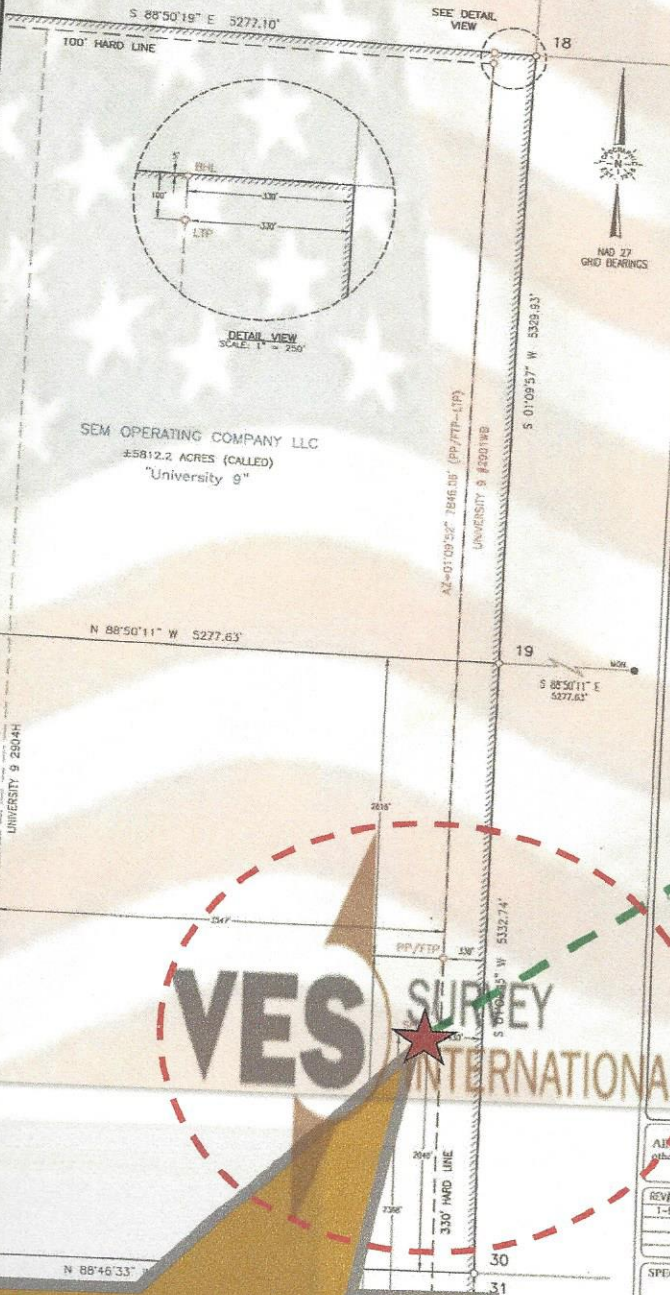


VES LEGEND	
	Surface Location Highlight
	Bottom Hole Location
	° of SL Direction Line
	North Indicator
	VES Bottom Hole Text Box



Surface Hole Location:
GROUND ELEVATION:
SHL Ground Elevation: 2683'
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608426.01 Y = 572586.52
LAT.: N 31°14'06.13" LONG.: W 101°35'10.53"
LAT.: N 31.2350358 LONG.: W 101.5862580
NAD 83 TX-C ZONE:
X = 1904894.02 Y = 10415175.31
LAT.: N 31°14'06.68" LONG.: W 101°35'11.96"
LAT.: N 31.2351880 LONG.: W 101.5866552
SURVEY LINE PERPENDICULARS:
2046' FSL & 430' FEL (SEC. 29)
UNIT LINE PERPENDICULARS:
7368' FSL & 430' FEL
Penetration Point/First Take Point:
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608539.57 Y = 573266.20
LAT.: N 31°14'12.75" LONG.: W 101°35'09.31"
LAT.: N 31.2368750 LONG.: W 101.5859187
NAD 83 TX-C ZONE:
X = 1905007.59 Y = 10415842.99
LAT.: N 31°14'13.30" LONG.: W 101°35'10.74"
LAT.: N 31.2370271 LONG.: W 101.5863158
SURVEY LINE PERPENDICULARS:
2616' FSL & 330' FEL (SEC. 29)
UNIT LINE PERPENDICULARS:
8038' FSL & 330' FEL
Last Take Point:
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608699.06 Y = 581110.64
LAT.: N 31°15'30.41" LONG.: W 101°35'08.49"
LAT.: N 31.2584466 LONG.: W 101.5856909
NAD 83 TX-C ZONE:
X = 1905167.10 Y = 10423667.43
LAT.: N 31°15'30.95" LONG.: W 101°35'09.92"
LAT.: N 31.2585960 LONG.: W 101.5860881
SURVEY LINE PERPENDICULARS:
100' FSL & 330' FEL (SEC. 20)
UNIT LINE PERPENDICULARS:
100' FSL & 330' FEL
Bottom Hole Location:
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608700.99 Y = 581205.62
LAT.: N 31°15'31.35" LONG.: W 101°35'08.48"
LAT.: N 31.2587078 LONG.: W 101.5856882
NAD 83 TX-C ZONE:
X = 1905169.03 Y = 10423782.41
LAT.: N 31°15'31.89" LONG.: W 101°35'09.91"
LAT.: N 31.2588592 LONG.: W 101.5860854
SURVEY LINE PERPENDICULARS:
5' FSL & 330' FEL (SEC. 20)
UNIT LINE PERPENDICULARS:
5' FSL & 330' FEL

VES Bottom Hole Location is 1.49' @ 54.40° of Surface Location

CERTIFICATION:

This well location shown on this permit plat was surveyed on the ground under my direct supervision. This plat is for Texas Railroad Commission permit purposes only and should not be considered a boundary survey.

