

Company: Sable Permian Resources
Lease/Well: University Owens 1-6 /33HK



Rig Name: Integrity 3
State/County: Texas/Reagan
VS-Azi: 0.00 Degrees
Latitude: 31.16223, Longitude: -101.30230
Grid North = True North +0.50 degs (NAD 27)
Grid Correction Applied = +0.50 degs



Depth Reference : RKB= Ground Level

DRILLOG HA GYRO SURVEY CALCULATIONS


Filename: ...wens 1-6 alloc #33hk-de_02.ut
Minimum Curvature Method
Report Date/Time: 5/15/2019 / 11:48

VES Survey International
Fort Worth, Texas
Office 817-741-3610
Surveyor: Gregg Wilson
University Owens 1-6 33HK / 42-383-40619

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	0.55	94.27	50.00	-0.02	0.24	-0.02	0.24	94.27	1.11
100.00	0.09	36.25	100.00	-0.01	0.50	-0.01	0.50	90.65	1.03
150.00	0.30	49.59	150.00	0.11	0.62	0.11	0.63	80.17	0.42
200.00	0.32	24.84	200.00	0.32	0.78	0.32	0.84	67.80	0.27
250.00	0.28	345.17	250.00	0.56	0.81	0.56	0.98	55.20	0.41
300.00	0.38	244.92	300.00	0.61	0.63	0.61	0.87	45.89	1.02
350.00	0.40	221.76	350.00	0.41	0.36	0.41	0.54	41.49	0.32
400.00	0.28	280.67	399.99	0.30	0.12	0.30	0.32	22.47	0.70
450.00	0.30	172.49	449.99	0.19	0.02	0.19	0.19	6.34	0.94
500.00	0.29	145.22	499.99	-0.04	0.11	-0.04	0.12	111.85	0.28
550.00	0.34	51.64	549.99	-0.06	0.30	-0.06	0.30	100.51	0.92
600.00	0.34	337.24	599.99	0.17	0.36	0.17	0.40	64.08	0.82
650.00	0.57	265.43	649.99	0.29	0.05	0.29	0.30	9.92	1.14
700.00	0.42	227.37	699.99	0.15	-0.33	0.15	0.36	294.08	0.71
750.00	0.25	276.63	749.99	0.04	-0.57	0.04	0.57	273.80	0.63
800.00	0.47	307.84	799.99	0.18	-0.84	0.18	0.86	281.82	0.58
850.00	0.45	238.72	849.99	0.20	-1.17	0.20	1.18	279.73	1.04
876.00	0.43	265.96	875.99	0.14	-1.35	0.14	1.36	275.96	0.79



I Gregg Wilson certify that I am employed by VES Survey International. That I did on the day(s) of 05/11/19 through 05/11/19 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 876.00 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 Sable Permian Resources for the University Owens 1-6 Alloc 33 Well # #33HK API # 42-383-40619 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.



Gregg Wilson
Service Technician
VES Survey International

NAD 27, Central Zone 4203

Surface Hole Location (Sec. 235)
Latitude = 31.162229° N
Longitude = 101.302296° W
X = 1696938.77
Y = 545233.17
Elev. = 2702'
745' FSL & 610' FEL

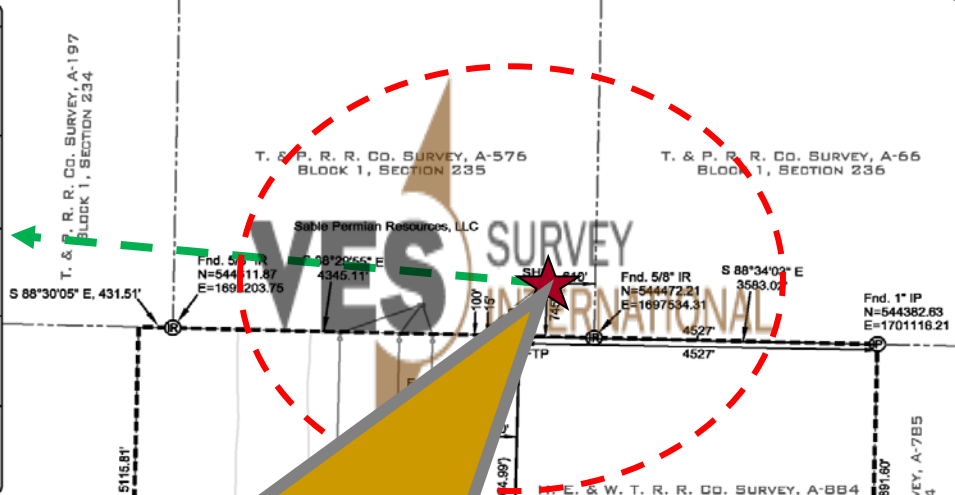
Point of Penetration (Sec. 6)
Latitude = 31.160155° N
Longitude = 101.303389° W
X = 1696590.41
Y = 544481.89
15' FNL & 4527' FEL

First Take Point (Sec. 6)
Latitude = 31.169921° N
Longitude = 101.303393° W
X = 1696588.45
Y = 544396.92
100' FNL & 4527' FEL

Last Take Point (Sec. 1)
Latitude = 31.132250° N
Longitude = 101.303857° W
X = 1696355.64
Y = 534334.61
100' FSL & 738' FEL

Bottom Hole Location (Sec. 1)
Latitude = 31.132016° N
Longitude = 101.303860° W
X = 1696353.07
Y = 534248.62
16' FSL & 740' FEL

Lease Boundary Distance	
SHL	Off Lease
PP	15' FNL & 4527' FEL
FTP	100' FNL & 4527' FEL
LTP	100' FSL & 738' FEL
BHL	16' FSL & 740' FEL



VES Bottom Hole Location is 1.36' @ 275.96° of Surface Location

H. E. & W. T. R. Co. Survey, A-218
SECTION 5

S 89°56'56" E, 52.42'

University Lands Block 48, Section 1

University Lands Block 48, Section 10

University Lands Block 43, Section 5

University Lands Block 43, Section 6

University Lands Block 43, Section 7

University Lands Block 43, Section 8

University Lands Block 43, Section 9

University Lands Block 43, Section 10

University Lands Block 43, Section 11

University Lands Block 43, Section 12

University Lands Block 43, Section 13

University Lands Block 43, Section 14

University Lands Block 43, Section 15

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University Lands Block 43, Section 97

University Lands Block 43, Section 98

University Lands Block 43, Section 99

University Lands Block 43, Section 100

VES LEGEND

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

SABLE PERMIAN RESOURCES

Well Name
University Owens 1-6 Alloc 33 33HK
Drilling Field
LIN (WOLF CAMP) FIELD
Nearest Town
8.43 MILES NORTHWEST OF BARNHART, TEXAS

I, Damian M. Jagers do hereby certify that the above described well plat was created from a survey made on the ground under my supervision, as shown.

Damian M. Jagers 5/6/2019
DATE
DAMIAN M. JAGERS
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 6269

STATE OF TEXAS
REGISTERED
DAMIAN M. JAGERS
6269
LAND SURVEYOR

NOTE: This Plat does not, in anyway represent a "Boundary Survey", and does not comply with the current T.B.P.L.S. Minimum Standards of Procedures for Boundary Survey. Shown Acreages were furnished by others. The information contained on this plat is intended for the sole use of SABLE PERMIAN RESOURCES LAND, LLC.

NOTE: Bearings and coordinates refer to the Texas Coordinate System of 1927, Central Zone (4203), as observed by GPS observations.

Treat No.	Lessor	Called Acreage
1	Tom Bloxom	1074.5
2	State of Texas	865.9
	Total	1740.5

XTS
CROSS TIMBERS SURVEYING, LLC
1803 Chestnut St., Longview, TX 75601
Phone: 214-406-0101 Fax: 214-406-0115
www.xtsurvey.com

Well Plat for
Sable Permian Resources Land, LLC

University Owens 1-6 Alloc 33 33HK
T. & P. R. R. Co. Survey, A-576 // Block 1, Sec. 235
H. E. & W. T. R. Co. Survey, A-884 // Section 6
University Lands Block 48, Section 1
Reagan County, Texas

383-40619

VES Bottom Hole Location is 1.36' @ 275.96° of Surface Location

MD / FT	876.00		875.99	TVD / FT
North / FT	South / FT		East / FT	West / FT
0.14			1.35	

VES SURVEY INTERNATIONAL

852545



Sable Permian Resources

Reagan County, TX (NAD 27)

Sec 235 V Pad

University Owens 1-6 Alloc 33 #33HK

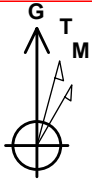
HZ [481237]

Design: FINAL

Standard Survey Report

06 July, 2019





Total Azimuth to Grid North
 True North: 0.50°
 Magnetic North: 6.03°
 Magnetic Field
 Strength: 47315.4nT
 Dip Angle: 59.45°
 Date: 6/24/2019
 Model: HDGM_FILE

