,047.4	-28.8	577,005.95	1,613,241.05	31° 14' 50.285 N	101° 34' 15.634 W	
14,694.0	90.00	1.50	7,823.5	7,136.4	-26.7	577,094.93	1,613,243.15	31° 14' 51.166 N	101° 34' 15.621 W	
14,784.0	90.50	1.90	7,823.1	7,226.3	-24.0	577,184.89	1,613,245.82	31° 14' 52.056 N	101° 34' 15.602 W	
14,875.0	90.70	0.30	7,822.1	7,317.3	-22.2	577,275.86	1,613,247.56	31° 14' 52.957 N	101° 34' 15.593 W	
14,966.0	90.60	358.50	7,821.1	7,408.3	-23.2	577,366.85	1,613,246.61	31° 14' 53.857 N	101° 34' 15.616 W	
15,056.0	90.70	356.80	7,820.1	7,498.2	-26.9	577,456.76	1,613,242.92	31° 14' 54.747 N	101° 34' 15.670 W	
15,147.0	88.50	356.60	7,820.7	7,589.1	-32.1	577,547.60	1,613,237.68	31° 14' 55.646 N	101° 34' 15.742 W	
15,239.0	87.70	1.60	7,823.8	7,681.0	-33.6	577,639.51	1,613,236.24	31° 14' 56.555 N	101° 34' 15.770 W	
15,328.0	88.40	2.10	7,826.8	7,769.9	-30.7	577,728.41	1,613,239.11	31° 14' 57.435 N	101° 34' 15.749 W	
15,418.0	87.70	2.40	7,829.9	7,859.7	-27.2	577,818.29	1,613,242.64	31° 14' 58.325 N	101° 34' 15.720 W	
15,507.0	88.90	1.80	7,832.5	7,948.6	-23.9	577,907.19	1,613,245.90	31° 14' 59.205 N	101° 34' 15.693 W	
15,596.0	88.50	3.80	7,834.5	8,037.5	-19.6	577,996.06	1,613,250.25	31° 15' 0.085 N	101° 34' 15.655 W	
15,686.0	90.70	2.80	7,835.1	8,127.3	-14.4	578,085.90	1,613,255.43	31° 15' 0.975 N	101° 34' 15.607 W	
15,775.0	90.90	3.50	7,833.9	8,216.2	-9.5	578,174.75	1,613,260.32	31° 15' 1.855 N	101° 34' 15.562 W	
15,866.0	90.70	3.80	7,832.6	8,307.0	-3.7	578,265.56	1,613,266.11	31° 15' 2.755 N	101° 34' 15.506 W	
15,944.0	90.40	4.20	7,831.9	8,384.8	1.7	578,343.37	1,613,271.55	31° 15' 3.525 N	101° 34' 15.454 W	
<b>Last MWD Survey 15056 MD 7820.1 TVD 8384.8 N 1.7 E N: 578343.3 E: 1613271.55</b>										
15,953.2	90.40	4.20	7,831.8	8,394.0	2.4	578,352.51	1,613,272.22	31° 15' 3.616 N	101° 34' 15.447 W	
<b>LTP/PBHL University 9-31 #9H Plan #3</b>										

<b>Company:</b>	Fleur De Lis Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well University 9-31 #9H
<b>Project:</b>	Reagan County, Tx (NAD 27) USE	<b>TVD Reference:</b>	KB=25 @ 2804.0usft
<b>Site:</b>	Sec 19-30&31, Blk 9 & Sec 6, Blk 8	<b>MD Reference:</b>	KB=25 @ 2804.0usft
<b>Well:</b>	University 9-31 #9H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #2	<b>Database:</b>	EDM 5000.1 Multi User Db