William J. Keating
Texas Reg. No. 5041



SEM OPERATING COMPANY LLC

LEASE NAME & WELL NO.:
UNIVERSITY 9 #2901WB
TOPOGRAPHY & VEGETATION:
NATURAL MESQUITE PASTURE
NEAREST TOWN IN COUNTY:
±8.1 MILES NORTHWEST OF BIG LAKE, TEXAS

LOCATION DESCRIPTION:
SHL/PP/FTP: SECTION 29, BLOCK 9, UNIVERSITY LANDS SURVEY
LTP/BHL: SECTION 20, BLOCK 9, UNIVERSITY LANDS SURVEY
REAGAN COUNTY, TEXAS

Scale: 1" = 1000' Surveyed: 11-10-2016 ORIGINAL DOC. SIZE: 11"x17"
COGO: 519-89429 Drawn By: MP; 11-29-2016

383-39868

VES Bottom Hole Location is

1.49' @ 54.40°

of Surface Location

MD / FT 700.00
North / FT South / FT
0.87



700.00 TVD / FT
East / FT West / FT
1.22

VES SURVEY INTERNATIONAL

826216



Company: SEM OPERATING
Lease/Well: UNIVERSITY 9/2901WB

Rig Name: INTEGRITY 3
State/County: TEXAS/REAGAN
VS-Azi: 0.00 Degrees
Latitude: 31.23849, Longitude: -101.58688
Grid North = True North +0.65 degs (NAD 27)
Grid Correction Applied = +0.65 degs



Depth Reference : RKB GL

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: eline-de_01.ut
Minimum Curvature Method
Report Date/Time: 5/26/2017 / 09:09

VES Survey International
West Texas
432-563-5444
Surveyor: Dustin Byers
University 9 2901WB / API 42-383-39828

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
50.00	0.21	96.66	50.00	-0.01	0.09	-0.01	0.09	96.66	0.43
100.00	0.09	30.77	100.00	0.01	0.21	0.01	0.21	86.39	0.39
150.00	0.10	50.58	150.00	0.08	0.26	0.08	0.27	73.73	0.07
200.00	0.26	65.86	200.00	0.15	0.40	0.15	0.43	69.27	0.33
250.00	0.12	42.01	250.00	0.24	0.54	0.24	0.59	66.27	0.32
300.00	0.17	54.35	300.00	0.32	0.64	0.32	0.71	63.27	0.12
350.00	0.14	42.24	350.00	0.41	0.74	0.41	0.85	60.95	0.09
400.00	0.14	54.35	400.00	0.49	0.83	0.49	0.97	59.34	0.06
450.00	0.07	354.50	450.00	0.56	0.88	0.56	1.04	57.48	0.24
500.00	0.12	66.17	500.00	0.61	0.93	0.61	1.11	56.44	0.24
550.00	0.10	70.61	550.00	0.65	1.02	0.65	1.21	57.38	0.05
600.00	0.10	21.49	600.00	0.71	1.07	0.71	1.28	56.67	0.17
650.00	0.07	328.53	650.00	0.77	1.07	0.77	1.32	54.21	0.16
700.00	0.40	66.28	700.00	0.87	1.22	0.87	1.49	54.40	0.83



I Dustin Byers certify that I am employed by VES Survey International. That I did on the day(s) of 05/22/17 through 05/22/17 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 700.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of SEM Operating for the University 9 Well # 2901WB API # 42-383-39868 in Reagan County / Parish Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by VES Survey International.

A handwritten signature in blue ink, appearing to read "Dustin Byers", is written over a horizontal line.

Dustin Byers
Service Technician
VES Survey International



· Directional Drilling · Horizontal Drilling · MWD/LWD · Mud Motors

August 24, 2017

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

Attention: Pamela Johns

Re: SEM Operating Company, LLC
University 9 #2901WB
Reagan County, Texas
API No. 42-383-39868

Enclosed, please find the original and one copy of the survey performed on the referenced well by Aim Directional Services, LLC (P-5 No. 009134). Other information required by your office is as follows:

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Date Performed</u>	<u>Type of Survey</u>
Allison Reinert VP Engineering	Original hole	785' – 16438'	06/18/17 – 07/03/17	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and the lease line (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.

Allison Reinert
VP Engineering

Enclosures
cc:



· Directional Drilling · Horizontal Drilling · MWD/LWD · Mud Motors

August 24, 2017

State of Texas
County of Reagan

I, Allison Reinert, certify that; I am employed by Aim Directional Services, LLC; that I did on the day(s) of June 18, 2017 through July 3, 2017 conduct or supervise the taking of a directional MWD survey from a depth of 785 feet to a depth of 16438 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Aim Directional Services, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of SEM Operating Company, LLC for University 9 #2901WB API No. 42-383-39868 in Reagan County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Aim Directional Services, LLC.