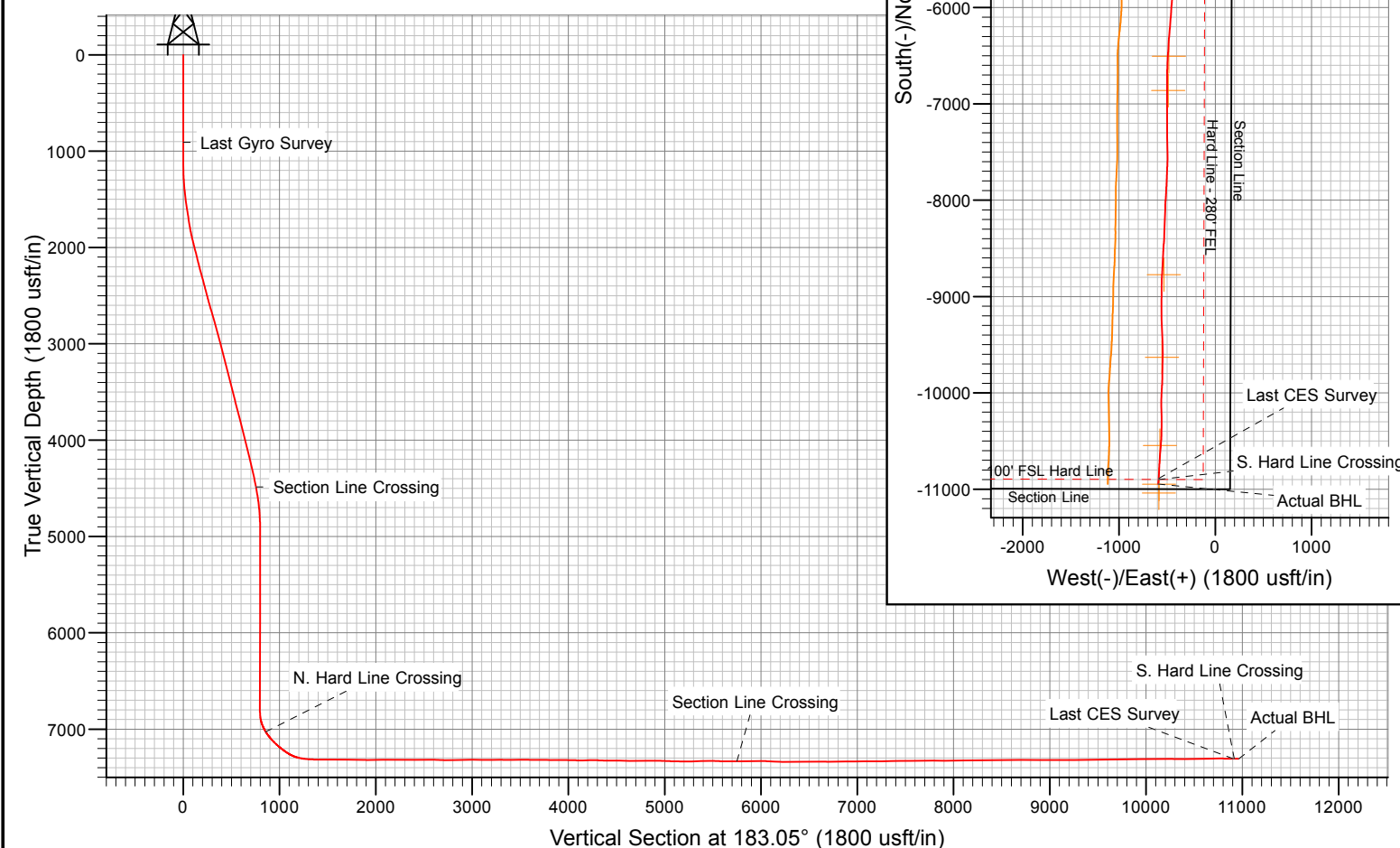
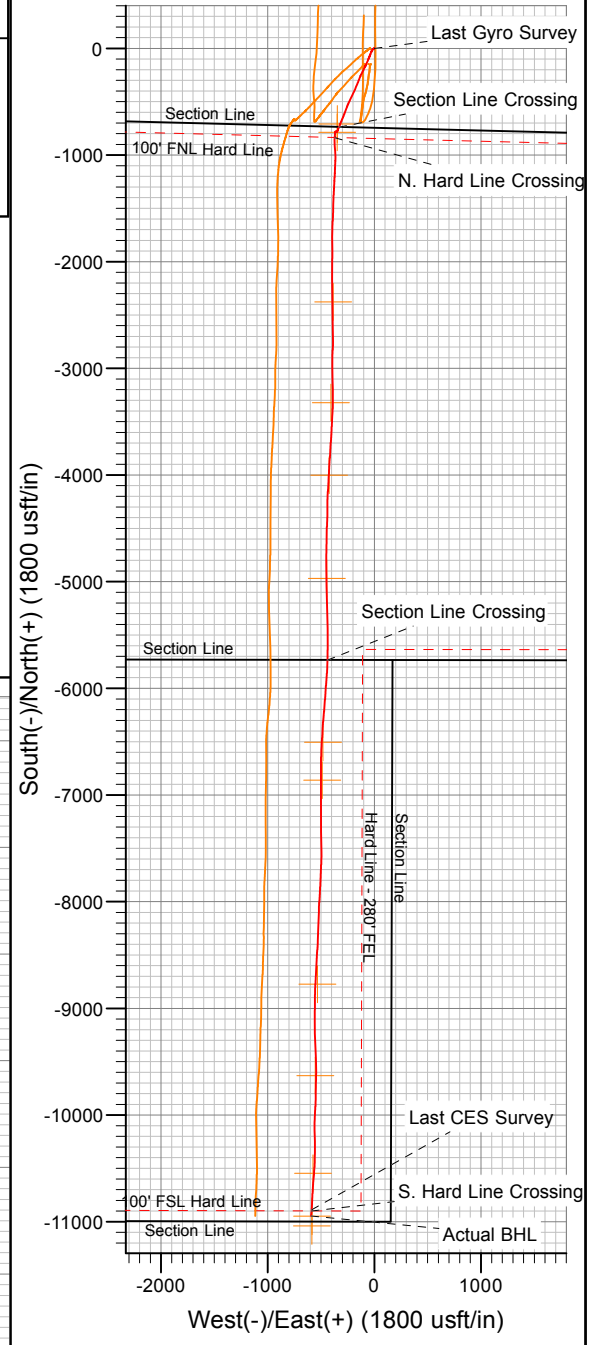
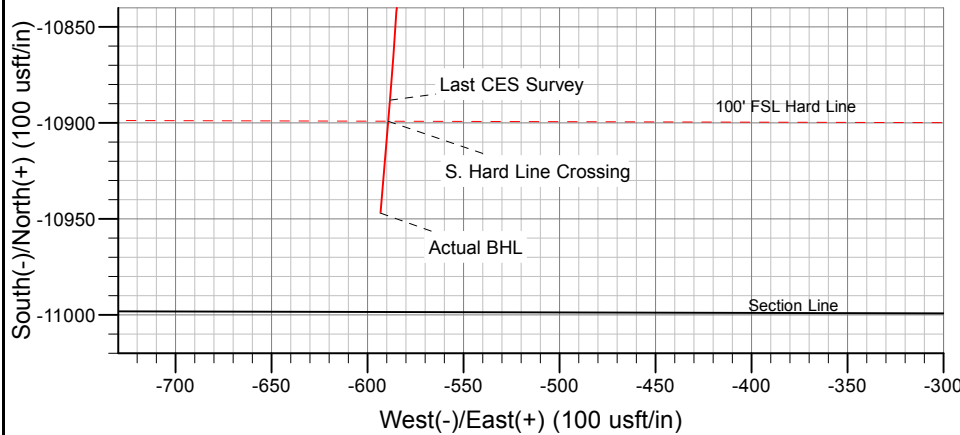
Gravity = 0.9985°
 Ground Elevation: 2702.00
 +N/-S +E/-W Northing Easting Latitude Longitude
 0.00 0.00 545233.17 1696938.77 31.162229 -101.302296

LP Target Line
 89.97° INC @ 6316.75' TVD @ 0' VS
 5' Up / Down & 30' Left / Right

Actual Bottom Hole Location
 52' FSL / 748' FEL (Sec 01)
 X: 1696345.48 Y: 534286.19

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Annotation
907.00	0.43	265.96	906.98	0.14	-1.21	-0.07	Last Gyro Survey
4590.00	11.23	202.90	4486.33	-738.13	-331.79	754.74	Section Line Crossing
7145.00	31.42	182.49	7026.65	-837.18	-371.51	855.76	N. Hard Line Crossing
12151.00	89.12	181.30	7333.18	-5734.49	-439.37	5749.75	Section Line Crossing
17311.00	90.20	184.80	7307.05	-10888.19	-588.36	10904.07	Last CES Survey
17322.00	90.20	184.80	7307.01	-10899.15	-589.28	10915.06	S. Hard Line Crossing
17370.00	90.20	184.80	7306.85	-10946.98	-593.29	10963.04	Actual BHL



Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Reagan County, TX (NAD 27)		
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		Sec 235 V Pad, Gravity = 0.9985°			
Site Position:		Northing:	545,085.06 usft	Latitude:	31.161820
From:	Map	Easting:	1,696,864.86 usft	Longitude:	-101.302529
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.50 °

Well	University Owens 1-6 Alloc 33 #33HK					
Well Position	+N/-S	0.00 usft	Northing:	545,233.17 usft	Latitude:	31.162229
	+E/-W	0.00 usft	Easting:	1,696,938.77 usft	Longitude:	-101.302296
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,702.00 usft

Wellbore	HZ [481237]				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	6/24/2019	5.53	59.45	47,315.40000000

Design	FINAL				
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	183.05	

Survey Program	Date	7/6/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
81.00	907.00	Surface Gyros (HZ [481237])	VESSI_GYROFLEX	VESSI Gyroflex Gyro	
1,045.00	17,370.00	CES MWD (HZ [481237])	MWD+HDGM	OWSG MWD + HDGM	

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	
81.00	0.55	94.27	81.00	-0.03	0.39	0.01	0.68	0.68	0.00	
131.00	0.09	36.25	131.00	-0.02	0.65	-0.02	1.02	-0.92	-116.04	
181.00	0.30	49.59	181.00	0.10	0.77	-0.14	0.43	0.42	26.68	
231.00	0.32	24.84	231.00	0.31	0.93	-0.36	0.27	0.04	-49.50	
281.00	0.28	345.17	281.00	0.56	0.96	-0.61	0.41	-0.08	-79.34	
331.00	0.38	244.92	331.00	0.61	0.78	-0.65	1.02	0.20	-200.50	
381.00	0.40	221.76	380.99	0.41	0.51	-0.43	0.32	0.04	-46.32	
431.00	0.28	280.67	430.99	0.30	0.27	-0.31	0.70	-0.24	117.82	
481.00	0.30	172.49	480.99	0.19	0.17	-0.20	0.94	0.04	-216.36	

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
531.00	0.29	145.22	530.99	-0.04	0.26	0.03	0.28	-0.02	-54.54
581.00	0.34	51.64	580.99	-0.06	0.45	0.03	0.92	0.10	-187.16
631.00	0.34	337.24	630.99	0.17	0.51	-0.20	0.82	0.00	-148.80
681.00	0.57	265.43	680.99	0.29	0.20	-0.30	1.13	0.46	-143.62
731.00	0.42	227.37	730.99	0.15	-0.18	-0.14	0.71	-0.30	-76.12
781.00	0.25	276.63	780.99	0.04	-0.42	-0.01	0.64	-0.34	98.52
831.00	0.47	307.84	830.99	0.17	-0.69	-0.14	0.57	0.44	62.42
881.00	0.45	238.72	880.99	0.20	-1.02	-0.14	1.04	-0.04	-138.24
907.00	0.43	265.96	906.98	0.14	-1.21	-0.07	0.80	-0.08	104.77
Last Gyro Survey									
1,045.00	0.80	254.90	1,044.98	-0.15	-2.65	0.29	0.28	0.27	-8.01
1,140.00	1.10	256.80	1,139.96	-0.53	-4.18	0.75	0.32	0.32	2.00
1,234.00	2.50	234.80	1,233.92	-1.92	-6.74	2.27	1.63	1.49	-23.40
1,327.00	5.10	222.80	1,326.70	-6.12	-11.20	6.71	2.91	2.80	-12.90
1,421.00	7.30	217.30	1,420.15	-13.94	-17.66	14.86	2.42	2.34	-5.85
1,515.00	8.30	207.80	1,513.28	-24.69	-24.45	25.96	1.73	1.06	-10.11
1,609.00	9.30	202.10	1,606.18	-37.73	-30.47	39.30	1.41	1.06	-6.06
1,703.00	9.00	201.10	1,698.98	-51.63	-35.97	53.47	0.36	-0.32	-1.06
1,797.00	10.60	200.30	1,791.61	-66.60	-41.62	68.72	1.71	1.70	-0.85
1,891.00	13.70	202.60	1,883.49	-84.99	-48.90	87.47	3.34	3.30	2.45
1,985.00	15.40	203.10	1,974.47	-106.75	-58.07	109.68	1.81	1.81	0.53
2,079.00	15.10	203.60	2,065.16	-129.45	-67.87	132.87	0.35	-0.32	0.53
2,173.00	14.60	204.80	2,156.02	-151.42	-77.74	155.34	0.62	-0.53	1.28
2,267.00	16.40	205.30	2,246.60	-174.17	-88.38	178.63	1.92	1.91	0.53
2,361.00	16.60	205.90	2,336.73	-198.25	-99.92	203.29	0.28	0.21	0.64
2,455.00	16.30	206.90	2,426.88	-222.09	-111.75	227.72	0.44	-0.32	1.06
2,549.00	15.90	207.00	2,517.19	-245.33	-123.57	251.56	0.43	-0.43	0.11
2,643.00	16.90	201.90	2,607.37	-269.48	-134.51	276.26	1.86	1.06	-5.43
2,737.00	17.10	200.80	2,697.27	-295.08	-144.51	302.35	0.40	0.21	-1.17
2,832.00	16.70	201.70	2,788.16	-320.82	-154.52	328.58	0.50	-0.42	0.95
2,925.00	16.40	202.60	2,877.31	-345.35	-164.51	353.62	0.42	-0.32	0.97
3,019.00	15.90	203.40	2,967.60	-369.42	-174.72	378.19	0.58	-0.53	0.85
3,113.00	15.40	203.90	3,058.12	-392.65	-184.89	401.93	0.55	-0.53	0.53
3,207.00	15.30	204.80	3,148.76	-415.32	-195.15	425.11	0.27	-0.11	0.96
3,301.00	14.90	205.70	3,239.52	-437.47	-205.59	447.79	0.49	-0.43	0.96
3,356.00	15.30	205.70	3,292.62	-450.38	-211.81	461.01	0.73	0.73	0.00
3,395.00	15.90	205.30	3,330.18	-459.84	-216.32	470.70	1.56	1.54	-1.03
3,489.00	16.00	205.50	3,420.56	-483.18	-227.40	494.59	0.12	0.11	0.21
3,583.00	15.30	206.10	3,511.08	-506.01	-238.43	517.98	0.76	-0.74	0.64
3,677.00	14.40	202.40	3,601.94	-527.95	-248.34	540.42	1.39	-0.96	-3.94
3,771.00	15.50	200.70	3,692.76	-550.51	-257.24	563.42	1.26	1.17	-1.81
3,865.00	15.40	200.90	3,783.36	-573.92	-266.13	587.27	0.12	-0.11	0.21
3,959.00	15.40	200.60	3,873.98	-597.26	-274.97	611.05	0.08	0.00	-0.32

