



3335 Pollok Drive
Conroe, Texas 77303

936.442.2500 (Office)
936.442.2599 (Fax)
www.msenergyservices.com

May 12, 2017

The Railroad Commission of Texas
Oil and Gas Division
PO Drawer 12967
Capital Station
Austin, Texas 78711-2967

Attn: Pam Johns

RE: Approach Operating, LLC
University 42 2119HB (Permit No. 825013)
Survey: UL / Abstract: U371
Field: Holt Ranch (Consolidated)
Crockett County, TX
API number: 42-105-42381

Dear Pam Johns:

Please find enclosed the original and one copy of the survey performed on the above referenced well by MS Energy Services; RRC Operator No. 592474. Other information required by your office is as follows:

Name of surveyor	Drainhole number	Surveyed depths	Date performed	Type of Survey
Aaron Henzen	Original	Surface - 1198'	5/9/2017 - 5/9/2017	Rate Gyro

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

Sincerely,

Ryan Moran
MS Survey

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

Data Validation Time Stamp: May 11, 2017 11:03 AM(Current Version)



Job Number: SVMO-170338
 Company: Approach Operating, LLC
 Lease/Well: University 42 2119HB
 Location: Crockett County, TX
 Rig Name: Nomac 133
 RKB: 22.8'
 G.L. or M.S.L.: GL

State/Country: Texas/USA
 Declination: Declination See Details Below
 Grid: East To Grid North
 File name: C:\WINSER~1\2017\APPROACH\MO\UNIVER~1\42\2119HB.SVY
 Date/Time: 09-May-17 / 14:34
 Curve Name: Surface - 1198' M.D. (Rate Gyro)
 Lat: 30.913054 Long: -101.149684

MS Energy

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Declination To True North: 5.754°
 Grid Convergence Factor: -0° 25' 13.68719"
 Total Correction Mag to Grid: 6.17°

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.87	256.90	100.00	-.17	-.74	-.17	.76	256.90	.87
200.00	.97	254.58	199.98	-.57	-2.29	-.57	2.36	256.07	.11
300.00	1.02	258.22	299.97	-.98	-3.98	-.98	4.10	256.23	.08
400.00	.83	255.25	399.96	-1.34	-5.55	-1.34	5.71	256.41	.20
500.00	.70	239.45	499.95	-1.84	-6.78	-1.84	7.02	254.84	.25
600.00	.93	239.16	599.94	-2.56	-8.00	-2.56	8.40	252.24	.23
700.00	1.14	247.44	699.92	-3.36	-9.62	-3.36	10.19	250.74	.26
800.00	1.21	252.76	799.90	-4.06	-11.55	-4.06	12.24	250.64	.13
900.00	.99	249.49	899.88	-4.67	-13.36	-4.67	14.16	250.73	.23
1000.00	1.09	252.39	999.86	-5.26	-15.08	-5.26	15.97	250.76	.11
1100.00	1.03	247.89	1099.85	-5.89	-16.82	-5.89	17.82	250.71	.10
Last Survey Depth Recorded									
1198.00	1.00	239.57	1197.83	-6.65	-18.37	-6.65	19.54	250.09	.15

LEGEND

- = Surface Location (S.L.)
- PP = Penetration Point
- = Surface well (as drilled)
- FTP = 1st Take Point
- LTP = Last Take Point
- BHL = Bottom Hole Location

SURFACE LOCATION

Y = 454,230 ft.
X = 1,743,975 ft.
Latitude : 30.9131° N.
Longitude : 101.1498° W.
1032 ft. FSL and 1828 ft. FEL
University Land Survey 21, Block 42
1032 ft. FSL and 1828 ft. FEL of lease

PROPOSED PENETRATION POINT

48 ft. from Surf. 2119HB
Y = 454,230 ft.
X = 1,744,023 ft.
Latitude : 30.9131° N.
Longitude : 101.1498° W.
1032 ft. FSL and 1780 ft. FEL
University Land Survey 21, Block 42
1032 ft. FSL and 1780 ft. FEL of lease

PROPOSED 1st TAKE POINT

550 ft. from PP 2119HB
Y = 454,780 ft.
X = 1,744,025 ft.
Latitude : 30.9146° N.
Longitude : 101.1496° W.
1582 ft. FSL and 1780 ft. FEL
University Land Survey 21, Block 42
1582 ft. FSL and 1780 ft. FEL of lease

PROPOSED LAST TAKE POINT

80 ft. from BHL 2119HB
Y = 463,919 ft.
X = 1,744,047 ft.
Latitude : 30.9397° N.
Longitude : 101.1498° W.
100 ft. FNL and 1780 ft. FEL
University Land Survey 16, Block 42
100 ft. FNL and 1780 ft. FEL of lease

PROPOSED BOTTOMHOLE LOC.