Allison Reinert
VP Engineering



Aim Directional Services

Survey Report

Company:	SEM Operating Company, LLC	Local Co-ordinate Reference:	Site University 9 #2901WB
Project:	Reagan County, Texas	TVD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Site:	University 9 #2901WB	MD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Well:	#2901WB	North Reference:	Grid
Wellbore:	As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Single User Db

Project	Reagan County, Texas		
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 9 #2901WB		
Site Position:		Northing:	572,598.52 usft
From:	Map	Easting:	1,608,426.01 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	31° 14' 6.129 N
		Longitude:	101° 35' 10.529 W
		Grid Convergence:	-0.65 °

Well	#2901WB - Slot 2901WB		
Well Position	+N/-S	0.00 usft	Northing: 572,598.52 usft
	+E/-W	0.00 usft	Easting: 1,608,426.01 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	31° 14' 6.129 N
		Longitude:	101° 35' 10.529 W
		Ground Level:	2,683.00 usft

Wellbore	As Drilled				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/19/2017	5.88	59.55	47,671.90000000

Design	Surveys				
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	1.16	

Survey Program	Date	7/4/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.00	700.00	VES Gyro Svys (As Drilled)	VES_C670Ga_GYROFLEX_	VESSI Gyroflex Gyro	
785.00	16,438.00	Aim MWD Svys (As Drilled)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

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	
50.00	0.21	96.66	50.00	-0.01	0.09	-0.01	0.42	0.42	0.00	
100.00	0.09	30.77	100.00	0.01	0.20	0.02	0.38	-0.24	-131.78	
150.00	0.10	50.58	150.00	0.07	0.26	0.08	0.07	0.02	39.62	
200.00	0.26	65.86	200.00	0.15	0.39	0.16	0.33	0.32	30.56	
250.00	0.12	42.01	250.00	0.23	0.53	0.24	0.32	-0.28	-47.70	
300.00	0.17	54.35	300.00	0.32	0.63	0.33	0.12	0.10	24.68	
350.00	0.14	42.24	350.00	0.40	0.73	0.42	0.09	-0.06	-24.22	
400.00	0.14	54.35	400.00	0.48	0.82	0.50	0.06	0.00	24.22	
450.00	0.07	354.50	450.00	0.55	0.87	0.57	0.24	-0.14	-119.70	



Aim Directional Services

Survey Report

Company:	SEM Operating Company, LLC	Local Co-ordinate Reference:	Site University 9 #2901WB
Project:	Reagan County, Texas	TVD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Site:	University 9 #2901WB	MD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Well:	#2901WB	North Reference:	Grid
Wellbore:	As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Single User Db

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)
500.00	0.12	66.17	500.00	0.60	0.91	0.62	0.24	0.10	143.34
550.00	0.10	70.61	550.00	0.64	1.00	0.66	0.04	-0.04	8.88
600.00	0.10	21.49	600.00	0.69	1.06	0.71	0.17	0.00	-98.24
650.00	0.07	328.53	650.00	0.76	1.06	0.78	0.16	-0.06	-105.92
700.00	0.40	66.28	700.00	0.86	1.20	0.88	0.83	0.66	195.50
Tie Into VES Gyro Svy									
785.00	0.22	39.58	785.00	1.10	1.58	1.13	0.27	-0.21	-31.41
First Aim MWD Svy									
973.00	0.01	86.69	973.00	1.38	1.82	1.42	0.11	-0.11	25.06
1,160.00	0.09	16.02	1,160.00	1.52	1.88	1.56	0.05	0.04	-37.79
1,348.00	0.04	205.25	1,348.00	1.60	1.89	1.64	0.07	-0.03	-90.84
1,538.00	0.31	216.15	1,538.00	1.13	1.56	1.16	0.14	0.14	5.74
1,727.00	0.35	205.34	1,726.99	0.20	1.01	0.22	0.04	0.02	-5.72
1,916.00	0.35	168.42	1,915.99	-0.89	0.88	-0.87	0.12	0.00	-19.53
2,106.00	1.54	105.23	2,105.96	-2.13	3.46	-2.06	0.75	0.63	-33.26
2,295.00	2.99	84.31	2,294.81	-2.31	10.82	-2.09	0.87	0.77	-11.07
2,483.00	4.22	70.07	2,482.44	0.53	22.20	0.98	0.80	0.65	-7.57
2,672.00	4.31	60.93	2,670.92	6.36	34.94	7.06	0.36	0.05	-4.84
2,861.00	4.62	54.34	2,859.35	14.24	47.34	15.20	0.32	0.16	-3.49
3,049.00	4.53	52.94	3,046.75	23.13	59.41	24.33	0.08	-0.05	-0.74
3,238.00	4.13	50.74	3,235.21	31.94	70.64	33.36	0.23	-0.21	-1.16
3,427.00	4.44	50.39	3,423.68	40.91	81.54	42.55	0.16	0.16	-0.19
3,615.00	4.92	50.91	3,611.05	50.63	93.41	52.51	0.26	0.26	0.28
3,804.00	4.44	48.37	3,799.42	60.60	105.17	62.72	0.28	-0.25	-1.34
3,994.00	1.76	40.37	3,989.13	67.71	112.55	69.98	1.43	-1.41	-4.21
4,183.00	0.97	42.65	4,178.07	71.10	115.52	73.42	0.42	-0.42	1.21
4,371.00	1.01	53.55	4,366.04	73.25	117.93	75.63	0.10	0.02	5.80
4,560.00	1.10	65.33	4,555.01	75.00	120.92	77.43	0.12	0.05	6.23
4,749.00	1.19	62.96	4,743.97	76.65	124.31	79.15	0.05	0.05	-1.25
4,938.00	1.27	67.44	4,932.93	78.35	128.00	80.92	0.07	0.04	2.37
5,126.00	1.10	235.75	5,120.92	78.13	128.43	80.71	1.25	-0.09	89.53
5,315.00	1.05	212.11	5,309.88	75.64	126.01	78.18	0.23	-0.03	-12.51
5,504.00	0.35	179.76	5,498.87	73.60	125.09	76.12	0.41	-0.37	-17.12
5,693.00	0.35	15.41	5,687.87	73.58	125.25	76.10	0.37	0.00	-86.96
5,882.00	0.35	53.99	5,876.87	74.47	125.87	77.01	0.12	0.00	20.41
6,071.00	0.35	58.30	6,065.86	75.12	126.83	77.67	0.01	0.00	2.28
6,261.00	0.40	73.15	6,255.86	75.61	127.95	78.19	0.06	0.03	7.82
6,450.00	0.53	62.52	6,444.85	76.21	129.36	78.81	0.08	0.07	-5.62
6,639.00	0.62	81.85	6,633.84	76.76	131.15	79.40	0.11	0.05	10.23
6,828.00	0.75	95.48	6,822.83	76.78	133.39	79.47	0.11	0.07	7.21
7,017.00	0.79	107.25	7,011.81	76.28	135.87	79.01	0.09	0.02	6.23
7,206.00	0.66	116.39	7,200.80	75.41	138.09	78.19	0.09	-0.07	4.84
7,395.00	0.66	113.84	7,389.78	74.48	140.06	77.30	0.02	0.00	-1.35