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Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
4,052.00	14.60	200.40	3,963.81	-619.81	-283.40	634.01	0.86	-0.86	-0.22
4,147.00	14.20	202.80	4,055.83	-641.77	-292.09	656.40	0.76	-0.42	2.53
4,241.00	14.80	203.00	4,146.84	-663.45	-301.25	678.54	0.64	0.64	0.21
4,335.00	14.20	201.50	4,237.84	-685.23	-310.17	700.76	0.75	-0.64	-1.60
4,429.00	13.50	201.90	4,329.11	-706.14	-318.49	722.08	0.75	-0.74	0.43
4,523.00	12.30	202.90	4,420.73	-725.54	-326.48	741.89	1.30	-1.28	1.06
4,590.00	11.23	202.90	4,486.33	-738.13	-331.79	754.74	1.60	-1.60	0.00
Section Line Crossing									
4,617.00	10.80	202.90	4,512.83	-742.88	-333.80	759.59	1.60	-1.60	0.00
4,712.00	9.00	201.60	4,606.41	-757.99	-340.00	775.01	1.91	-1.89	-1.37
4,806.00	6.00	198.40	4,699.60	-769.49	-344.26	786.72	3.22	-3.19	-3.40
4,900.00	3.50	206.10	4,793.27	-776.73	-347.07	794.10	2.74	-2.66	8.19
4,994.00	1.10	207.80	4,887.18	-780.10	-348.75	797.56	2.55	-2.55	1.81
5,088.00	0.10	56.40	4,981.18	-780.86	-349.11	798.33	1.26	-1.06	-161.06
5,182.00	0.40	19.80	5,075.18	-780.50	-348.93	797.96	0.35	0.32	-38.94
5,277.00	0.40	323.70	5,170.18	-779.92	-349.01	797.39	0.40	0.00	-59.05
5,370.00	0.40	289.00	5,263.17	-779.56	-349.51	797.05	0.26	0.00	-37.31
5,465.00	0.30	235.70	5,358.17	-779.59	-350.03	797.11	0.34	-0.11	-56.11
5,559.00	0.10	242.60	5,452.17	-779.77	-350.31	797.30	0.21	-0.21	7.34
5,653.00	0.10	126.60	5,546.17	-779.85	-350.31	797.39	0.18	0.00	-123.40
5,733.00	0.10	152.20	5,626.17	-779.96	-350.22	797.48	0.06	0.00	32.00
5,841.00	0.10	358.70	5,734.17	-779.94	-350.18	797.47	0.18	0.00	-142.13
5,934.00	0.20	310.70	5,827.17	-779.76	-350.31	797.29	0.16	0.11	-51.61
6,028.00	0.20	264.70	5,921.17	-779.67	-350.59	797.22	0.17	0.00	-48.94
6,122.00	0.50	295.20	6,015.17	-779.51	-351.13	797.08	0.36	0.32	32.45
6,216.00	0.60	273.40	6,109.16	-779.30	-351.99	796.93	0.24	0.11	-23.19
6,310.00	0.90	290.60	6,203.16	-779.01	-353.17	796.70	0.40	0.32	18.30
6,405.00	0.90	285.50	6,298.14	-778.55	-354.59	796.32	0.08	0.00	-5.37
6,499.00	0.90	278.60	6,392.13	-778.24	-356.03	796.08	0.12	0.00	-7.34
6,593.00	0.90	274.80	6,486.12	-778.07	-357.50	795.99	0.06	0.00	-4.04
6,656.00	0.90	279.60	6,549.11	-777.95	-358.48	795.92	0.12	0.00	7.62
6,774.00	1.10	270.60	6,667.10	-777.78	-360.53	795.86	0.22	0.17	-7.63
6,868.00	0.80	270.10	6,761.08	-777.77	-362.08	795.93	0.32	-0.32	-0.53
6,936.00	1.50	217.60	6,829.07	-778.47	-363.10	796.69	1.76	1.03	-77.21
6,962.00	4.60	207.00	6,855.03	-779.67	-363.78	797.93	12.07	11.92	-40.77
7,009.00	12.00	197.30	6,901.51	-786.03	-366.09	804.39	15.97	15.74	-20.64
7,055.00	19.60	188.30	6,945.74	-798.25	-368.63	816.73	17.31	16.52	-19.57
7,102.00	26.30	183.60	6,989.00	-816.46	-370.43	835.01	14.77	14.26	-10.00
7,145.00	31.42	182.49	7,026.65	-837.18	-371.51	855.76	11.98	11.91	-2.59
N. Hard Line Crossing									
7,149.00	31.90	182.40	7,030.05	-839.28	-371.60	857.86	11.98	11.92	-2.17
7,196.00	37.10	182.50	7,068.77	-865.87	-372.74	884.47	11.06	11.06	0.21
7,243.00	41.70	177.80	7,105.09	-895.67	-372.76	914.24	11.66	9.79	-10.00
7,290.00	45.70	174.00	7,139.07	-928.04	-370.40	946.43	10.18	8.51	-8.09

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
7,337.00	49.40	174.80	7,170.79	-962.55	-367.02	980.71	7.97	7.87	1.70
7,384.00	52.00	178.10	7,200.56	-998.84	-364.79	1,016.83	7.75	5.53	7.02
7,431.00	54.50	181.60	7,228.68	-1,036.48	-364.71	1,054.42	7.99	5.32	7.45
7,478.00	58.60	183.40	7,254.59	-1,075.65	-366.44	1,093.62	9.29	8.72	3.83
7,525.00	66.10	182.70	7,276.38	-1,117.19	-368.64	1,135.23	16.01	15.96	-1.49
7,572.00	74.00	182.30	7,292.40	-1,161.30	-370.56	1,179.37	16.83	16.81	-0.85
7,619.00	79.80	182.70	7,303.05	-1,207.01	-372.56	1,225.12	12.37	12.34	0.85
7,649.00	82.60	182.90	7,307.64	-1,236.62	-374.01	1,254.77	9.36	9.33	0.67
7,731.00	88.20	183.40	7,314.22	-1,318.20	-378.50	1,336.47	6.86	6.83	0.61
7,826.00	90.30	182.30	7,315.46	-1,413.07	-383.22	1,431.45	2.50	2.21	-1.16
7,920.00	89.40	181.10	7,315.71	-1,507.02	-386.01	1,525.43	1.60	-0.96	-1.28
8,013.00	90.10	183.30	7,316.11	-1,599.95	-389.58	1,618.41	2.48	0.75	2.37
8,108.00	89.20	181.50	7,316.69	-1,694.86	-393.56	1,713.39	2.12	-0.95	-1.89
8,201.00	89.20	180.10	7,317.99	-1,787.83	-394.86	1,806.31	1.51	0.00	-1.51
8,296.00	88.20	178.90	7,320.15	-1,882.80	-394.03	1,901.10	1.64	-1.05	-1.26
8,389.00	91.70	181.50	7,320.23	-1,975.78	-394.35	1,993.96	4.69	3.76	2.80
8,483.00	91.70	181.90	7,317.44	-2,069.70	-397.14	2,087.90	0.43	0.00	0.43
8,577.00	89.40	178.20	7,316.54	-2,163.67	-397.22	2,181.74	4.63	-2.45	-3.94
8,671.00	89.00	178.00	7,317.85	-2,257.61	-394.11	2,275.38	0.48	-0.43	-0.21
8,765.00	88.90	178.20	7,319.57	-2,351.54	-390.99	2,369.01	0.24	-0.11	0.21
8,860.00	92.10	181.60	7,318.74	-2,446.51	-390.82	2,463.84	4.91	3.37	3.58
8,954.00	90.00	179.80	7,317.02	-2,540.48	-391.97	2,557.74	2.94	-2.23	-1.91
9,048.00	86.90	177.50	7,319.56	-2,634.40	-389.76	2,651.41	4.11	-3.30	-2.45
9,142.00	88.90	179.90	7,323.01	-2,728.30	-387.63	2,745.06	3.32	2.13	2.55
9,235.00	93.20	183.30	7,321.30	-2,821.22	-390.22	2,837.98	5.89	4.62	3.66
9,329.00	90.80	181.30	7,318.02	-2,915.07	-393.99	2,931.91	3.32	-2.55	-2.13
9,423.00	89.50	178.70	7,317.77	-3,009.06	-393.99	3,025.76	3.09	-1.38	-2.77
9,517.00	88.60	178.30	7,319.33	-3,103.01	-391.53	3,119.45	1.05	-0.96	-0.43
9,612.00	92.10	180.40	7,318.75	-3,197.99	-390.45	3,214.23	4.30	3.68	2.21
9,705.00	88.80	178.60	7,318.02	-3,290.96	-389.64	3,307.03	4.04	-3.55	-1.94
9,799.00	90.50	183.00	7,318.60	-3,384.93	-390.96	3,400.93	5.02	1.81	4.68
9,893.00	91.10	183.30	7,317.28	-3,478.77	-396.12	3,494.92	0.71	0.64	0.32
9,987.00	87.90	182.20	7,318.11	-3,572.65	-400.63	3,588.90	3.60	-3.40	-1.17
10,081.00	90.70	184.70	7,319.25	-3,666.45	-406.28	3,682.88	3.99	2.98	2.66
10,175.00	88.50	182.80	7,319.91	-3,760.24	-412.43	3,776.86	3.09	-2.34	-2.02
10,269.00	90.10	184.70	7,321.06	-3,854.03	-418.58	3,870.84	2.64	1.70	2.02
10,363.00	89.40	182.60	7,321.47	-3,947.83	-424.56	3,964.83	2.35	-0.74	-2.23
10,457.00	88.60	182.40	7,323.11	-4,041.72	-428.66	4,058.81	0.88	-0.85	-0.21
10,551.00	90.30	184.40	7,324.01	-4,135.55	-434.24	4,152.79	2.79	1.81	2.13
10,645.00	90.70	181.70	7,323.19	-4,229.40	-439.24	4,246.78	2.90	0.43	-2.87
10,740.00	87.50	179.40	7,324.68	-4,324.37	-440.15	4,341.66	4.15	-3.37	-2.42
10,834.00	90.60	182.70	7,326.24	-4,418.31	-441.87	4,435.56	4.82	3.30	3.51
10,928.00	88.80	181.60	7,326.73	-4,512.24	-445.40	4,529.55	2.24	-1.91	-1.17

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
11,022.00	87.90	180.80	7,329.44	-4,606.18	-447.37	4,623.46	1.28	-0.96	-0.85
11,116.00	92.00	181.50	7,329.52	-4,700.14	-449.25	4,717.38	4.42	4.36	0.74
11,210.00	89.70	179.70	7,328.13	-4,794.11	-450.24	4,811.28	3.11	-2.45	-1.91
11,304.00	90.20	180.90	7,328.21	-4,888.11	-450.73	4,905.17	1.38	0.53	1.28
11,398.00	87.10	178.30	7,330.42	-4,982.06	-450.08	4,998.95	4.30	-3.30	-2.77
11,493.00	89.60	178.70	7,333.16	-5,076.98	-447.59	5,093.61	2.67	2.63	0.42
11,587.00	87.00	176.40	7,335.95	-5,170.84	-443.58	5,187.12	3.69	-2.77	-2.45
11,681.00	92.80	180.30	7,336.11	-5,264.74	-440.87	5,280.74	7.43	6.17	4.15
11,776.00	92.50	179.70	7,331.72	-5,359.64	-440.87	5,375.51	0.71	-0.32	-0.63
11,870.00	89.60	178.50	7,330.00	-5,453.60	-439.39	5,469.26	3.34	-3.09	-1.28
11,964.00	87.60	179.00	7,332.29	-5,547.55	-437.34	5,562.96	2.19	-2.13	0.53
12,058.00	91.10	181.10	7,333.36	-5,641.52	-437.43	5,656.80	4.34	3.72	2.23
12,151.00	89.12	181.30	7,333.18	-5,734.49	-439.37	5,749.75	2.14	-2.13	0.21
Section Line Crossing									
12,152.00	89.10	181.30	7,333.20	-5,735.49	-439.40	5,750.75	2.14	-2.13	0.21
12,246.00	91.10	183.00	7,333.03	-5,829.42	-442.92	5,844.73	2.79	2.13	1.81
12,341.00	90.90	185.00	7,331.37	-5,924.17	-449.55	5,939.70	2.12	-0.21	2.11
12,434.00	88.50	183.70	7,331.86	-6,016.89	-456.60	6,032.66	2.93	-2.58	-1.40
12,529.00	86.80	184.40	7,335.76	-6,111.57	-463.30	6,127.56	1.93	-1.79	0.74
12,623.00	86.90	184.70	7,340.92	-6,205.13	-470.75	6,221.39	0.34	0.11	0.32
12,717.00	92.40	185.40	7,341.50	-6,298.73	-479.02	6,315.29	5.90	5.85	0.74
12,811.00	91.10	182.60	7,338.63	-6,392.45	-485.57	6,409.23	3.28	-1.38	-2.98
12,905.00	90.60	184.30	7,337.23	-6,486.26	-491.23	6,503.21	1.88	-0.53	1.81
13,000.00	89.50	182.50	7,337.15	-6,581.09	-496.86	6,598.20	2.22	-1.16	-1.89
13,094.00	89.30	179.80	7,338.13	-6,675.06	-498.75	6,692.14	2.88	-0.21	-2.87
13,187.00	92.20	180.90	7,336.92	-6,768.03	-499.32	6,785.01	3.33	3.12	1.18
13,282.00	89.80	180.10	7,335.26	-6,863.01	-500.14	6,879.90	2.66	-2.53	-0.84
13,376.00	90.90	180.20	7,334.68	-6,957.01	-500.39	6,973.77	1.18	1.17	0.11
13,470.00	90.40	180.20	7,333.62	-7,051.00	-500.72	7,067.65	0.53	-0.53	0.00
13,564.00	89.80	179.30	7,333.45	-7,145.00	-500.31	7,161.49	1.15	-0.64	-0.96
13,658.00	91.10	180.50	7,332.71	-7,238.99	-500.14	7,255.35	1.88	1.38	1.28
13,752.00	90.80	179.40	7,331.16	-7,332.97	-500.06	7,349.19	1.21	-0.32	-1.17
13,846.00	90.10	178.10	7,330.42	-7,426.95	-498.01	7,442.92	1.57	-0.74	-1.38
13,939.00	91.50	179.50	7,329.12	-7,519.91	-496.06	7,535.65	2.13	1.51	1.51
14,034.00	90.10	181.90	7,327.79	-7,614.89	-497.23	7,630.56	2.92	-1.47	2.53
14,127.00	91.50	182.60	7,326.49	-7,707.80	-500.88	7,723.54	1.68	1.51	0.75
14,221.00	88.50	182.40	7,326.49	-7,801.70	-504.98	7,817.52	3.20	-3.19	-0.21
14,315.00	89.20	182.80	7,328.38	-7,895.59	-509.24	7,911.50	0.86	0.74	0.43
14,409.00	92.80	184.50	7,326.74	-7,989.36	-515.22	8,005.46	4.24	3.83	1.81
14,503.00	89.40	181.20	7,324.94	-8,083.20	-519.89	8,099.41	5.04	-3.62	-3.51
14,597.00	90.60	182.10	7,324.94	-8,177.16	-522.60	8,193.38	1.60	1.28	0.96
14,691.00	90.40	182.10	7,324.11	-8,271.09	-526.04	8,287.37	0.21	-0.21	0.00
14,785.00	90.30	182.20	7,323.54	-8,365.03	-529.57	8,381.35	0.15	-0.11	0.11
14,879.00	92.70	184.60	7,321.08	-8,458.81	-535.14	8,475.31	3.61	2.55	2.55