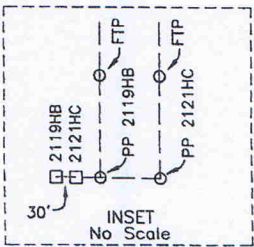
Y = 463,999 ft.
X = 1,744,047 ft.
Latitude : 30.9399° N.
Longitude : 101.1498° W.
20 ft. FNL and 1780 ft. FEL
University Land Survey 16, Block 42
20 ft. FNL and 1780 ft. FEL of lease

Perpendicular distances off 2119HB Univ."42" horizontal hole

FTP 2121HC (proposed) = 350'
2113HB Horiz hole = 1135'

Multi-Shot Bottom Hole Loc. 19.54' @ 250.09° Azm
of Surface Location.
MD 1198.00'
TVD 1197.83'
South 6.65'
West 18.37'

BLOCK AB



Located: N 10°E 14 miles from Ozona, Texas.

"Ac" = Acreage claimed by operator to be in lease.

0 2000 4000

SCALE: 1"=2000'

FIELD : Crockett
COUNTY : Crockett
OPERATOR : Approach Operating, LLC
LEASE : University "42"
WELL NO. : 2119HB
ELEVATION : 2596 ft. grd.
LOCATION : 1032 ft. FSL and 1828 ft. FEL of University Land Survey 21, Block 42, Crockett County, Texas.

NOTES

Courses, distances and coordinates shown hereon are of the Texas Coordinate System of 1927 - Central Zone.

The survey construction shown hereon is sufficient for staking this location and no other purpose.

The lease information shown hereon is based on information provided by operator or its representatives and was relied upon by surveyor for the purpose of staking this location. Said surveyor was not requested to verify lease and accepts no responsibility for the accuracy or status of this information.

Position of surveys shown hereon is based on Frank Friends survey of University Lands Blocks 38 to 57 dated July 24, 1937 on file in the General Land Office.

The above sketch represents the location as staked on the ground and is for permit purposes only.
Staked the 2nd day of February, 2017.



Thomas J. Houston
Registered Professional Land Surveyor No. 4261
FIRM NO. 10045600
OFFICE OF
WILSON LAND SURVEYING, INC.
1514 W. BEAUREGARD AVE.
P. O. BOX 3326 PH. 325-653-3916
SAN ANGELO, TEXAS 76902

Surveyor Certification Form

Survey company: **MS Energy Services**
Surveyors name: **Aaron Henzen**
Survey job type: **Rate Gyro**
Customer: **Approach Operating, LLC**
Well: **University 42 2119HB**
API: **42-105-42381**
Surveyed from: **Surface to a depth of 1198' MD**
Survey run date: **5/9/2017 to 5/9/2017**
Surface location: **Crockett County, TX**

I certify that the data is true, correct, complete and within the limitations of the tool set forth by MS Energy Services; that I am authorized and qualified to make this report; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by MS Energy Services.

Aaron Henzen

Digitally signed by Aaron
Henzen
DN: cn=Aaron Henzen, o=MS
Energy Services, ou=MS Survey,
email=AHenzen@msenergyserv
ices.com, c=US
Date: 2017.05.12 10:42:55
-05'00'

Approach Resources

**Crockett County, TX
University 42
University 42 2119HB**

Wellbore #1

Survey: Scout MWD

Standard Survey Report

16 May, 2017





Date: 06/29/2017

Railroad Commission of Texas
Oil and Gas Division
1701 North Congress Avenue
Austin, Texas 78711

Attention: Pam Johns

Re: Approach Resources
University 42 2119HB
Crockett County Texas
API No. 42-105-42381

Enclosed, please find the original and one copy of the survey performed on the referenced well by Scout Downhole Inc. (SDI). (P5#760217). Other information required by your office is as follows:

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Joe Sammarco	Original Hole	1198' – 13655'	05/09/17 - 05/16/17	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.

Larry Wright

Enclosures

Cc: Oxy USA Inc.