Aim Directional Services

Survey Report

Company:	SEM Operating Company, LLC	Local Co-ordinate Reference:	Site University 9 #2901WB
Project:	Reagan County, Texas	TVD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Site:	University 9 #2901WB	MD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Well:	#2901WB	North Reference:	Grid
Wellbore:	As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Single User Db

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)
7,471.00	0.75	111.38	7,465.78	74.13	140.92	76.96	0.12	0.12	-3.24
7,596.00	1.01	30.08	7,590.77	74.78	142.24	77.65	0.93	0.21	-65.04
7,627.00	5.76	5.74	7,621.71	76.57	142.53	79.44	15.67	15.32	-78.52
7,659.00	11.56	3.37	7,653.33	81.37	142.88	84.25	18.16	18.13	-7.41
7,687.00	17.05	359.50	7,680.45	88.28	143.01	91.16	19.89	19.61	-13.82
7,722.00	22.24	355.98	7,713.40	100.03	142.50	102.89	15.20	14.83	-10.06
7,753.00	25.49	353.70	7,741.75	112.51	141.35	115.35	10.90	10.48	-7.35
7,784.00	28.26	352.03	7,769.40	126.41	139.60	129.21	9.26	8.94	-5.39
7,816.00	31.69	352.12	7,797.11	142.25	137.40	145.00	10.72	10.72	0.28
7,847.00	33.36	353.79	7,823.25	158.79	135.36	161.49	6.12	5.39	5.39
7,879.00	34.95	355.46	7,849.73	176.67	133.68	179.34	5.77	4.97	5.22
7,910.00	35.87	357.74	7,875.00	194.60	132.62	197.25	5.19	2.97	7.35
7,941.00	37.05	359.50	7,899.93	213.02	132.18	215.65	5.09	3.81	5.68
7,973.00	38.46	0.03	7,925.23	232.61	132.10	235.23	4.52	4.41	1.66
8,004.00	41.19	359.06	7,949.04	252.46	131.94	255.08	9.03	8.81	-3.13
8,036.00	43.78	358.00	7,972.63	274.06	131.38	276.66	8.40	8.09	-3.31
8,067.00	46.07	357.39	7,994.58	295.93	130.50	298.51	7.52	7.39	-1.97
8,099.00	48.57	357.04	8,016.27	319.43	129.36	321.98	7.85	7.81	-1.09
8,130.00	50.99	356.77	8,036.29	343.06	128.08	345.59	7.83	7.81	-0.87
8,162.00	53.19	356.60	8,055.95	368.27	126.62	370.75	6.89	6.88	-0.53
8,193.00	55.65	356.77	8,073.98	393.43	125.16	395.89	7.95	7.94	0.55
8,225.00	57.85	356.51	8,091.53	420.15	123.59	422.56	6.91	6.88	-0.81
8,256.00	59.91	356.25	8,107.55	446.63	121.91	449.01	6.68	6.65	-0.84
8,288.00	62.15	356.16	8,123.05	474.56	120.06	476.90	7.00	7.00	-0.28
8,319.00	64.44	355.98	8,136.98	502.19	118.16	504.48	7.41	7.39	-0.58
8,351.00	66.59	355.90	8,150.24	531.24	116.10	533.48	6.72	6.72	-0.25
8,382.00	70.02	356.25	8,161.70	559.97	114.13	562.17	11.11	11.06	1.13
8,414.00	72.35	356.77	8,172.02	590.20	112.29	592.35	7.44	7.28	1.63
8,445.00	74.86	357.30	8,180.77	619.90	110.75	622.01	8.26	8.10	1.71
8,464.00	76.57	357.83	8,185.46	638.29	109.97	640.39	9.40	9.00	2.79
8,494.09	78.49	358.58	8,191.95	667.66	109.05	669.73	6.83	6.38	2.51
FTP @ 8494.09'MD									
8,506.00	79.25	358.88	8,194.25	679.34	108.79	681.41	6.83	6.38	2.48
8,538.00	81.76	359.15	8,199.53	710.90	108.25	712.94	7.89	7.84	0.84
8,569.00	83.52	358.97	8,203.50	741.64	107.74	743.66	5.71	5.68	-0.58
8,601.00	84.70	358.71	8,206.78	773.46	107.10	775.47	3.78	3.69	-0.81
8,632.00	86.29	358.88	8,209.22	804.36	106.45	806.35	5.16	5.13	0.55
8,727.00	90.73	1.17	8,211.69	899.29	106.49	901.27	5.26	4.67	2.41
8,821.00	91.03	359.94	8,210.25	993.28	107.40	995.25	1.35	0.32	-1.31
8,915.00	88.44	358.18	8,210.68	1,087.25	105.86	1,089.17	3.33	-2.76	-1.87
9,010.00	88.66	358.80	8,213.08	1,182.19	103.36	1,184.04	0.69	0.23	0.65
9,104.00	91.03	0.99	8,213.34	1,276.17	103.19	1,278.00	3.43	2.52	2.33
9,198.00	89.01	358.71	8,213.31	1,370.16	102.94	1,371.97	3.24	-2.15	-2.43
9,293.00	89.45	359.06	8,214.58	1,465.14	101.09	1,466.88	0.59	0.46	0.37