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
14,974.00	89.90	182.80	7,318.92	-8,553.58	-541.27	8,570.26	3.50	-2.95	-1.89
15,069.00	89.60	182.90	7,319.34	-8,648.46	-545.99	8,665.26	0.33	-0.32	0.11
15,163.00	89.50	183.40	7,320.08	-8,742.32	-551.15	8,759.26	0.54	-0.11	0.53
15,257.00	90.30	181.70	7,320.24	-8,836.22	-555.34	8,853.25	2.00	0.85	-1.81
15,351.00	88.30	180.10	7,321.39	-8,930.19	-556.81	8,947.17	2.72	-2.13	-1.70
15,445.00	91.60	181.60	7,321.47	-9,024.17	-558.21	9,041.08	3.86	3.51	1.60
15,539.00	90.00	179.50	7,320.16	-9,118.14	-559.11	9,134.98	2.81	-1.70	-2.23
15,633.00	90.30	178.80	7,319.91	-9,212.13	-557.71	9,228.76	0.81	0.32	-0.74
15,727.00	91.40	178.20	7,318.52	-9,306.09	-555.25	9,322.45	1.33	1.17	-0.64
15,821.00	89.30	177.00	7,317.94	-9,400.00	-551.32	9,416.02	2.57	-2.23	-1.28
15,916.00	91.60	177.60	7,317.20	-9,494.88	-546.84	9,510.53	2.50	2.42	0.63
16,010.00	89.70	180.30	7,316.13	-9,588.85	-545.12	9,604.27	3.51	-2.02	2.87
16,104.00	91.40	181.80	7,315.23	-9,682.82	-546.84	9,698.20	2.41	1.81	1.60
16,198.00	91.00	180.90	7,313.26	-9,776.77	-549.06	9,792.14	1.05	-0.43	-0.96
16,291.00	89.50	181.40	7,312.86	-9,869.75	-550.92	9,885.08	1.70	-1.61	0.54
16,385.00	91.90	183.60	7,311.71	-9,963.64	-555.02	9,979.06	3.46	2.55	2.34
16,479.00	91.10	183.20	7,309.25	-10,057.44	-560.60	10,073.02	0.95	-0.85	-0.43
16,573.00	90.10	176.30	7,308.26	-10,151.38	-560.19	10,166.80	7.42	-1.06	-7.34
16,667.00	89.10	179.50	7,308.92	-10,245.30	-556.74	10,260.41	3.57	-1.06	3.40
16,761.00	89.70	181.00	7,309.90	-10,339.29	-557.15	10,354.29	1.72	0.64	1.60
16,855.00	89.50	181.50	7,310.56	-10,433.27	-559.20	10,448.24	0.57	-0.21	0.53
16,949.00	91.90	184.60	7,309.41	-10,527.11	-564.20	10,542.21	4.17	2.55	3.30
17,043.00	91.70	184.80	7,306.46	-10,620.74	-571.90	10,636.13	0.30	-0.21	0.21
17,136.00	90.20	183.10	7,304.91	-10,713.50	-578.31	10,729.10	2.44	-1.61	-1.83
17,230.00	88.40	182.70	7,306.06	-10,807.37	-583.06	10,823.09	1.96	-1.91	-0.43
17,311.00	90.20	184.80	7,307.05	-10,888.19	-588.36	10,904.07	3.41	2.22	2.59
Last CES Survey									
17,322.00	90.20	184.80	7,307.01	-10,899.15	-589.28	10,915.06	0.00	0.00	0.00
S. Hard Line Crossing									
17,370.00	90.20	184.80	7,306.85	-10,946.98	-593.29	10,963.04	0.00	0.00	0.00
Actual BHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
907.00	906.98	0.14	-1.21	Last Gyro Survey
4,590.00	4,486.33	-738.13	-331.79	Section Line Crossing
7,145.00	7,026.65	-837.18	-371.51	N. Hard Line Crossing
12,151.00	7,333.18	-5,734.49	-439.37	Section Line Crossing
17,311.00	7,307.05	-10,888.19	-588.36	Last CES Survey
17,322.00	7,307.01	-10,899.15	-589.28	S. Hard Line Crossing
17,370.00	7,306.85	-10,946.98	-593.29	Actual BHL

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Checked By: _____	Approved By: _____	Date: _____
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State of Texas
County of Reagan

I, Hillary Grimm, certify that; I am employed by Cathedral Energy Services; that I did on the day(s) of 06/22/2019 through 07/07/2019 conduct or supervise the taking of a directional MWD survey from a depth of 907 feet to a depth of 17370 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Cathedral Energy Services; that I am authorized and qualified to make this report; that this survey was conducted at the request of Sable Permian Resources, LLC for the University Owens 1-6 Alloc 33 #33HK. Well API No. 42-383-40619 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 Cathedral Energy Services.

CATHEDRAL ENERGY SERVICES

6622 Willow Brook Park
Houston, Texas 77066

281.440.1010 Office
877.825.1002 Toll-Free
281.440.1025 Fax

CathedralEnergyServices.com

Drilling + Completions

Hillary Grimm
Administrative Assistant



END OF WELL REPORT

Reagan County, TX

University Owens 1-6 Alloc 33 #33HK

Rig: Ensign 786

Job #198135

CATHEDRAL ENERGY SERVICES

4701 United Drive

Oklahoma City, OK 73179

Office Phone: 405.261.6011



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Section 2	Drilling Reports
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CATHEDRAL ENERGY SERVICES

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Section 1

Final Surveys

CATHEDRAL ENERGY SERVICES

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Oklahoma City, OK 73179
Office Phone: 405.261.6011





Sable Permian Resources

Reagan County, TX (NAD 27)

Sec 235 V Pad

University Owens 1-6 Alloc 33 #33HK

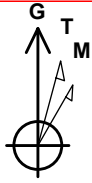
HZ [481237]

Design: FINAL

Standard Survey Report

06 July, 2019





Total Azimuth to Grid North
 True North: 0.50°
 Magnetic North: 6.03°

Magnetic Field
 Strength: 47315.4nT
 Dip Angle: 59.45°
 Date: 6/24/2019
 Model: HDGM_FILE

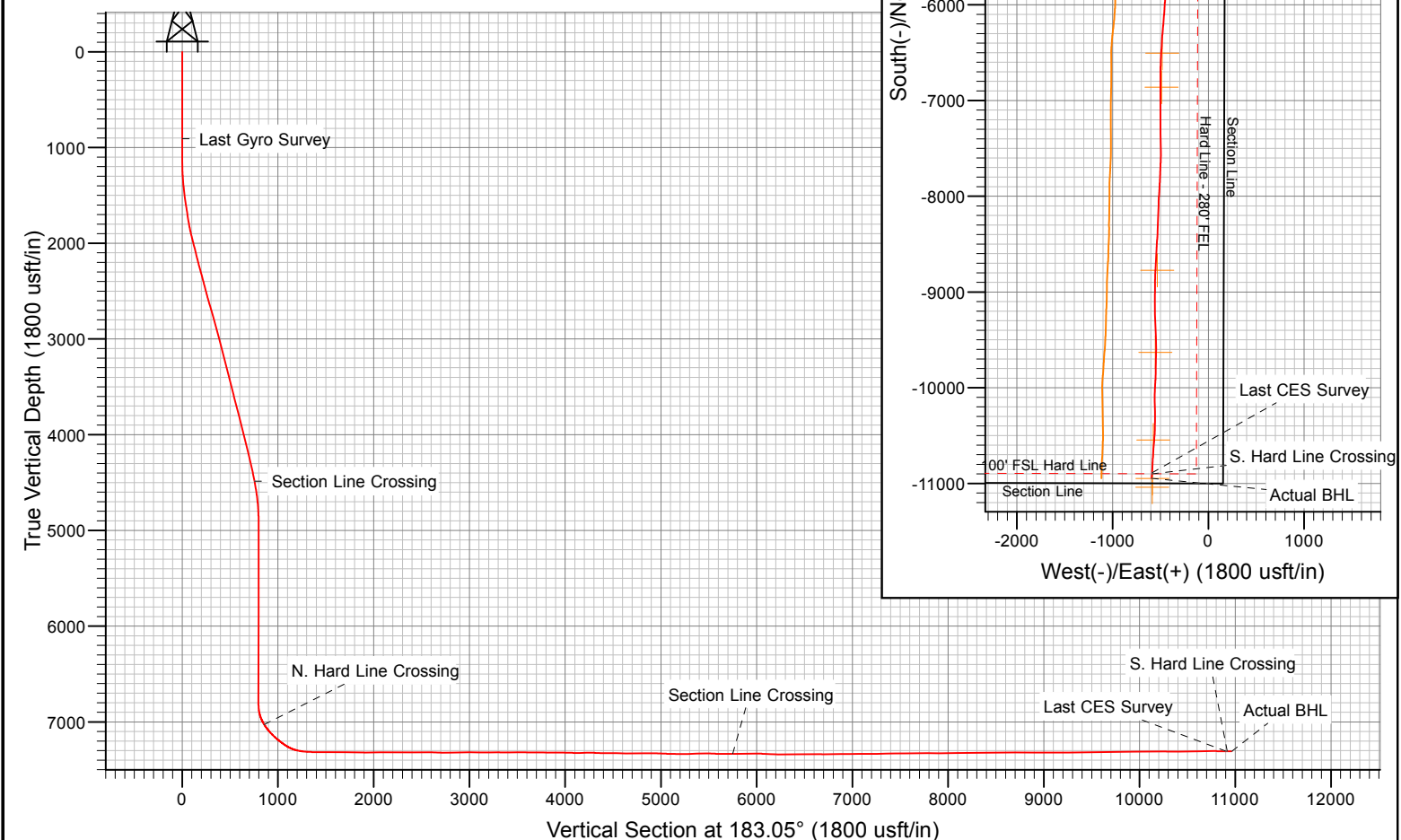
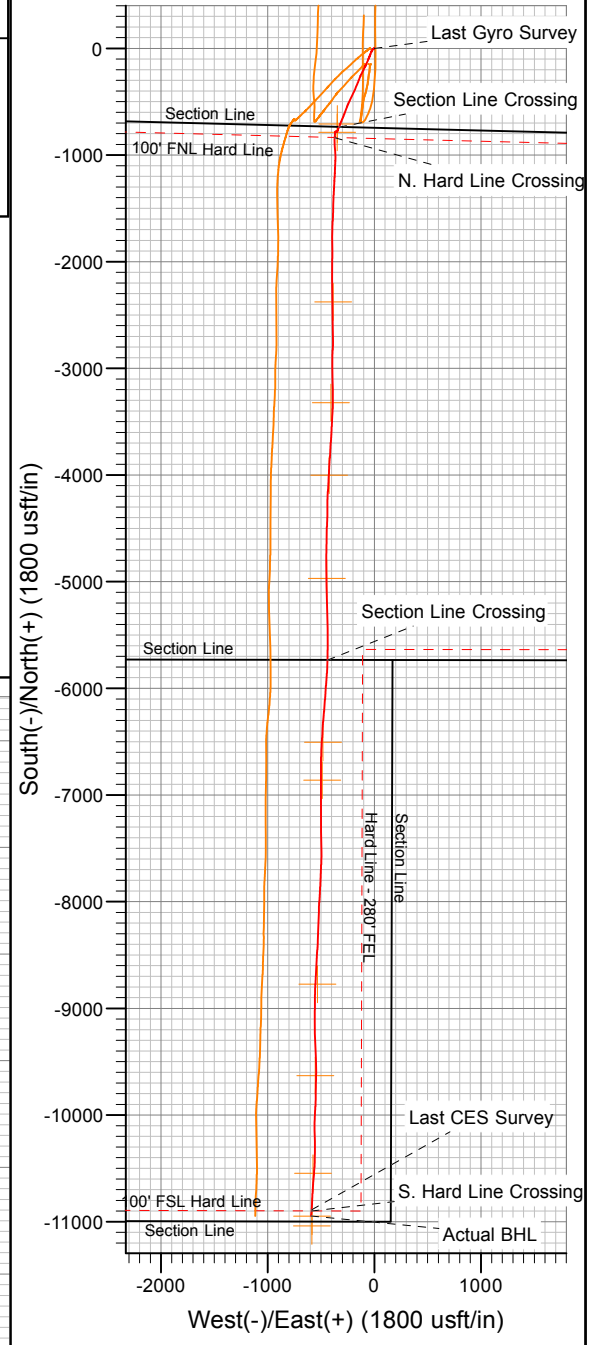
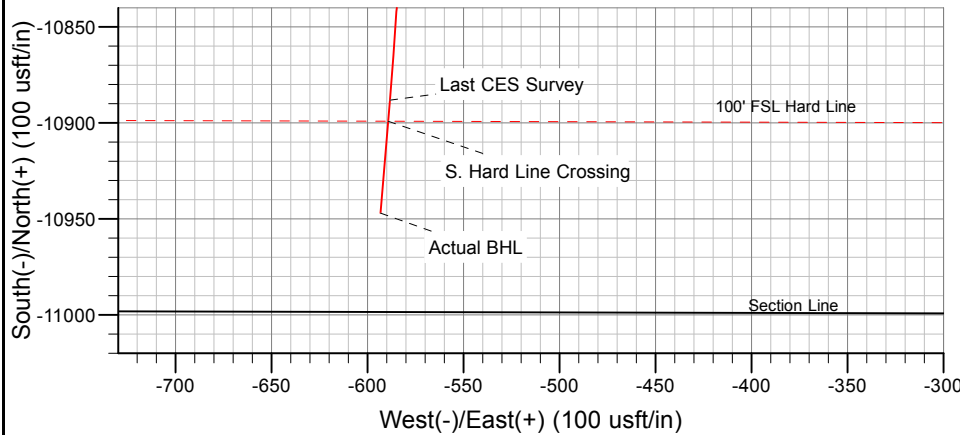
Gravity = 0.9985°
 +N/-S 0.00 +E/-W 0.00
 Northing 545233.17 Easting 1696938.77
 Ground Elevation: 2702.00
 Latitude 31.162229 Longitude -101.302296