**1125 Beach Airport Rd, Conroe, Texas
77301
PH 936-756-3225 FAX 936-756-3248**

Company:	Approach Resources	Local Co-ordinate Reference:	Well University 42 2119HB
Project:	Crockett County, TX	TVD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Site:	University 42	MD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Well:	University 42 2119HB	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Single User Db

Project	Crockett County, TX		
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 42			
Site Position:		Northing:		464,398.00 usft	
From:		Easting:		1,725,990.00 usft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Map		13-3/16 "		30° 56' 26.288 N	
0.00 usft				101° 12' 26.588 W	
				-0.45 °	

Well	University 42 2119HB					
Well Position	+N-S	0.00 usft	Northing:	454,230.00 usft	Latitude:	30° 54' 46.993 N
	+E-W	0.00 usft	Easting:	1,743,975.00 usft	Longitude:	101° 8' 59.208 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,596.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	03/21/17	5.47	59.57	47,625.70000000

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		0.14

Survey Program		Date	05/16/17		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	1,198.00	Gyros (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
1,346.00	13,655.00	Scout MWD (Wellbore #1)	MWD	OWSG MWD - Standard	

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)
1,198.00	1.00	239.57	1,197.83	-6.65	-18.37	-6.70	0.00	0.00	0.00
1,346.00	0.79	169.22	1,345.82	-8.31	-19.29	-8.36	0.71	-0.14	-47.53
1,441.00	2.02	114.20	1,440.79	-9.64	-17.64	-9.68	1.78	1.29	-57.92
1,536.00	3.61	93.55	1,535.67	-10.51	-13.13	-10.54	1.96	1.67	-21.74
1,630.00	4.84	84.85	1,629.42	-10.34	-6.23	-10.35	1.47	1.31	-9.26
1,725.00	4.84	82.21	1,724.08	-9.43	1.73	-9.43	0.23	0.00	-2.78
1,820.00	4.57	81.07	1,818.76	-8.30	9.44	-8.28	0.30	-0.28	-1.20
1,915.00	4.40	80.45	1,913.47	-7.11	16.78	-7.07	0.19	-0.18	-0.65
2,010.00	4.13	80.89	2,008.21	-5.97	23.75	-5.91	0.29	-0.28	0.46
2,104.00	3.96	80.89	2,101.97	-4.92	30.29	-4.84	0.18	-0.18	0.00