Aim Directional Services

Survey Report

Company:	SEM Operating Company, LLC	Local Co-ordinate Reference:	Site University 9 #2901WB
Project:	Reagan County, Texas	TVD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Site:	University 9 #2901WB	MD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Well:	#2901WB	North Reference:	Grid
Wellbore:	As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Single User Db

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)
9,387.00	90.68	359.24	8,214.48	1,559.12	99.70	1,560.82	1.32	1.31	0.19
9,481.00	89.36	359.06	8,214.44	1,653.11	98.30	1,654.76	1.42	-1.40	-0.19
9,575.00	90.42	0.11	8,214.62	1,747.11	97.62	1,748.72	1.59	1.13	1.12
9,670.00	91.38	1.61	8,213.13	1,842.08	99.05	1,843.71	1.87	1.01	1.58
9,764.00	91.52	0.99	8,210.75	1,936.02	101.18	1,937.68	0.68	0.15	-0.66
9,858.00	91.47	0.90	8,208.30	2,029.98	102.73	2,031.64	0.11	-0.05	-0.10
9,953.00	88.62	359.15	8,208.23	2,124.97	102.77	2,126.61	3.52	-3.00	-1.84
10,047.00	90.64	3.19	8,208.83	2,218.92	104.69	2,220.59	4.80	2.15	4.30
10,141.00	90.86	3.45	8,207.60	2,312.75	110.13	2,314.51	0.36	0.23	0.28
10,236.00	90.07	1.78	8,206.83	2,407.65	114.47	2,409.47	1.94	-0.83	-1.76
10,331.00	90.02	0.55	8,206.76	2,502.63	116.40	2,504.47	1.30	-0.05	-1.29
10,425.00	90.37	359.15	8,206.44	2,596.62	116.15	2,598.44	1.54	0.37	-1.49
10,519.00	89.89	358.53	8,206.22	2,690.60	114.25	2,692.37	0.83	-0.51	-0.66
10,614.00	90.24	0.47	8,206.12	2,785.60	113.42	2,787.32	2.08	0.37	2.04
10,708.00	90.02	1.78	8,205.90	2,879.57	115.27	2,881.32	1.41	-0.23	1.39
10,802.00	90.90	4.16	8,205.15	2,973.44	120.14	2,975.26	2.70	0.94	2.53
10,896.00	90.11	3.63	8,204.32	3,067.22	126.52	3,069.15	1.01	-0.84	-0.56
10,991.00	91.08	6.00	8,203.33	3,161.87	134.50	3,163.94	2.70	1.02	2.49
11,085.00	90.24	3.89	8,202.25	3,255.51	142.60	3,257.73	2.42	-0.89	-2.24
11,180.00	90.29	2.31	8,201.81	3,350.36	147.73	3,352.67	1.66	0.05	-1.66
11,274.00	90.42	0.90	8,201.23	3,444.32	150.37	3,446.66	1.51	0.14	-1.50
11,368.00	88.88	359.32	8,201.80	3,538.31	150.55	3,540.64	2.35	-1.64	-1.68
11,463.00	91.25	0.99	8,201.69	3,633.30	150.80	3,635.61	3.05	2.49	1.76
11,557.00	90.11	359.06	8,200.58	3,727.29	150.85	3,729.58	2.38	-1.21	-2.05
11,652.00	89.49	0.99	8,200.91	3,822.28	150.89	3,824.56	2.13	-0.65	2.03
11,746.00	90.07	1.52	8,201.27	3,916.26	152.95	3,918.55	0.84	0.62	0.56
11,840.00	90.24	359.85	8,201.02	4,010.25	154.07	4,012.55	1.79	0.18	-1.78
11,934.00	90.33	358.18	8,200.55	4,104.23	152.45	4,106.48	1.78	0.10	-1.78
12,028.00	90.15	0.29	8,200.16	4,198.22	151.20	4,200.42	2.25	-0.19	2.24
12,123.00	90.77	1.43	8,199.39	4,293.20	152.62	4,295.41	1.37	0.65	1.20
12,217.00	89.67	3.01	8,199.03	4,387.13	156.27	4,389.39	2.05	-1.17	1.68
12,311.00	91.25	5.39	8,198.28	4,480.86	163.15	4,483.25	3.04	1.68	2.53
12,406.00	91.74	6.53	8,195.80	4,575.31	173.01	4,577.88	1.31	0.52	1.20
12,500.00	89.63	3.45	8,194.67	4,668.93	181.18	4,671.65	3.97	-2.24	-3.28
12,594.00	89.71	3.28	8,195.22	4,762.77	186.70	4,765.57	0.20	0.09	-0.18
12,688.00	91.82	4.33	8,193.96	4,856.55	192.94	4,859.46	2.51	2.24	1.12
12,783.00	89.05	2.22	8,193.24	4,951.38	198.36	4,954.38	3.67	-2.92	-2.22
12,877.00	89.32	2.66	8,194.58	5,045.28	202.36	5,048.34	0.55	0.29	0.47
12,971.00	92.13	4.68	8,193.39	5,139.07	208.38	5,142.23	3.68	2.99	2.15
13,066.00	89.76	2.40	8,191.82	5,233.86	214.24	5,237.12	3.46	-2.49	-2.40
13,160.00	91.34	4.33	8,190.92	5,327.69	219.76	5,331.04	2.65	1.68	2.05
13,254.00	88.66	2.40	8,190.92	5,421.51	225.28	5,424.96	3.51	-2.85	-2.05
13,349.00	86.95	1.61	8,194.56	5,516.38	228.60	5,519.88	1.98	-1.80	-0.83