LP Target Line
 89.97° INC @ 6316.75' TVD @ 0' VS
 5' Up / Down & 30' Left / Right

Actual Bottom Hole Location
 52' FSL / 748' FEL (Sec 01)
 X: 1696345.48 Y: 534286.19

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Annotation
907.00	0.43	265.96	906.98	0.14	-1.21	-0.07	Last Gyro Survey
4590.00	11.23	202.90	4486.33	-738.13	-331.79	754.74	Section Line Crossing
7145.00	31.42	182.49	7026.65	-837.18	-371.51	855.76	N. Hard Line Crossing
12151.00	89.12	181.30	7333.18	-5734.49	-439.37	5749.75	Section Line Crossing
17311.00	90.20	184.80	7307.05	-10888.19	-588.36	10904.07	Last CES Survey
17322.00	90.20	184.80	7307.01	-10899.15	-589.28	10915.06	S. Hard Line Crossing
17370.00	90.20	184.80	7306.85	-10946.98	-593.29	10963.04	Actual BHL



Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	Reagan County, TX (NAD 27)		
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		Sec 235 V Pad, Gravity = 0.9985°			
Site Position:		Northing:	545,085.06 usft	Latitude:	31.161820
From:	Map	Easting:	1,696,864.86 usft	Longitude:	-101.302529
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.50 °

Well	University Owens 1-6 Alloc 33 #33HK					
Well Position	+N/-S	0.00 usft	Northing:	545,233.17 usft	Latitude:	31.162229
	+E/-W	0.00 usft	Easting:	1,696,938.77 usft	Longitude:	-101.302296
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,702.00 usft

Wellbore	HZ [481237]				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	6/24/2019	5.53	59.45	47,315.40000000

Design	FINAL				
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	183.05	

Survey Program	Date	7/6/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
81.00	907.00	Surface Gyros (HZ [481237])	VESSI_GYROFLEX	VESSI Gyroflex Gyro	
1,045.00	17,370.00	CES MWD (HZ [481237])	MWD+HDGM	OWSG MWD + HDGM	

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	
81.00	0.55	94.27	81.00	-0.03	0.39	0.01	0.68	0.68	0.00	
131.00	0.09	36.25	131.00	-0.02	0.65	-0.02	1.02	-0.92	-116.04	
181.00	0.30	49.59	181.00	0.10	0.77	-0.14	0.43	0.42	26.68	
231.00	0.32	24.84	231.00	0.31	0.93	-0.36	0.27	0.04	-49.50	
281.00	0.28	345.17	281.00	0.56	0.96	-0.61	0.41	-0.08	-79.34	
331.00	0.38	244.92	331.00	0.61	0.78	-0.65	1.02	0.20	-200.50	
381.00	0.40	221.76	380.99	0.41	0.51	-0.43	0.32	0.04	-46.32	
431.00	0.28	280.67	430.99	0.30	0.27	-0.31	0.70	-0.24	117.82	
481.00	0.30	172.49	480.99	0.19	0.17	-0.20	0.94	0.04	-216.36	

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
531.00	0.29	145.22	530.99	-0.04	0.26	0.03	0.28	-0.02	-54.54
581.00	0.34	51.64	580.99	-0.06	0.45	0.03	0.92	0.10	-187.16
631.00	0.34	337.24	630.99	0.17	0.51	-0.20	0.82	0.00	-148.80
681.00	0.57	265.43	680.99	0.29	0.20	-0.30	1.13	0.46	-143.62
731.00	0.42	227.37	730.99	0.15	-0.18	-0.14	0.71	-0.30	-76.12
781.00	0.25	276.63	780.99	0.04	-0.42	-0.01	0.64	-0.34	98.52
831.00	0.47	307.84	830.99	0.17	-0.69	-0.14	0.57	0.44	62.42
881.00	0.45	238.72	880.99	0.20	-1.02	-0.14	1.04	-0.04	-138.24
907.00	0.43	265.96	906.98	0.14	-1.21	-0.07	0.80	-0.08	104.77
Last Gyro Survey									
1,045.00	0.80	254.90	1,044.98	-0.15	-2.65	0.29	0.28	0.27	-8.01
1,140.00	1.10	256.80	1,139.96	-0.53	-4.18	0.75	0.32	0.32	2.00
1,234.00	2.50	234.80	1,233.92	-1.92	-6.74	2.27	1.63	1.49	-23.40
1,327.00	5.10	222.80	1,326.70	-6.12	-11.20	6.71	2.91	2.80	-12.90
1,421.00	7.30	217.30	1,420.15	-13.94	-17.66	14.86	2.42	2.34	-5.85
1,515.00	8.30	207.80	1,513.28	-24.69	-24.45	25.96	1.73	1.06	-10.11
1,609.00	9.30	202.10	1,606.18	-37.73	-30.47	39.30	1.41	1.06	-6.06
1,703.00	9.00	201.10	1,698.98	-51.63	-35.97	53.47	0.36	-0.32	-1.06
1,797.00	10.60	200.30	1,791.61	-66.60	-41.62	68.72	1.71	1.70	-0.85
1,891.00	13.70	202.60	1,883.49	-84.99	-48.90	87.47	3.34	3.30	2.45
1,985.00	15.40	203.10	1,974.47	-106.75	-58.07	109.68	1.81	1.81	0.53
2,079.00	15.10	203.60	2,065.16	-129.45	-67.87	132.87	0.35	-0.32	0.53
2,173.00	14.60	204.80	2,156.02	-151.42	-77.74	155.34	0.62	-0.53	1.28
2,267.00	16.40	205.30	2,246.60	-174.17	-88.38	178.63	1.92	1.91	0.53
2,361.00	16.60	205.90	2,336.73	-198.25	-99.92	203.29	0.28	0.21	0.64
2,455.00	16.30	206.90	2,426.88	-222.09	-111.75	227.72	0.44	-0.32	1.06
2,549.00	15.90	207.00	2,517.19	-245.33	-123.57	251.56	0.43	-0.43	0.11
2,643.00	16.90	201.90	2,607.37	-269.48	-134.51	276.26	1.86	1.06	-5.43
2,737.00	17.10	200.80	2,697.27	-295.08	-144.51	302.35	0.40	0.21	-1.17
2,832.00	16.70	201.70	2,788.16	-320.82	-154.52	328.58	0.50	-0.42	0.95
2,925.00	16.40	202.60	2,877.31	-345.35	-164.51	353.62	0.42	-0.32	0.97
3,019.00	15.90	203.40	2,967.60	-369.42	-174.72	378.19	0.58	-0.53	0.85
3,113.00	15.40	203.90	3,058.12	-392.65	-184.89	401.93	0.55	-0.53	0.53
3,207.00	15.30	204.80	3,148.76	-415.32	-195.15	425.11	0.27	-0.11	0.96
3,301.00	14.90	205.70	3,239.52	-437.47	-205.59	447.79	0.49	-0.43	0.96
3,356.00	15.30	205.70	3,292.62	-450.38	-211.81	461.01	0.73	0.73	0.00
3,395.00	15.90	205.30	3,330.18	-459.84	-216.32	470.70	1.56	1.54	-1.03
3,489.00	16.00	205.50	3,420.56	-483.18	-227.40	494.59	0.12	0.11	0.21
3,583.00	15.30	206.10	3,511.08	-506.01	-238.43	517.98	0.76	-0.74	0.64
3,677.00	14.40	202.40	3,601.94	-527.95	-248.34	540.42	1.39	-0.96	-3.94
3,771.00	15.50	200.70	3,692.76	-550.51	-257.24	563.42	1.26	1.17	-1.81
3,865.00	15.40	200.90	3,783.36	-573.92	-266.13	587.27	0.12	-0.11	0.21
3,959.00	15.40	200.60	3,873.98	-597.26	-274.97	611.05	0.08	0.00	-0.32