Company:	Approach Resources	Local Co-ordinate Reference:	Well University 42 2119HB
Project:	Crockett County, TX	TVD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Site:	University 42	MD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Well:	University 42 2119HB	North Reference:	Grid
Wellbore:	Wellbore #1	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)
2,199.00	3.43	84.41	2,196.77	-4.12	36.36	-4.03	0.61	-0.56	3.71
2,295.00	2.99	87.57	2,292.62	-3.73	41.72	-3.63	0.49	-0.46	3.29
2,389.00	2.64	88.19	2,386.51	-3.56	46.33	-3.45	0.37	-0.37	0.66
2,485.00	1.49	85.20	2,482.45	-3.39	49.79	-3.27	1.20	-1.20	-3.11
2,579.00	1.23	87.66	2,576.42	-3.24	52.01	-3.12	0.28	-0.28	2.62
2,674.00	1.14	91.70	2,671.40	-3.23	53.98	-3.10	0.13	-0.09	4.25
2,769.00	0.35	68.76	2,766.39	-3.15	55.19	-3.02	0.87	-0.83	-24.15
2,864.00	0.26	82.38	2,861.39	-3.02	55.68	-2.88	0.12	-0.09	14.34
2,958.00	0.35	95.66	2,955.39	-3.02	56.17	-2.88	0.12	0.10	14.13
3,053.00	0.44	101.46	3,050.38	-3.12	56.82	-2.98	0.10	0.09	6.11
3,148.00	0.35	16.73	3,145.38	-2.91	57.26	-2.78	0.56	-0.09	-89.19
3,242.00	0.18	42.75	3,239.38	-2.53	57.44	-2.39	0.22	-0.18	27.68
3,337.00	0.18	236.89	3,334.38	-2.50	57.42	-2.36	0.38	0.00	-174.59
3,432.00	0.18	228.28	3,429.38	-2.68	57.18	-2.54	0.03	0.00	-9.06
3,527.00	0.26	187.59	3,524.38	-3.00	57.04	-2.86	0.18	0.08	-42.83
3,622.00	0.09	157.36	3,619.38	-3.28	57.04	-3.14	0.20	-0.18	-31.82
3,717.00	0.09	154.81	3,714.38	-3.42	57.10	-3.28	0.00	0.00	-2.68
3,812.00	0.09	113.23	3,809.38	-3.51	57.21	-3.37	0.07	0.00	-43.77
3,906.00	0.18	134.86	3,903.38	-3.65	57.38	-3.51	0.11	0.10	23.01
4,001.00	0.35	121.23	3,998.38	-3.90	57.73	-3.76	0.19	0.18	-14.35
4,096.00	0.62	141.62	4,093.38	-4.46	58.30	-4.31	0.33	0.28	21.46
4,191.00	0.70	149.45	4,188.37	-5.36	58.91	-5.21	0.13	0.08	8.24
4,285.00	0.70	153.49	4,282.36	-6.37	59.46	-6.22	0.05	0.00	4.30
4,380.00	0.79	164.04	4,377.35	-7.52	59.90	-7.37	0.17	0.09	11.11
4,475.00	0.79	159.90	4,472.35	-8.76	60.31	-8.61	0.06	0.00	-4.36
4,569.00	0.70	157.62	4,566.34	-9.90	60.75	-9.75	0.10	-0.10	-2.43
4,664.00	0.79	152.26	4,661.33	-11.02	61.27	-10.87	0.12	0.09	-5.64
4,759.00	0.70	141.36	4,756.32	-12.05	61.94	-11.90	0.18	-0.09	-11.47
4,854.00	0.53	154.02	4,851.32	-12.90	62.49	-12.74	0.23	-0.18	13.33
4,949.00	0.53	166.85	4,946.31	-13.72	62.79	-13.57	0.12	0.00	13.51
5,043.00	0.44	201.13	5,040.31	-14.48	62.76	-14.33	0.32	-0.10	36.47
5,138.00	0.53	213.78	5,135.31	-15.19	62.38	-15.03	0.15	0.09	13.32
5,189.00	0.53	213.34	5,186.30	-15.58	62.12	-15.43	0.01	0.00	-0.86
5,280.00	1.49	328.48	5,277.29	-14.92	61.27	-14.77	1.96	1.05	126.53
5,328.00	5.80	341.49	5,325.19	-12.09	60.17	-11.94	9.09	8.98	27.10
5,374.00	10.11	350.98	5,370.73	-5.89	58.80	-5.75	9.76	9.37	20.63
5,422.00	14.60	357.75	5,417.61	4.32	57.90	4.46	9.81	9.35	14.10
5,469.00	19.35	359.24	5,462.55	18.03	57.57	18.17	10.15	10.11	3.17
5,517.00	23.65	359.42	5,507.20	35.62	57.36	35.76	8.96	8.96	0.38
5,563.00	28.05	356.52	5,548.59	55.65	56.61	55.79	9.95	9.57	-6.30
5,611.00	32.71	356.25	5,589.99	79.87	55.08	80.00	9.71	9.71	-0.56
5,658.00	36.76	357.66	5,628.61	106.61	53.67	106.74	8.78	8.62	3.00
5,706.00	40.98	359.68	5,665.97	136.71	53.00	136.84	9.18	8.79	4.21