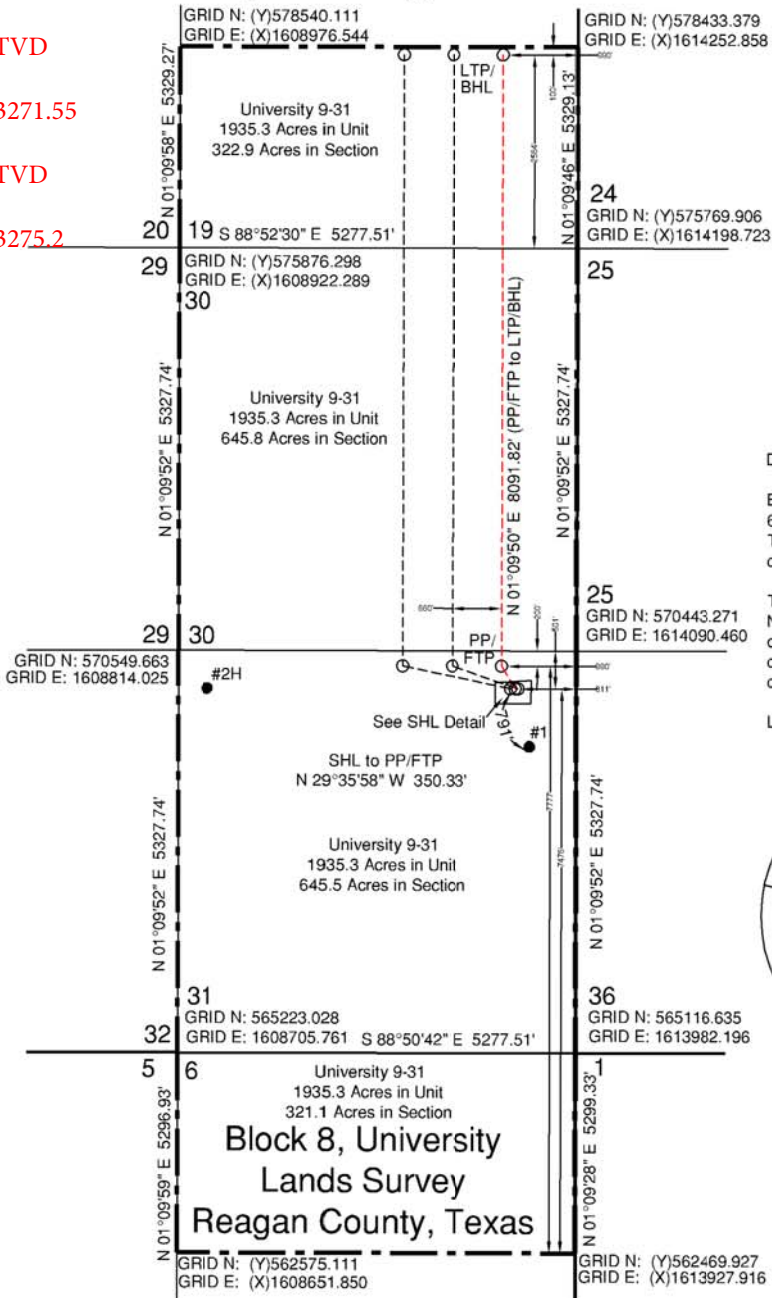
Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
15,953.2	90.40	4.20	7,831.8	8,394.0	2.4	578,352.56	1,613,272.22	31° 15' 3.616 N	101° 34' 15.447 W	
<b>LTP/PBHL University 9-31 #9H Plan #5</b>										
15,953.3	90.40	4.20	7,831.8	8,394.1	2.4	578,352.65	1,613,272.23	31° 15' 3.617 N	101° 34' 15.447 W	
<b>LTP/PBHL University 9-31 #9H Plan #6</b>										
15,954.0	90.40	4.20	7,831.8	8,394.8	2.5	578,353.34	1,613,272.28	31° 15' 3.624 N	101° 34' 15.447 W	
<b>Cross 100' 15954 MD/7831.8 TVD 8394.8 N 2.5 E N: 578353.3 E: 1613272.29</b>										
15,994.0	90.40	4.20	7,831.5	8,434.7	5.4	578,393.23	1,613,275.21	31° 15' 4.019 N	101° 34' 15.418 W	
<b>PTB 15994 MD/7831.5 TVD 8434.7 N 5.4 E N: 578393.2 E: 1613275.2</b>										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
6,842.0	6,841.2	-11.6	-57.4	1st MWD Survey	
8,053.0	7,824.0	502.5	-42.8	Cross Sec Line 8053 MD/7824 TVD 502.5 N -42.8 W N: 570461.0 E: 1613227.0	
13,388.0	7,832.1	5,830.9	-40.2	Cross Sec Line 13388 MD/7832.1 TVD 5830.9 N -40.2 W N: 575789.4 E: 1613272.29	
15,944.0	7,831.9	8,384.8	1.7	Last MWD Survey 15056 MD 7820.1 TVD 8384.8 N 1.7 E N: 578343.3 E: 1613272.29	
15,954.0	7,831.8	8,394.8	2.5	Cross 100' 15954 MD/7831.8 TVD 8394.8 N 2.5 E N: 578353.3 E: 1613272.29	
15,994.0	7,831.5	8,434.7	5.4	PTB 15994 MD/7831.5 TVD 8434.7 N 5.4 E N: 578393.2 E: 1613275.2	