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
4,052.00	14.60	200.40	3,963.81	-619.81	-283.40	634.01	0.86	-0.86	-0.22
4,147.00	14.20	202.80	4,055.83	-641.77	-292.09	656.40	0.76	-0.42	2.53
4,241.00	14.80	203.00	4,146.84	-663.45	-301.25	678.54	0.64	0.64	0.21
4,335.00	14.20	201.50	4,237.84	-685.23	-310.17	700.76	0.75	-0.64	-1.60
4,429.00	13.50	201.90	4,329.11	-706.14	-318.49	722.08	0.75	-0.74	0.43
4,523.00	12.30	202.90	4,420.73	-725.54	-326.48	741.89	1.30	-1.28	1.06
4,590.00	11.23	202.90	4,486.33	-738.13	-331.79	754.74	1.60	-1.60	0.00
Section Line Crossing									
4,617.00	10.80	202.90	4,512.83	-742.88	-333.80	759.59	1.60	-1.60	0.00
4,712.00	9.00	201.60	4,606.41	-757.99	-340.00	775.01	1.91	-1.89	-1.37
4,806.00	6.00	198.40	4,699.60	-769.49	-344.26	786.72	3.22	-3.19	-3.40
4,900.00	3.50	206.10	4,793.27	-776.73	-347.07	794.10	2.74	-2.66	8.19
4,994.00	1.10	207.80	4,887.18	-780.10	-348.75	797.56	2.55	-2.55	1.81
5,088.00	0.10	56.40	4,981.18	-780.86	-349.11	798.33	1.26	-1.06	-161.06
5,182.00	0.40	19.80	5,075.18	-780.50	-348.93	797.96	0.35	0.32	-38.94
5,277.00	0.40	323.70	5,170.18	-779.92	-349.01	797.39	0.40	0.00	-59.05
5,370.00	0.40	289.00	5,263.17	-779.56	-349.51	797.05	0.26	0.00	-37.31
5,465.00	0.30	235.70	5,358.17	-779.59	-350.03	797.11	0.34	-0.11	-56.11
5,559.00	0.10	242.60	5,452.17	-779.77	-350.31	797.30	0.21	-0.21	7.34
5,653.00	0.10	126.60	5,546.17	-779.85	-350.31	797.39	0.18	0.00	-123.40
5,733.00	0.10	152.20	5,626.17	-779.96	-350.22	797.48	0.06	0.00	32.00
5,841.00	0.10	358.70	5,734.17	-779.94	-350.18	797.47	0.18	0.00	-142.13
5,934.00	0.20	310.70	5,827.17	-779.76	-350.31	797.29	0.16	0.11	-51.61
6,028.00	0.20	264.70	5,921.17	-779.67	-350.59	797.22	0.17	0.00	-48.94
6,122.00	0.50	295.20	6,015.17	-779.51	-351.13	797.08	0.36	0.32	32.45
6,216.00	0.60	273.40	6,109.16	-779.30	-351.99	796.93	0.24	0.11	-23.19
6,310.00	0.90	290.60	6,203.16	-779.01	-353.17	796.70	0.40	0.32	18.30
6,405.00	0.90	285.50	6,298.14	-778.55	-354.59	796.32	0.08	0.00	-5.37
6,499.00	0.90	278.60	6,392.13	-778.24	-356.03	796.08	0.12	0.00	-7.34
6,593.00	0.90	274.80	6,486.12	-778.07	-357.50	795.99	0.06	0.00	-4.04
6,656.00	0.90	279.60	6,549.11	-777.95	-358.48	795.92	0.12	0.00	7.62
6,774.00	1.10	270.60	6,667.10	-777.78	-360.53	795.86	0.22	0.17	-7.63
6,868.00	0.80	270.10	6,761.08	-777.77	-362.08	795.93	0.32	-0.32	-0.53
6,936.00	1.50	217.60	6,829.07	-778.47	-363.10	796.69	1.76	1.03	-77.21
6,962.00	4.60	207.00	6,855.03	-779.67	-363.78	797.93	12.07	11.92	-40.77
7,009.00	12.00	197.30	6,901.51	-786.03	-366.09	804.39	15.97	15.74	-20.64
7,055.00	19.60	188.30	6,945.74	-798.25	-368.63	816.73	17.31	16.52	-19.57
7,102.00	26.30	183.60	6,989.00	-816.46	-370.43	835.01	14.77	14.26	-10.00
7,145.00	31.42	182.49	7,026.65	-837.18	-371.51	855.76	11.98	11.91	-2.59
N. Hard Line Crossing									
7,149.00	31.90	182.40	7,030.05	-839.28	-371.60	857.86	11.98	11.92	-2.17
7,196.00	37.10	182.50	7,068.77	-865.87	-372.74	884.47	11.06	11.06	0.21
7,243.00	41.70	177.80	7,105.09	-895.67	-372.76	914.24	11.66	9.79	-10.00
7,290.00	45.70	174.00	7,139.07	-928.04	-370.40	946.43	10.18	8.51	-8.09

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
7,337.00	49.40	174.80	7,170.79	-962.55	-367.02	980.71	7.97	7.87	1.70
7,384.00	52.00	178.10	7,200.56	-998.84	-364.79	1,016.83	7.75	5.53	7.02
7,431.00	54.50	181.60	7,228.68	-1,036.48	-364.71	1,054.42	7.99	5.32	7.45
7,478.00	58.60	183.40	7,254.59	-1,075.65	-366.44	1,093.62	9.29	8.72	3.83
7,525.00	66.10	182.70	7,276.38	-1,117.19	-368.64	1,135.23	16.01	15.96	-1.49
7,572.00	74.00	182.30	7,292.40	-1,161.30	-370.56	1,179.37	16.83	16.81	-0.85
7,619.00	79.80	182.70	7,303.05	-1,207.01	-372.56	1,225.12	12.37	12.34	0.85
7,649.00	82.60	182.90	7,307.64	-1,236.62	-374.01	1,254.77	9.36	9.33	0.67
7,731.00	88.20	183.40	7,314.22	-1,318.20	-378.50	1,336.47	6.86	6.83	0.61
7,826.00	90.30	182.30	7,315.46	-1,413.07	-383.22	1,431.45	2.50	2.21	-1.16
7,920.00	89.40	181.10	7,315.71	-1,507.02	-386.01	1,525.43	1.60	-0.96	-1.28
8,013.00	90.10	183.30	7,316.11	-1,599.95	-389.58	1,618.41	2.48	0.75	2.37
8,108.00	89.20	181.50	7,316.69	-1,694.86	-393.56	1,713.39	2.12	-0.95	-1.89
8,201.00	89.20	180.10	7,317.99	-1,787.83	-394.86	1,806.31	1.51	0.00	-1.51
8,296.00	88.20	178.90	7,320.15	-1,882.80	-394.03	1,901.10	1.64	-1.05	-1.26
8,389.00	91.70	181.50	7,320.23	-1,975.78	-394.35	1,993.96	4.69	3.76	2.80
8,483.00	91.70	181.90	7,317.44	-2,069.70	-397.14	2,087.90	0.43	0.00	0.43
8,577.00	89.40	178.20	7,316.54	-2,163.67	-397.22	2,181.74	4.63	-2.45	-3.94
8,671.00	89.00	178.00	7,317.85	-2,257.61	-394.11	2,275.38	0.48	-0.43	-0.21
8,765.00	88.90	178.20	7,319.57	-2,351.54	-390.99	2,369.01	0.24	-0.11	0.21
8,860.00	92.10	181.60	7,318.74	-2,446.51	-390.82	2,463.84	4.91	3.37	3.58
8,954.00	90.00	179.80	7,317.02	-2,540.48	-391.97	2,557.74	2.94	-2.23	-1.91
9,048.00	86.90	177.50	7,319.56	-2,634.40	-389.76	2,651.41	4.11	-3.30	-2.45
9,142.00	88.90	179.90	7,323.01	-2,728.30	-387.63	2,745.06	3.32	2.13	2.55
9,235.00	93.20	183.30	7,321.30	-2,821.22	-390.22	2,837.98	5.89	4.62	3.66
9,329.00	90.80	181.30	7,318.02	-2,915.07	-393.99	2,931.91	3.32	-2.55	-2.13
9,423.00	89.50	178.70	7,317.77	-3,009.06	-393.99	3,025.76	3.09	-1.38	-2.77
9,517.00	88.60	178.30	7,319.33	-3,103.01	-391.53	3,119.45	1.05	-0.96	-0.43
9,612.00	92.10	180.40	7,318.75	-3,197.99	-390.45	3,214.23	4.30	3.68	2.21
9,705.00	88.80	178.60	7,318.02	-3,290.96	-389.64	3,307.03	4.04	-3.55	-1.94
9,799.00	90.50	183.00	7,318.60	-3,384.93	-390.96	3,400.93	5.02	1.81	4.68
9,893.00	91.10	183.30	7,317.28	-3,478.77	-396.12	3,494.92	0.71	0.64	0.32
9,987.00	87.90	182.20	7,318.11	-3,572.65	-400.63	3,588.90	3.60	-3.40	-1.17
10,081.00	90.70	184.70	7,319.25	-3,666.45	-406.28	3,682.88	3.99	2.98	2.66
10,175.00	88.50	182.80	7,319.91	-3,760.24	-412.43	3,776.86	3.09	-2.34	-2.02
10,269.00	90.10	184.70	7,321.06	-3,854.03	-418.58	3,870.84	2.64	1.70	2.02
10,363.00	89.40	182.60	7,321.47	-3,947.83	-424.56	3,964.83	2.35	-0.74	-2.23
10,457.00	88.60	182.40	7,323.11	-4,041.72	-428.66	4,058.81	0.88	-0.85	-0.21
10,551.00	90.30	184.40	7,324.01	-4,135.55	-434.24	4,152.79	2.79	1.81	2.13
10,645.00	90.70	181.70	7,323.19	-4,229.40	-439.24	4,246.78	2.90	0.43	-2.87
10,740.00	87.50	179.40	7,324.68	-4,324.37	-440.15	4,341.66	4.15	-3.37	-2.42
10,834.00	90.60	182.70	7,326.24	-4,418.31	-441.87	4,435.56	4.82	3.30	3.51
10,928.00	88.80	181.60	7,326.73	-4,512.24	-445.40	4,529.55	2.24	-1.91	-1.17

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
11,022.00	87.90	180.80	7,329.44	-4,606.18	-447.37	4,623.46	1.28	-0.96	-0.85
11,116.00	92.00	181.50	7,329.52	-4,700.14	-449.25	4,717.38	4.42	4.36	0.74
11,210.00	89.70	179.70	7,328.13	-4,794.11	-450.24	4,811.28	3.11	-2.45	-1.91
11,304.00	90.20	180.90	7,328.21	-4,888.11	-450.73	4,905.17	1.38	0.53	1.28
11,398.00	87.10	178.30	7,330.42	-4,982.06	-450.08	4,998.95	4.30	-3.30	-2.77
11,493.00	89.60	178.70	7,333.16	-5,076.98	-447.59	5,093.61	2.67	2.63	0.42
11,587.00	87.00	176.40	7,335.95	-5,170.84	-443.58	5,187.12	3.69	-2.77	-2.45
11,681.00	92.80	180.30	7,336.11	-5,264.74	-440.87	5,280.74	7.43	6.17	4.15
11,776.00	92.50	179.70	7,331.72	-5,359.64	-440.87	5,375.51	0.71	-0.32	-0.63
11,870.00	89.60	178.50	7,330.00	-5,453.60	-439.39	5,469.26	3.34	-3.09	-1.28
11,964.00	87.60	179.00	7,332.29	-5,547.55	-437.34	5,562.96	2.19	-2.13	0.53
12,058.00	91.10	181.10	7,333.36	-5,641.52	-437.43	5,656.80	4.34	3.72	2.23
12,151.00	89.12	181.30	7,333.18	-5,734.49	-439.37	5,749.75	2.14	-2.13	0.21
Section Line Crossing									
12,152.00	89.10	181.30	7,333.20	-5,735.49	-439.40	5,750.75	2.14	-2.13	0.21
12,246.00	91.10	183.00	7,333.03	-5,829.42	-442.92	5,844.73	2.79	2.13	1.81
12,341.00	90.90	185.00	7,331.37	-5,924.17	-449.55	5,939.70	2.12	-0.21	2.11
12,434.00	88.50	183.70	7,331.86	-6,016.89	-456.60	6,032.66	2.93	-2.58	-1.40
12,529.00	86.80	184.40	7,335.76	-6,111.57	-463.30	6,127.56	1.93	-1.79	0.74
12,623.00	86.90	184.70	7,340.92	-6,205.13	-470.75	6,221.39	0.34	0.11	0.32
12,717.00	92.40	185.40	7,341.50	-6,298.73	-479.02	6,315.29	5.90	5.85	0.74
12,811.00	91.10	182.60	7,338.63	-6,392.45	-485.57	6,409.23	3.28	-1.38	-2.98
12,905.00	90.60	184.30	7,337.23	-6,486.26	-491.23	6,503.21	1.88	-0.53	1.81
13,000.00	89.50	182.50	7,337.15	-6,581.09	-496.86	6,598.20	2.22	-1.16	-1.89
13,094.00	89.30	179.80	7,338.13	-6,675.06	-498.75	6,692.14	2.88	-0.21	-2.87
13,187.00	92.20	180.90	7,336.92	-6,768.03	-499.32	6,785.01	3.33	3.12	1.18
13,282.00	89.80	180.10	7,335.26	-6,863.01	-500.14	6,879.90	2.66	-2.53	-0.84
13,376.00	90.90	180.20	7,334.68	-6,957.01	-500.39	6,973.77	1.18	1.17	0.11
13,470.00	90.40	180.20	7,333.62	-7,051.00	-500.72	7,067.65	0.53	-0.53	0.00
13,564.00	89.80	179.30	7,333.45	-7,145.00	-500.31	7,161.49	1.15	-0.64	-0.96
13,658.00	91.10	180.50	7,332.71	-7,238.99	-500.14	7,255.35	1.88	1.38	1.28
13,752.00	90.80	179.40	7,331.16	-7,332.97	-500.06	7,349.19	1.21	-0.32	-1.17
13,846.00	90.10	178.10	7,330.42	-7,426.95	-498.01	7,442.92	1.57	-0.74	-1.38
13,939.00	91.50	179.50	7,329.12	-7,519.91	-496.06	7,535.65	2.13	1.51	1.51
14,034.00	90.10	181.90	7,327.79	-7,614.89	-497.23	7,630.56	2.92	-1.47	2.53
14,127.00	91.50	182.60	7,326.49	-7,707.80	-500.88	7,723.54	1.68	1.51	0.75
14,221.00	88.50	182.40	7,326.49	-7,801.70	-504.98	7,817.52	3.20	-3.19	-0.21
14,315.00	89.20	182.80	7,328.38	-7,895.59	-509.24	7,911.50	0.86	0.74	0.43
14,409.00	92.80	184.50	7,326.74	-7,989.36	-515.22	8,005.46	4.24	3.83	1.81
14,503.00	89.40	181.20	7,324.94	-8,083.20	-519.89	8,099.41	5.04	-3.62	-3.51
14,597.00	90.60	182.10	7,324.94	-8,177.16	-522.60	8,193.38	1.60	1.28	0.96
14,691.00	90.40	182.10	7,324.11	-8,271.09	-526.04	8,287.37	0.21	-0.21	0.00
14,785.00	90.30	182.20	7,323.54	-8,365.03	-529.57	8,381.35	0.15	-0.11	0.11
14,879.00	92.70	184.60	7,321.08	-8,458.81	-535.14	8,475.31	3.61	2.55	2.55