Company:	SEM Operating Company, LLC	Local Co-ordinate Reference:	Site University 9 #2901WB
Project:	Reagan County, Texas	TVD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Site:	University 9 #2901WB	MD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Well:	#2901WB	North Reference:	Grid
Wellbore:	As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Single User Db

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)	
13,443.00	86.02	359.76	8,200.32	5,610.19	229.72	5,613.69	2.20	-0.99	-1.97	
13,537.00	87.74	357.30	8,205.44	5,704.01	227.31	5,707.44	3.19	1.83	-2.62	
13,631.00	89.98	355.90	8,207.31	5,797.82	221.74	5,801.12	2.81	2.38	-1.49	
13,726.00	89.54	355.19	8,207.71	5,892.53	214.36	5,895.66	0.88	-0.46	-0.75	
13,820.00	91.47	355.46	8,206.88	5,986.21	206.70	5,989.16	2.07	2.05	0.29	
13,914.00	90.86	354.58	8,204.97	6,079.83	198.54	6,082.60	1.14	-0.65	-0.94	
14,008.00	93.67	356.77	8,201.25	6,173.47	191.46	6,176.09	3.79	2.99	2.33	
14,102.00	92.35	358.62	8,196.31	6,267.26	187.68	6,269.78	2.42	-1.40	1.97	
14,197.00	92.40	0.47	8,192.38	6,362.17	186.93	6,364.65	1.95	0.05	1.95	
14,291.00	92.09	1.34	8,188.69	6,456.09	188.41	6,458.58	0.98	-0.33	0.93	
14,385.00	91.43	1.96	8,185.81	6,550.01	191.12	6,552.53	0.96	-0.70	0.66	
14,479.00	90.11	3.28	8,184.54	6,643.89	195.41	6,646.49	1.99	-1.40	1.40	
14,574.00	89.14	0.47	8,185.17	6,738.83	198.52	6,741.47	3.13	-1.02	-2.96	
14,668.00	87.12	358.71	8,188.23	6,832.77	197.85	6,835.37	2.85	-2.15	-1.87	
14,762.00	88.35	358.71	8,191.95	6,926.67	195.73	6,929.21	1.31	1.31	0.00	
14,857.00	88.75	359.59	8,194.35	7,021.63	194.33	7,024.12	1.02	0.42	0.93	
14,951.00	90.51	0.20	8,194.96	7,115.62	194.15	7,118.09	1.98	1.87	0.65	
15,045.00	91.82	0.82	8,193.05	7,209.60	194.99	7,212.07	1.54	1.39	0.66	
15,140.00	92.88	0.55	8,189.15	7,304.51	196.13	7,306.98	1.15	1.12	-0.28	
15,234.00	89.76	359.50	8,186.99	7,398.47	196.17	7,400.93	3.50	-3.32	-1.12	
15,328.00	88.40	1.43	8,188.50	7,492.45	196.93	7,494.90	2.51	-1.45	2.05	
15,423.00	88.40	1.61	8,191.15	7,587.38	199.45	7,589.86	0.19	0.00	0.19	
15,517.00	89.23	2.22	8,193.09	7,681.30	202.59	7,683.83	1.10	0.88	0.65	
15,611.00	89.01	1.08	8,194.54	7,775.25	205.29	7,777.82	1.24	-0.23	-1.21	
15,706.00	91.16	2.22	8,194.40	7,870.21	208.03	7,872.80	2.56	2.26	1.20	
15,800.00	89.98	359.59	8,193.46	7,964.18	209.51	7,966.79	3.07	-1.26	-2.80	
15,894.00	89.54	359.59	8,193.86	8,058.18	208.84	8,060.75	0.47	-0.47	0.00	
15,988.00	90.37	0.55	8,193.93	8,152.17	208.96	8,154.73	1.35	0.88	1.02	
16,082.00	90.64	0.20	8,193.10	8,246.17	209.57	8,248.72	0.47	0.29	-0.37	
16,177.00	91.34	359.76	8,191.46	8,341.15	209.54	8,343.69	0.87	0.74	-0.46	
16,271.00	92.40	0.20	8,188.39	8,435.10	209.50	8,437.61	1.22	1.13	0.47	
16,349.37	92.83	0.20	8,184.81	8,513.39	209.78	8,515.89	0.55	0.55	0.00	
LTP @ 16349.37'MD										
16,365.00	92.92	0.20	8,184.03	8,529.00	209.83	8,531.50	0.55	0.55	0.00	
Final Aim MWD Svy @ 16365'MD										
16,438.00	92.92	0.20	8,180.31	8,601.90	210.09	8,604.39	0.00	0.00	0.00	
PTD @ 16438'MD										