Company:	Approach Resources	Local Co-ordinate Reference:	Well University 42 2119HB
Project:	Crockett County, TX	TVD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Site:	University 42	MD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Well:	University 42 2119HB	North Reference:	Grid
Wellbore:	Wellbore #1	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)
5,753.00	46.08	359.68	5,700.03	169.07	52.82	169.20	10.85	10.85	0.00
5,801.00	51.27	359.68	5,731.72	205.10	52.62	205.23	10.81	10.81	0.00
5,847.00	54.26	359.59	5,759.55	241.72	52.38	241.85	6.50	6.50	-0.20
5,895.00	58.74	359.94	5,786.04	281.74	52.22	281.86	9.35	9.33	0.73
5,945.00	63.40	359.86	5,810.22	325.49	52.14	325.61	9.32	9.32	-0.16
5,990.00	68.68	359.50	5,828.48	366.59	51.91	366.72	11.76	11.73	-0.80
6,040.00	72.19	0.12	5,845.23	413.70	51.76	413.82	7.12	7.02	1.24
6,085.00	73.60	359.68	5,858.46	456.71	51.68	456.83	3.27	3.13	-0.98
6,134.00	78.17	359.15	5,870.41	504.21	51.20	504.34	9.39	9.33	-1.08
6,229.00	87.93	359.86	5,881.89	598.40	50.39	598.52	10.30	10.27	0.75
6,323.00	88.90	359.33	5,884.49	692.36	49.72	692.48	1.18	1.03	-0.56
6,418.00	90.04	359.59	5,885.37	787.35	48.83	787.46	1.23	1.20	0.27
6,512.00	88.20	358.80	5,886.81	881.32	47.51	881.43	2.13	-1.96	-0.84
6,606.00	89.52	357.75	5,888.68	975.26	44.68	975.36	1.79	1.40	-1.12
6,701.00	90.75	357.22	5,888.46	1,070.16	40.51	1,070.26	1.41	1.29	-0.56
6,796.00	85.21	356.08	5,891.81	1,164.90	34.97	1,164.98	5.95	-5.83	-1.20
6,890.00	86.00	358.80	5,899.01	1,258.52	30.78	1,258.59	3.00	0.84	2.89
6,985.00	86.26	358.19	5,905.42	1,353.27	28.29	1,353.34	0.70	0.27	-0.64
7,080.00	89.78	1.09	5,908.70	1,448.19	27.70	1,448.25	4.80	3.71	3.05
7,175.00	89.25	357.48	5,909.51	1,543.16	26.51	1,543.22	3.84	-0.56	-3.80
7,269.00	89.52	356.60	5,910.52	1,637.03	21.66	1,637.08	0.98	0.29	-0.94
7,364.00	89.43	354.76	5,911.39	1,731.75	14.50	1,731.78	1.94	-0.09	-1.94
7,459.00	89.25	354.32	5,912.48	1,826.32	5.47	1,826.32	0.50	-0.19	-0.46
7,553.00	92.86	3.28	5,910.75	1,920.17	3.50	1,920.17	10.27	3.84	9.53
7,648.00	94.35	4.25	5,904.78	2,014.77	9.72	2,014.79	1.87	1.57	1.02
7,743.00	93.21	2.58	5,898.51	2,109.39	15.37	2,109.42	2.13	-1.20	-1.76
7,838.00	90.92	1.96	5,895.09	2,204.25	19.13	2,204.29	2.50	-2.41	-0.65
7,932.00	89.87	3.55	5,894.44	2,298.13	23.64	2,298.18	2.03	-1.12	1.69
8,027.00	88.64	3.02	5,895.68	2,392.97	29.09	2,393.03	1.41	-1.29	-0.56
8,122.00	89.34	1.79	5,897.35	2,487.87	33.07	2,487.94	1.49	0.74	-1.29
8,217.00	88.11	2.05	5,899.46	2,582.79	36.25	2,582.87	1.32	-1.29	0.27
8,312.00	88.90	2.05	5,901.94	2,677.69	39.65	2,677.78	0.83	0.83	0.00
8,406.00	88.72	2.14	5,903.90	2,771.61	43.09	2,771.71	0.21	-0.19	0.10
8,498.00	87.85	1.61	5,906.65	2,863.52	46.10	2,863.62	1.11	-0.95	-0.58
8,589.00	91.54	2.67	5,907.13	2,954.44	49.49	2,954.55	4.22	4.05	1.16
8,678.00	90.75	1.96	5,905.35	3,043.35	53.09	3,043.47	1.19	-0.89	-0.80
8,767.00	87.67	0.03	5,906.58	3,132.31	54.63	3,132.43	4.08	-3.46	-2.17
8,858.00	88.11	359.77	5,909.93	3,223.25	54.47	3,223.37	0.56	0.48	-0.29
8,947.00	90.75	0.47	5,910.82	3,312.23	54.66	3,312.36	3.07	2.97	0.79
9,041.00	90.04	1.88	5,910.17	3,406.21	56.59	3,406.34	1.68	-0.76	1.50
9,136.00	89.34	2.93	5,910.68	3,501.12	60.58	3,501.26	1.33	-0.74	1.11
9,230.00	88.72	2.23	5,912.27	3,595.01	64.81	3,595.16	0.99	-0.66	-0.74
9,325.00	86.97	359.77	5,915.85	3,689.92	66.46	3,690.07	3.18	-1.84	-2.59