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users 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)
14,974.00	89.90	182.80	7,318.92	-8,553.58	-541.27	8,570.26	3.50	-2.95	-1.89
15,069.00	89.60	182.90	7,319.34	-8,648.46	-545.99	8,665.26	0.33	-0.32	0.11
15,163.00	89.50	183.40	7,320.08	-8,742.32	-551.15	8,759.26	0.54	-0.11	0.53
15,257.00	90.30	181.70	7,320.24	-8,836.22	-555.34	8,853.25	2.00	0.85	-1.81
15,351.00	88.30	180.10	7,321.39	-8,930.19	-556.81	8,947.17	2.72	-2.13	-1.70
15,445.00	91.60	181.60	7,321.47	-9,024.17	-558.21	9,041.08	3.86	3.51	1.60
15,539.00	90.00	179.50	7,320.16	-9,118.14	-559.11	9,134.98	2.81	-1.70	-2.23
15,633.00	90.30	178.80	7,319.91	-9,212.13	-557.71	9,228.76	0.81	0.32	-0.74
15,727.00	91.40	178.20	7,318.52	-9,306.09	-555.25	9,322.45	1.33	1.17	-0.64
15,821.00	89.30	177.00	7,317.94	-9,400.00	-551.32	9,416.02	2.57	-2.23	-1.28
15,916.00	91.60	177.60	7,317.20	-9,494.88	-546.84	9,510.53	2.50	2.42	0.63
16,010.00	89.70	180.30	7,316.13	-9,588.85	-545.12	9,604.27	3.51	-2.02	2.87
16,104.00	91.40	181.80	7,315.23	-9,682.82	-546.84	9,698.20	2.41	1.81	1.60
16,198.00	91.00	180.90	7,313.26	-9,776.77	-549.06	9,792.14	1.05	-0.43	-0.96
16,291.00	89.50	181.40	7,312.86	-9,869.75	-550.92	9,885.08	1.70	-1.61	0.54
16,385.00	91.90	183.60	7,311.71	-9,963.64	-555.02	9,979.06	3.46	2.55	2.34
16,479.00	91.10	183.20	7,309.25	-10,057.44	-560.60	10,073.02	0.95	-0.85	-0.43
16,573.00	90.10	176.30	7,308.26	-10,151.38	-560.19	10,166.80	7.42	-1.06	-7.34
16,667.00	89.10	179.50	7,308.92	-10,245.30	-556.74	10,260.41	3.57	-1.06	3.40
16,761.00	89.70	181.00	7,309.90	-10,339.29	-557.15	10,354.29	1.72	0.64	1.60
16,855.00	89.50	181.50	7,310.56	-10,433.27	-559.20	10,448.24	0.57	-0.21	0.53
16,949.00	91.90	184.60	7,309.41	-10,527.11	-564.20	10,542.21	4.17	2.55	3.30
17,043.00	91.70	184.80	7,306.46	-10,620.74	-571.90	10,636.13	0.30	-0.21	0.21
17,136.00	90.20	183.10	7,304.91	-10,713.50	-578.31	10,729.10	2.44	-1.61	-1.83
17,230.00	88.40	182.70	7,306.06	-10,807.37	-583.06	10,823.09	1.96	-1.91	-0.43
17,311.00	90.20	184.80	7,307.05	-10,888.19	-588.36	10,904.07	3.41	2.22	2.59
Last CES Survey									
17,322.00	90.20	184.80	7,307.01	-10,899.15	-589.28	10,915.06	0.00	0.00	0.00
S. Hard Line Crossing									
17,370.00	90.20	184.80	7,306.85	-10,946.98	-593.29	10,963.04	0.00	0.00	0.00
Actual BHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
907.00	906.98	0.14	-1.21	Last Gyro Survey
4,590.00	4,486.33	-738.13	-331.79	Section Line Crossing
7,145.00	7,026.65	-837.18	-371.51	N. Hard Line Crossing
12,151.00	7,333.18	-5,734.49	-439.37	Section Line Crossing
17,311.00	7,307.05	-10,888.19	-588.36	Last CES Survey
17,322.00	7,307.01	-10,899.15	-589.28	S. Hard Line Crossing
17,370.00	7,306.85	-10,946.98	-593.29	Actual BHL

Company:	Sable Permian Resources	Local Co-ordinate Reference:	Well University Owens 1-6 Alloc 33 #33HK
Project:	Reagan County, TX (NAD 27)	TVD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Site:	Sec 235 V Pad	MD Reference:	31' RKB @ 2733.00usft (Ensign 786)
Well:	University Owens 1-6 Alloc 33 #33HK	North Reference:	Grid
Wellbore:	HZ [481237]	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Checked By: _____	Approved By: _____	Date: _____
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Section 2

Drilling Reports

CATHEDRAL ENERGY SERVICES

4701 United Drive
Oklahoma City, OK 73179
Office Phone: 405.261.6011





Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-22-19 Report # : 1 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 961		Daily Drilling Time: 2:50		Client Reps: Brent Cockerman,Jimmy Craft							
Tour End Depth: 1,103		Daily Circulating Time: 0:55		Dir Drillers: Chris Coston,Tony Hatfield							
Tour 24hr Interval: 142		Daily Reaming Time: 0:00		MWD Ops: Mike Martin,Rich Williams							
		Motor Hours this run: 3.75									
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.2	58	6	0	0	0.1		0	23	18	60
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
22	105	105	100	900	100	600					
BHA 1 Motor C2-203039 Cumulative Hrs 3.750											
BHA1 : 12.25 " PDC, 7/8 4.0 Stg. FBH @ 1.83 w/11.5" Stabilizer Lobe:7/8 Stages:4, 11.00" NM Stabilizer, NM Slick Pony DC, NM Slick DC, Gap Sub, NM Slick DC, NM Slick DC, NM Slick DC, NM X/O Sub (4.5 IF x 6 5/8 REG), 5 Stands 5" HWDP											
DAILY ACTIVITY											
0:00	13:00	13:00	1		Rig up / BOP test			0	961.00		
13:00	16:00	3:00	20		Directional Work - Pick up BHA #1			1	961.00		
16:00	16:30	0:30	6		Trip In			1	961.00		
16:30	17:30	1:00	2	R	Drilling Float, Cement, Shoe F/ 917' - T/ 958'			1	961.00		
17:30	21:15	3:45	8		C/O Flex Line			1	961.00		
21:15	22:10	0:55	5		Drilling Cement & Shoe			1	961.00		
22:10	0:00	1:50	2	r	Drilling Rotary 961' - 1103'			1	1,103.00		
Cost Summary											
Description		Item Cost	Total	Description		Item Cost	Total				
EM/MWD Technology (Day)		: 1.0 * \$600.00	\$600.00	Daily Operating Rate (Rigs 1-2) (Day)		: 1.0 * \$7000.00	\$7,000.00				
Gamma Ray Logging While Drilling (If Required) (Day)		: 1.0 * \$500.00	\$500.00	Mob/Demob (Well)		: 1.0 * \$8000.00	\$8,000.00				
Tool Inspection/Recut/Reface (Per End) (Each)		: 16.0 * \$175.00	\$2,800.00	Preferred DD Incentive (Day/Man)		: 2.0 * \$200.00	\$400.00				
Daily cost		\$19,300.00		Total Well Cost :		\$19,300.00					
Morning Activity											
Rig Up											
TFO: 95 (BHA #1)											
Mag Dec: 6.03 (Total Mag Correction)											
Bottom Line, Total Mag Correction Verified/ Tie in @ 907' By Tony/Rich (17:30)											
Bottom Line, Total Mag Correction Verified @ 907' By Chris/Mike (24:00)											



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-23-19 Report # : 2 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth:	1,103	Daily Drilling Time:	21:35	Client Reps: Brent Cockerman,Jimmy Craft							
Tour End Depth:	3,128	Daily Circulating Time:	0:00	Dir Drillers: Chris Coston,Tony Hatfield							
Tour 24hr Interval:	2,025	Daily Reaming Time:	0:00	MWD Ops: Mike Martin,Rich Williams							
		Motor Hours this run:	21.58								
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.2	58	6	0	0	0.1		0	23	18	60
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
30	115	120	105	1,900	350	850					
BHA 1 Motor C2-203039 Cumulative Hrs 25.333											
BHA1 : 12.25 " PDC, 7/8 4.0 Stg. FBH @ 1.83 w/11.5" Stabilizer Lobe:7/8 Stages:4, 11.00" NM Stabilizer, NM Slick Pony DC, NM Slick DC, Gap Sub, NM Slick DC, NM Slick DC, NM Slick DC, NM X/O Sub (4.5 IF x 6 5/8 REG), 5 Stands 5" HWDP											



Description	Item Cost	Total
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Daily Drilling Report

Description	Item Cost	Total
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00
Daily cost	\$8,500.00	Total Well Cost : \$27,800.00

Morning Activity

Drilling Nudge

TFO: 95 (BHA #1)

Mag Dec: 6.03 (Total Mag Correction)

Bottom Line, Total Mag Correction Verified @ 2607' By Tony/Rich (17:30)

Bottom Line, Total Mag Correction Verified @ 1479' By Chris/Mike (04:40)