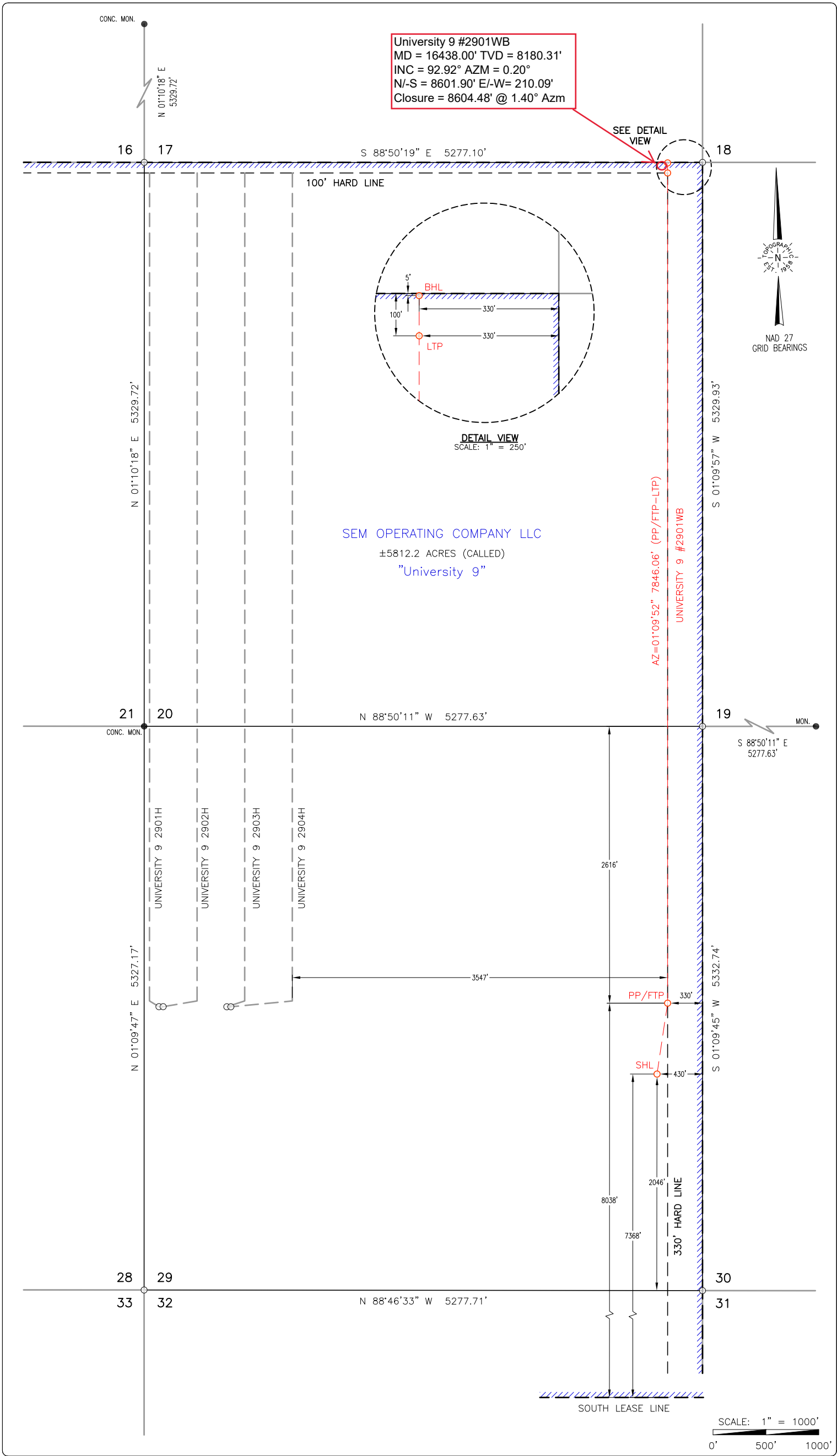
Aim Directional Services

Survey Report

Company:	SEM Operating Company, LLC	Local Co-ordinate Reference:	Site University 9 #2901WB
Project:	Reagan County, Texas	TVD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Site:	University 9 #2901WB	MD Reference:	2683'GL+26'KB @ 2709.00usft (H&P 467)
Well:	#2901WB	North Reference:	Grid
Wellbore:	As Drilled	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
700.00	700.00	0.86	1.20	Tie Into VES Gyro Svy
785.00	785.00	1.10	1.58	First Aim MWD Svy
8,494.09	8,191.95	667.66	109.05	FTP @ 8494.09'MD
16,349.37	8,184.81	8,513.39	209.78	LTP @ 16349.37'MD
16,365.00	8,184.03	8,529.00	209.83	Final Aim MWD Svy @ 16365'MD
16,438.00	8,180.31	8,601.90	210.09	PTD @ 16438'MD