Company:	Approach Resources	Local Co-ordinate Reference:	Well University 42 2119HB
Project:	Crockett County, TX	TVD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Site:	University 42	MD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Well:	University 42 2119HB	North Reference:	Grid
Wellbore:	Wellbore #1	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)
9,420.00	86.61	358.63	5,921.17	3,784.76	65.14	3,784.91	1.26	-0.38	-1.20
9,515.00	91.01	357.39	5,923.14	3,879.66	61.84	3,879.80	4.81	4.63	-1.31
9,609.00	92.07	357.75	5,920.61	3,973.54	57.86	3,973.67	1.19	1.13	0.38
9,704.00	86.79	358.98	5,921.56	4,068.46	55.15	4,068.58	5.71	-5.56	1.29
9,798.00	87.67	358.63	5,926.10	4,162.33	53.19	4,162.44	1.01	0.94	-0.37
9,893.00	88.20	358.27	5,929.52	4,257.23	50.62	4,257.34	0.67	0.56	-0.38
9,988.00	91.45	2.93	5,929.81	4,352.18	51.62	4,352.30	5.98	3.42	4.91
10,083.00	90.57	3.02	5,928.14	4,447.04	56.55	4,447.17	0.93	-0.93	0.09
10,178.00	90.22	0.30	5,927.48	4,541.99	59.30	4,542.12	2.89	-0.37	-2.86
10,273.00	90.22	358.19	5,927.12	4,636.98	58.05	4,637.10	2.22	0.00	-2.22
10,368.00	88.72	359.59	5,928.00	4,731.95	56.21	4,732.07	2.16	-1.58	1.47
10,463.00	90.40	1.00	5,928.73	4,826.94	56.69	4,827.06	2.31	1.77	1.48
10,558.00	89.43	2.32	5,928.87	4,921.90	59.45	4,922.03	1.72	-1.02	1.39
10,653.00	90.31	2.23	5,929.08	5,016.82	63.22	5,016.96	0.93	0.93	-0.09
10,748.00	89.08	0.65	5,929.59	5,111.78	65.60	5,111.93	2.11	-1.29	-1.66
10,843.00	90.84	0.73	5,929.66	5,206.77	66.75	5,206.92	1.85	1.85	0.08
10,937.00	89.78	359.68	5,929.15	5,300.77	67.09	5,300.92	1.59	-1.13	-1.12
11,032.00	89.08	358.63	5,930.09	5,395.75	65.68	5,395.90	1.33	-0.74	-1.11
11,127.00	89.43	358.71	5,931.33	5,490.72	63.48	5,490.86	0.38	0.37	0.08
11,221.00	90.48	359.24	5,931.40	5,584.70	61.80	5,584.83	1.25	1.12	0.56
11,316.00	89.96	358.36	5,931.04	5,679.68	59.81	5,679.81	1.08	-0.55	-0.93
11,411.00	89.69	357.04	5,931.33	5,774.60	56.00	5,774.72	1.42	-0.28	-1.39
11,505.00	89.52	355.55	5,931.98	5,868.40	49.92	5,868.50	1.60	-0.18	-1.59
11,600.00	89.34	358.19	5,932.92	5,963.24	44.74	5,963.33	2.79	-0.19	2.78
11,695.00	89.25	1.79	5,934.09	6,058.22	44.72	6,058.31	3.79	-0.09	3.79
11,790.00	88.99	2.49	5,935.55	6,153.14	48.27	6,153.24	0.79	-0.27	0.74
11,884.00	89.69	2.14	5,936.63	6,247.06	52.06	6,247.17	0.83	0.74	-0.37
11,979.00	90.04	1.88	5,936.86	6,342.00	55.39	6,342.11	0.46	0.37	-0.27
12,074.00	89.69	1.79	5,937.08	6,436.95	58.44	6,437.07	0.38	-0.37	-0.09
12,169.00	89.43	0.56	5,937.81	6,531.92	60.38	6,532.05	1.32	-0.27	-1.29
12,263.00	88.99	359.33	5,939.11	6,625.91	60.29	6,626.04	1.39	-0.47	-1.31
12,358.00	89.25	359.06	5,940.56	6,720.89	58.96	6,721.02	0.39	0.27	-0.28
12,453.00	89.34	357.39	5,941.73	6,815.84	56.02	6,815.95	1.76	0.09	-1.76
12,548.00	89.43	357.92	5,942.75	6,910.75	52.13	6,910.86	0.57	0.09	0.56
12,642.00	89.34	358.71	5,943.76	7,004.70	49.37	7,004.80	0.85	-0.10	0.84
12,737.00	89.08	358.63	5,945.07	7,099.67	47.16	7,099.76	0.29	-0.27	-0.08
12,831.00	89.78	359.24	5,946.01	7,193.65	45.42	7,193.74	0.99	0.74	0.65
12,925.00	91.45	0.30	5,945.00	7,287.64	45.04	7,287.73	2.10	1.78	1.13
13,020.00	93.39	359.77	5,940.99	7,382.55	45.10	7,382.64	2.12	2.04	-0.56
13,115.00	91.45	1.53	5,936.98	7,477.45	46.17	7,477.54	2.76	-2.04	1.85
13,210.00	89.78	1.70	5,935.96	7,572.40	48.85	7,572.50	1.77	-1.76	0.18
13,305.00	88.46	1.88	5,937.42	7,667.34	51.82	7,667.45	1.40	-1.39	0.19
13,399.00	89.69	2.32	5,938.93	7,761.26	55.26	7,761.38	1.39	1.31	0.47
13,494.00	88.02	2.14	5,940.83	7,856.17	58.96	7,856.29	1.77	-1.76	-0.19