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

# Block 9, University Lands Survey Reagan County, Texas

Last MWD Survey  
15944 MD/7831.9 TVD  
8384.8 N 1.7 E  
N: 578343.3 E: 1603271.55  
PTB  
15994 MD/7831.5 TVD  
8434.7 N 5.4 E  
N: 578393.2 E: 1603275.2



Last Take Point/  
Bottom Hole Location (LTP/BHL)  
GRID N: (Y)578353.423  
GRID E: (X)1613260.963  
NAD'83 Lat/Long  
Lat: 31°15'04.170" N  
Long: 101°34'17.006" W

Penetration Point (PP)/ First Take  
Point (FTP)  
GGRID N: (Y)570263.270  
GRID E: (X)1613096.597  
NAD'83 Lat/Long  
Lat: +31°13'44.200"  
Long: -101°34'33.066"

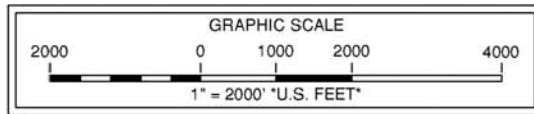
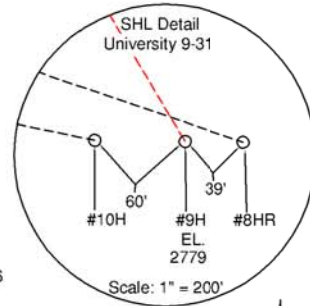
Surface Hole Location (SHL)  
GRID N: (Y)569958.548  
GRID E: (X)1613269.815  
NAD'83 Lat/Long  
Lat: +31°13'41.086"  
Long: -101°34'15.828"

### Driving Directions:

Beginning at the intersection of US Highway  
67 & ST Highway 137 in Big Lake, Texas,  
Travel West for 6.7 Miles to a lease road at  
coordinates 31°12'54.99" N, 101°34'39.02" N.

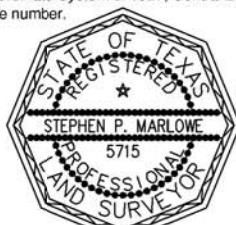
Turn Right (North) on lease road and travel  
North for 1/2 of a mile to the first intersection  
of a lease road to the right. Turn right (East) &  
continue for a total distance of 1 mile to  
coordinates 31°13'34.61" N, 101°34'16.75" W.

Location is 659.5 feet to the left (North).



Note: Well is located 7.0 miles Northwest of the city of Big Lake, Texas.  
Note: Survey Reconstruction filed in the Office of Pennell & Marlowe Land Surveyors, Inc.  
Note: Coordinates shown herein are on The Texas Coordinate System of 1927, Central Zone.  
Note: Bearings and distances are based on The Texas Coordinate System of 1927, Central Zone.  
Note: Example: (S-99999) indicates General Land Office file number.

Revised: 07/11/17 KRM  
USGS Quadrangle Sheet. Best, Tex.



*Stephen P. Marlowe*  
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 5715

March 23, 2017  
170323JR1-BLS

Railroad Commission Permit Plat  
FDL OPERATING, LLC.  
University 9-31 #9H  
501' FROM NORTH LINE  
811' FROM EAST LINE  
University 9-31 Unit  
1935.3 Acres (Called) in Unit  
Sections 19, 30 & 31, Block 9, &  
Section 6, Block 8  
University Lands Survey  
Reagan County, Texas  
Scale: 1" = 2000'



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## Survey Certification Form

### STATE OF TEXAS

#### REAGAN COUNTY

I **Christina Myers**, certify that; I am employed **Integrity Directional Services**; that I did on the day(s) of **09/07/2017** through **09/162017** conduct or supervise the taking of MWD surveys from a depth of **6842 feet** to a depth of **15944 feet** & Project to TD **15994 feet**. The data is true, correct, complete, and within the limitations of the tool set forth by Integrity Directional Services. I am authorized and qualified to make this report, and that this report was conducted at the request of **FDL Operating, LLC.**, for the **University 9-31 #9H**, API # **42-383-38086/** drilled in **Reagan** County, Texas. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Integrity Directional Services.

*Christina Myers*

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Christina Myers  
Well Planner