Checked By: _____ Approved By: _____ Date: _____



Surface Hole Location:
GROUND ELEVATION:
SHL Ground Elevation: 2683'
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608426.01 Y = 572598.52
LAT.: N 31°14'06.13" LONG.: W 101°35'10.53"
LAT.: N 31.2350358 LONG.: W 101.5862580
NAD 83 TX-C ZONE:
X = 1904894.02 Y = 10415175.31
LAT.: N 31°14'06.68" LONG.: W 101°35'11.96"
LAT.: N 31.2351880 LONG.: W 101.5866552

SURVEY LINE PERPENDICULARS:
2046' FSL & 430' FEL (SEC. 29)
UNIT LINE PERPENDICULARS:
7368' FSL & 430' FEL

**Penetration Point/
First Take Point:**
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608539.57 Y = 573266.20
LAT.: N 31°14'12.75" LONG.: W 101°35'09.31"
LAT.: N 31.2368750 LONG.: W 101.5859187
NAD 83 TX-C ZONE:
X = 1905007.59 Y = 10415842.99
LAT.: N 31°14'13.30" LONG.: W 101°35'10.74"
LAT.: N 31.2370271 LONG.: W 101.5863158

SURVEY LINE PERPENDICULARS:
2616' FNL & 330' FEL (SEC. 29)
UNIT LINE PERPENDICULARS:
8038' FSL & 330' FEL

Last Take Point:
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608699.06 Y = 581110.64
LAT.: N 31°15'30.41" LONG.: W 101°35'08.49"
LAT.: N 31.2584466 LONG.: W 101.5856909
NAD 83 TX-C ZONE:
X = 1905167.10 Y = 10423687.43
LAT.: N 31°15'30.95" LONG.: W 101°35'09.92"
LAT.: N 31.2585980 LONG.: W 101.5860881

SURVEY LINE PERPENDICULARS:
100' FNL & 330' FEL (SEC. 20)
UNIT LINE PERPENDICULARS:
100' FNL & 330' FEL

Bottom Hole Location:
COORDINATES:
NAD 27 TX-C ZONE:
X = 1608700.99 Y = 581205.62
LAT.: N 31°15'31.35" LONG.: W 101°35'08.48"
LAT.: N 31.2587078 LONG.: W 101.5856882
NAD 83 TX-C ZONE:
X = 1905169.03 Y = 10423782.41
LAT.: N 31°15'31.89" LONG.: W 101°35'09.91"
LAT.: N 31.2588592 LONG.: W 101.5860854

SURVEY LINE PERPENDICULARS:
5' FNL & 330' FEL (SEC. 20)
UNIT LINE PERPENDICULARS:
5' FNL & 330' FEL

All Coordinates are in NAD 27 TX-C Zone unless otherwise noted.

REV#-BY	DATE REVISED	REV#-BY	DATE REVISED
1-ED	04/12/17	1-XXX	XX/XX/XX

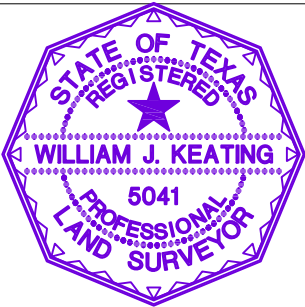
SPECIAL NOTES:

LEGEND		Unit Boundary
		Section Lines
		Block Line
		Powerline
		Pipeline
		Lease Road
		Calculated Corner

CERTIFICATION:

This well location shown on this permit plat was surveyed on the ground under my direct supervision. This plat is for Texas Railroad Commission permit purpose only and should not be considered a boundary survey.

William J. Keating
Texas Reg. No. 5041



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM
Texas FIRM Registration NO. 10042500
LO_UNIVERSITY_9_2901WB_REV1

SEM OPERATING
COMPANY LLC

LEASE NAME & WELL NO.:
UNIVERSITY 9 #2901WB
TOPOGRAPHY & VEGETATION:
NATURAL MESQUITE PASTURE
NEAREST TOWN IN COUNTY:
±8.1 MILES NORTHWEST OF BIG LAKE, TEXAS

LOCATION DESCRIPTION:

SHL/PP/FTP: SECTION 29, BLOCK 9, UNIVERSITY LANDS SURVEY
LTP/BHL: SECTION 20, BLOCK 9, UNIVERSITY LANDS SURVEY
REAGAN COUNTY, TEXAS

Scale: 1" = 1000' Surveyed: 11-10-2016 ORIGINAL DOC. SIZE: 11"x17"
COGO: 519-89429 Drawn By: MP; 11-29-2016



· Directional Drilling · Horizontal Drilling · MWD/LWD · Mud Motors

August 24, 2017

State of Texas
County of Reagan

I, Allison Reinert, certify that; I am employed by Aim Directional Services, LLC; that I did on the day(s) of June 18, 2017 through July 3, 2017 conduct or supervise the taking of a directional MWD survey from a depth of 785 feet to a depth of 16438 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Aim Directional Services, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of SEM Operating Company, LLC for University 9 #2901WB API No. 42-383-39868 in Reagan County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Aim Directional Services, LLC.

Allison Reinert
VP Engineering