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Site:	University 42	MD Reference:	GL 2596' + 22.5' KB @ 2618.50usft (Nomac 133)
Well:	University 42 2119HB	North Reference:	Grid
Wellbore:	Wellbore #1	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)
13,586.00	88.90	2.05	5,943.30	7,948.07	62.32	7,948.20	0.96	0.96	-0.10
Final MWD Survey @ 13586' MD									
13,655.00	88.90	2.05	5,944.63	8,017.02	64.79	8,017.15	0.00	0.00	0.00
Proj to TD @ 13655' MD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
13,586.00	5,943.30	7,948.07	62.32	Final MWD Survey @ 13586' MD
13,655.00	5,944.63	8,017.02	64.79	Proj to TD @ 13655' MD

Checked By: _____ Approved By: _____ Date: _____

LEGEND

- = Surface Location (S.L.)
 PP = Penetration Point
 ● = Surface well (as drilled)
 FTP = 1st Take Point
 LTP = Last Take Point
 BHL = Bottom Hole Location

SURFACE LOCATION

Y = 454,230 ft.
 X = 1,743,975 ft.
 Latitude : 30.9131° N.
 Longitude : 101.1498° W.
 1032 ft. FSL and 1828 ft. FEL
 University Land Survey 21, Block 42
 1032 ft. FSL and 1828 ft. FEL of lease

PROPOSED PENETRATION POINT

48 ft. from Surf. 2119HB
 Y = 454,230 ft.
 X = 1,744,023 ft.
 Latitude : 30.9131° N.
 Longitude : 101.1496° W.
 1032 ft. FSL and 1780 ft. FEL
 University Land Survey 21, Block 42
 1032 ft. FSL and 1780 ft. FEL of lease

PROPOSED 1st TAKE POINT

550 ft. from PP 2119HB
 Y = 454,780 ft.
 X = 1,744,025 ft.
 Latitude : 30.9146° N.
 Longitude : 101.1496° W.
 1582 ft. FSL and 1780 ft. FEL
 University Land Survey 21, Block 42
 1582 ft. FSL and 1780 ft. FEL of lease

PROPOSED LAST TAKE POINT

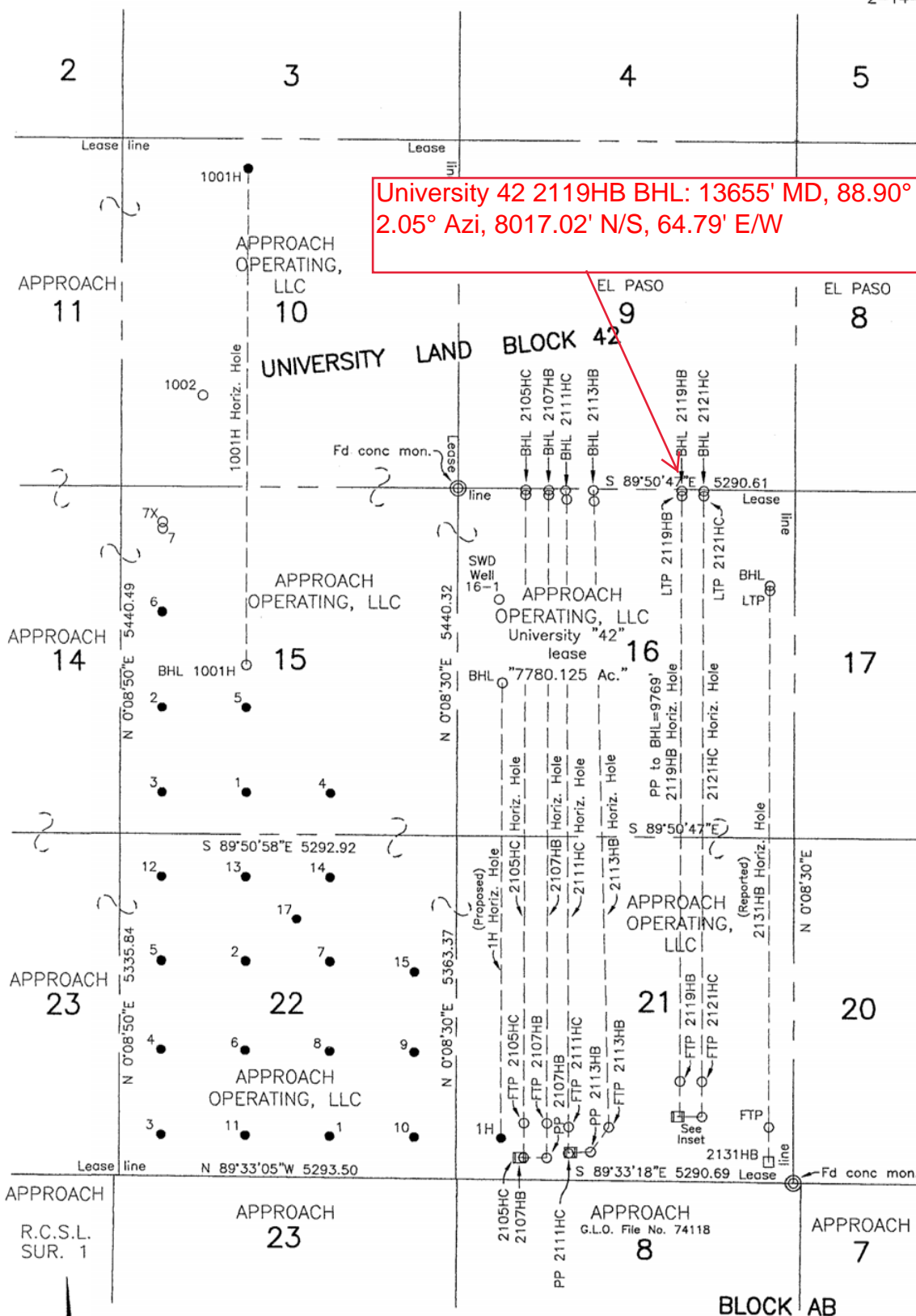
80 ft. from BHL 2119HB
 Y = 463,919 ft.
 X = 1,744,047 ft.
 Latitude : 30.9397° N.
 Longitude : 101.1498° W.
 100 ft. FNL and 1780 ft. FEL
 University Land Survey 16, Block 42
 100 ft. FNL and 1780 ft. FEL of lease

PROPOSED BOTTOMHOLE LOC.

Y = 463,999 ft.
 X = 1,744,047 ft.
 Latitude : 30.9399° N.
 Longitude : 101.1498° W.
 20 ft. FNL and 1780 ft. FEL
 University Land Survey 16, Block 42
 20 ft. FNL and 1780 ft. FEL of lease

Perpendicular distances off 2119HB
 Univ."42" horizontal hole

FTP 2121HC (proposed) = 350'
 2113HB Horiz hole = 1135'



Located: N 10°E 14 miles from Ozona, Texas.

"Ac" = Acreage claimed by operator to be in lease.



SCALE: 1"=2000'

FIELD : Crockett
 COUNTY : Crockett
 OPERATOR : Approach Operating, LLC
 LEASE : University "42"
 WELL NO. : 2119HB
 ELEVATION : 2596 ft. grd.
 LOCATION : 1032 ft. FSL and 1828 ft. FEL of University Land Survey 21, Block 42, Crockett County, Texas.

NOTES

Courses, distances and coordinates shown hereon are of the Texas Coordinate System of 1927 - Central Zone.

The survey construction shown hereon is sufficient for staking this location and no other purpose.

The lease information shown hereon is based on information provided by operator or its representatives and was relied upon by surveyor for the purpose of staking this location. Said surveyor was not requested to verify lease and accepts no responsibility for the accuracy or status of this information.

Position of surveys shown hereon is based on Frank Friends survey of University Lands Blocks 38 to 57 dated July 24, 1937 on file in the General Land Office.

The above sketch represents the location as staked on the ground and is for permit purposes only.

Staked the 2nd day of February, 2017.



Thomas J. Houston
 Registered Professional Land Surveyor No. 4261
 FIRM NO. 10045600

OFFICE OF
 WILSON LAND SURVEYING, INC.

1514 W. BEAUREGARD AVE.
 P. O. BOX 3326 PH. 325-653-3916
 SAN ANGELO, TEXAS 76902

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I **Larry Wright**, certify that I am employed by **Scout Downhole Inc. (SDI)**. That I did on the day(s) of **05/09/17** thru **05/16/17** conduct or supervise the taking of a **MWD Survey** from a depth of **1198'** to a depth of **13655'**; that the data is true, correct, complete and within the limitations of the tool as set forth by **Scout Downhole Inc. (SDI)**.; that I am authorized and qualified to make this report; that this survey was conducted at the request of **Approach Resources** for the **University 42 2119HB** API No. **42-105-42381** in **Crockett County, Texas**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **Scout Downhole Inc. (SDI)**.

Larry Wright