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-24-19 Report # : 3 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth:		3,128	Daily Drilling Time:		10:0	Client Reps: Brent Cockerman,Jimmy Craft					
Tour End Depth:		3,694	Daily Circulating Time:		0:40	Dir Drillers: Chris Coston,Tony Hatfield					
Tour 24hr Interval:		566	Daily Reaming Time:		0:00	MWD Ops: Mike Martin,Rich Williams					
			Motor Hours this run:		10.67						
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV YP Oil %		
OBM	10.1	56	6	0	11.2	1		0	25 24 69.8		
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
35	145	150	140	2,600	450	850					
BHA 2 Motor 8045 Cumulative Hrs 5.000											
BHA1 : 12.25 " PDC, 7/8 4.0 Stg. FBH @ 1.83 w/11.5" Stabilizer Lobe:7/8 Stages:4, 11.00" NM Stabilizer, NM Slick Pony DC, NM Slick DC, Gap Sub, NM Slick DC, NM Slick DC, NM Slick DC, NM X/O Sub (4.5 IF x 6 5/8 REG), 5 Stands 5" HWDP BHA2 : 12.25 " PDC, 8" 7/8 5.9 Fxd @ 1.75 w/ 11.75 Stab. Sleeve Lobe:7/8 Stages:5.9, 11.00" NM Stabilizer, NM Slick Pony DC, NM Slick DC, Gap Sub, NM Slick DC, NM Slick DC, NM Slick DC, NM X/O Sub (4.5 IF x 6 5/8 REG), 5 Stands 5" HWDP											
DAILY ACTIVITY											
0:00	0:25	0:25	2	r	Drilling Rotary 3128' - 3171'			1	3,171.00		
0:25	0:30	0:05	10		Survey @ 3113' 15.4 Inc. 203.9 Az.			1	3,171.00		
0:30	1:50	1:20	2	R	Drilling Rotary 3171' - 3265'			1	3,265.00		
1:50	1:55	0:05	10		Survey @ 3207' 15.3 Inc. 204.8 Az.			1	3,265.00		
1:55	3:15	1:20	2	r	Drilling Rotary 3265' - 3359'			1	3,359.00		
3:15	3:20	0:05	10		Survey @ 3301 14.9 Inc. 205.7 Az.			1	3,359.00		
3:20	4:10	0:50	2	s	Drilling Sliding 3359' - 3369' @ 45L			1	3,369.00		
4:10	5:15	1:05	2	R	Drilling Rotary 3369' - 3414'			1	3,414.00		
5:15	5:20	0:05	10		Survey @ 3356' 15.3 Inc. 205.7 Az.			1	3,414.00		
5:20	6:00	0:40	5		Circulating			1	3,414.00		
6:00	8:45	2:45	6a		Trip Out To Surface			1	3,414.00		
8:45	10:00	1:15	20		Directional Work - Lay down BHA #1			1	3,414.00		
10:00	12:15	2:15	20		Directional Work - Pick up BHA #2			2	3,414.00		
12:15	14:05	1:50	6		Trip In			2	3,414.00		
14:05	14:45	0:40	2	R	Drilling Rotary F/ 3414' - T/ 3464'			2	3,464.00		
14:45	14:50	0:05	10		Survey @ 3395' - 15.9° Inc - 205.3° Azi			2	3,464.00		
14:50	15:45	0:55	2	R	Drilling Rotary F/ 3464' - T/ 3558'			2	3,558.00		
15:45	15:50	0:05	10		Survey @ 3489' - 16.0° Inc - 205.5° Azi			2	3,558.00		
15:50	16:35	0:45	2	R	Drilling Rotary F/ 3558' - T/ 3652'			2	3,652.00		
16:35	16:40	0:05	10		Survey @ 3583' - 15.3° Inc - 206.1° Azi			2	3,652.00		
16:40	19:00	2:20	2	S	Drilling Sliding F/ 3652' - T/ 3676' @ 45L			2	3,676.00		
19:00	19:20	0:20	2	R	Drilling Rotary 3676' - 3694'			2	3,694.00		
19:20	0:00	4:40	8		Work on Pason / Auto Driller			2	3,694.00		
Description Item Cost Total Description Item Cost Total											
Daily Operating Rate (Rigs 1-2) (Day)		: 1.0 * \$7000.00		\$7,000.00							
EM/MWD Technology (Day)		: 1.0 * \$600.00		\$600.00							
Gamma Ray Logging While Drilling (If Required) (Day)		: 1.0 * \$500.00		\$500.00							
Motor Redress (Each)		: 1.0 * \$1500.00		\$1,500.00							
Motor Reline (Each)		: 1.0 * \$8900.00		\$8,900.00							
Preferred DD Incentive (Day/Man)		: 2.0 * \$200.00		\$400.00							
Daily cost		\$18,900.00		Total Well Cost :		\$46,700.00					
Morning Activity											



Daily Drilling Report

Drilling Nudge

TFO: 314 (BHA #2)

Mag Dec: 6.03 (Total Mag Correction)

Bottom Line, Total Mag Correction Verified @ 3652' By Tony/Rich (17:30)

Bottom Line, Total Mag Correction Verified @ 3414' By Chris/Mike (05:30)



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-25-19 Report # : 4 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth:	3,694	Daily Drilling Time:	22:35	Client Reps: Brent Cockerman,Jimmy Craft							
Tour End Depth:	5,283	Daily Circulating Time:	0:00	Dir Drillers: Chris Coston,Tony Hatfield							
Tour 24hr Interval:	1,589	Daily Reaming Time:	0:00	MWD Ops: Mike Martin,Rich Williams							
		Motor Hours this run:	22.58								
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.1	62	6	0	11	0.1		0	28	34	65.1
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
25	150	160	145	2,600	300	850					
BHA 2 Motor 8045 Cumulative Hrs 27.583											
BHA2 : 12.25 " PDC, 8" 7/8 5.9 Fxd @ 1.75 w/ 11.75 Stab. Sleeve Lobe:7/8 Stages:5.9, 11.00" NM Stabilizer, NM Slick Pony DC, NM Slick DC, Gap Sub, NM Slick DC, NM Slick DC, NM Slick DC, NM X/O Sub (4.5 IF x 6 5/8 REG), 5 Stands 5" HWDP											



Daily Drilling Report

DAILY ACTIVITY							
0:00	0:30	0:30	2	r	Drilling Rotary 3694' - 3746'	2	3,746.00
0:30	0:35	0:05	10		Survey @ 3677' 14.5 Inc. 202.4 Az.	2	3,746.00
0:35	1:15	0:40	2	s	Drilling Sliding 3746' - 3770' @ 20L	2	3,770.00
1:15	1:45	0:30	2	r	Drilling Rotary 3770' - 3840'	2	3,840.00
1:45	1:50	0:05	10		Survey @ 3771' 15.5 Inc. 200.7 Az.	2	3,840.00
1:50	2:25	0:35	2	r	Drilling Rotary 3840' - 3934'	2	3,934.00
2:25	2:30	0:05	10		Survey @ 3865' 15.4 Inc. 200.9 Az.	2	3,934.00
2:30	2:55	0:25	2	s	Drilling Sliding 3934' - 3954' @15L	2	3,954.00
2:55	3:20	0:25	2	r	Drilling Rotary 3954' - 4028'	2	4,028.00
3:20	3:25	0:05	10		Survey @ 3959' 15.4 Inc. 200.6 Az.	2	4,028.00
3:25	3:45	0:20	2	r	Drilling Rotary 4028' - 4121'	2	4,121.00
3:45	3:50	0:05	10		Survey @ 4052' 14.6 Inc. 200.4 Az.	2	4,121.00
3:50	4:20	0:30	2	s	Drilling Sliding 4121' - 4141' @ HS	2	4,141.00
4:20	4:50	0:30	2	R	Drilling Rotary 4141' - 4216'	2	4,216.00
4:50	4:55	0:05	10		Survey @ 4147' 14.2 Inc. 202.8 Az.	2	4,216.00
4:55	5:10	0:15	2	s	Drilling Sliding 4216' - 4228' @ 20L	2	4,228.00
5:10	5:55	0:45	2	R	Drilling Rotary 4228' - 4310'	2	4,310.00
5:55	6:00	0:05	10		Survey @ 4241' 14.8 Inc. 203.0 Az.	2	4,310.00
6:00	6:55	0:55	2	R	Drilling Rotary F/ 4310' - T/ 4404'	2	4,404.00
6:55	7:00	0:05	10		Survey @ 4335' - 14.2° Inc - 201.5° Azi	2	4,404.00
7:00	7:45	0:45	2	R	Drilling Rotary F/ 4404' - T/ 4498'	2	4,498.00
7:45	7:50	0:05	10		Survey @ 4429' - 13.5° Inc - 201.9° Azi	2	4,498.00
7:50	8:45	0:55	2	R	Drilling Rotary F/ 4498' - T/ 4592'	2	4,592.00
8:45	8:50	0:05	10		Survey @ 4523' - 12.3° Inc - 202.9° Azi	2	4,592.00
8:50	9:35	0:45	2	R	Drilling Rotary F/ 4592' - T/ 4686'	2	4,686.00
9:35	9:40	0:05	10		Survey @ 4617' - 10.8° Inc - 202.9° Azi	2	4,686.00
9:40	10:30	0:50	2	S	Drilling Sliding F/ 4686' - T/ 4701' @ 180	2	4,701.00
10:30	11:20	0:50	2	R	Drilling Rotary F/ 4701' - T/ 4781'	2	4,781.00
11:20	11:25	0:05	10		Survey @ 4712' - 9.0° Inc - 201.6° Azi	2	4,781.00
11:25	12:20	0:55	2	S	Drilling Sliding F/ 4781' - T/ 4806' @ 180	2	4,806.00
12:20	12:55	0:35	2	R	Drilling Rotary F/ 4806' - T/ 4875'	2	4,875.00
12:55	13:00	0:05	10		Survey @ 4806' - 6.0° Inc - 198.4° Azi	2	4,875.00
13:00	14:40	1:40	2	S	Drilling Sliding F/ 4875' - T/ 4898' @ 180	2	4,898.00
14:40	15:25	0:45	2	R	Drilling Rotary F/ 4898' - T/ 4969'	2	4,969.00
15:25	15:30	0:05	10		Survey @ 4900' - 3.5° Inc - 206.1° Azi	2	4,969.00
15:30	18:25	2:55	2	S	Drilling Sliding F/ 4969' - T/ 4997' @ 180	2	4,997.00
18:25	19:10	0:45	2	R	Drilling Rotary F/ 4997' - T/ 5063'	2	5,063.00
19:10	19:15	0:05	10		Survey @ 4994' - 1.1° Inc - 207.8° Azi	2	5,063.00
19:15	20:20	1:05	2	s	Drilling Sliding 5063' - 5072' @ 20M	2	5,063.00
20:20	21:50	1:30	2	r	Drilling Rotary 5072 - 5157	2	5,157.00
21:50	21:55	0:05	10		Survey @ 5088' 0.1 Inc. 56.4 Az.	2	5,157.00
21:55	23:15	1:20	2	r	Drilling Rotary 5157 - 5251	2	5,251.00
23:15	23:20	0:05	10		Survey @ 5182 0.4 Inc. 19.8 Az.	2	5,251.00
23:20	0:00	0:40	2	r	Drilling Rotary 5251' - 5283'	2	5,283.00

Description	Item Cost	Total	Description	Item Cost	Total
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00			
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00			
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00			
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00			
Daily cost	\$8,500.00		Total Well Cost :	\$55,200.00	

Morning Activity



Daily Drilling Report

Drilling Nudge

TFO: 314 (BHA #2)

Mag Dec: 6.03 (Total Mag Correction)

Bottom Line, Total Mag Correction Verified @ 4969' By Tony/Rich (17:30)

Bottom Line, Total Mag Correction Verified @ 4310' By Chris/Mike (05:30)



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-26-19 Report # : 5 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 5,283		Daily Drilling Time: 13:25		Client Reps: Brent Cockerman, Jimmy Craft							
Tour End Depth: 5,802		Daily Circulating Time: 1:10		Dir Drillers: Chris Coston, Tony Hatfield							
Tour 24hr Interval: 519		Daily Reaming Time: 0:00		MWD Ops: Mike Martin, Rich Williams							
		Motor Hours this run: 14.58									
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.1	60	6	0	11	0.1		0	24	25	65.5
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
25	185	195	175	2,950	450	850					
BHA 2 Motor 8045 Cumulative Hrs 42.167											
BHA2 : 12.25 " PDC, 8" 7/8 5.9 Fxd @ 1.75 w/ 11.75 Stab. Sleeve Lobe: 7/8 Stages: 5.9, 11.00" NM Stabilizer, NM Slick Pony DC, NM Slick DC, Gap Sub, NM Slick DC, NM Slick DC, NM Slick DC, NM X/O Sub (4.5 IF x 6 5/8 REG), 5 Stands 5" HWDP											
DAILY ACTIVITY											
0:00	1:00	1:00	2	r	Drilling Rotary 5283' - 5346'	2	5,346.00				
1:00	1:05	0:05	10		Survey @ 5277' 0.4 Inc. 323.7 Az.	2	5,346.00				
1:05	2:55	1:50	2	r	Drilling Rotary 5346' - 5439'	2	5,439.00				
2:55	3:00	0:05	10		Survey @ 5370 0.4 Inc. 289.0 Az.	2	5,439.00				
3:00	4:40	1:40	2	R	Drilling Rotary 5439' - 5534'	2	5,534.00				
4:40	4:45	0:05	10		Survey @ 5465' 0.3 Inc. 235.7 Az.	2	5,534.00				
4:45	8:15	3:30	2	R	Drilling Rotary F/ 5534' - T/ 5628'	2	5,628.00				
8:15	8:20	0:05	10		Survey @ 5559' - 0.1° Inc - 242.6° Azi	2	5,628.00				
8:20	10:55	2:35	2	R	Drilling Rotary F/ 5628' - T/ 5722'	2	5,722.00				
10:55	10:55	0:00	10		Survey @ 5653' - 0.1° Inc - 126.6° Azi	2	5,722.00				
10:55	13:45	2:50	2	R	Drilling Rotary F/ 5722' - T/ 5802'	2	5,802.00				
13:45	13:50	0:05	10		BH Survey @ 5733' - 0.1° Inc - 152.2° Azi	2	5,802.00				
13:50	15:00	1:10	5		Circulating mud	2	5,802.00				
15:00	18:15	3:15	6a		Trip Out To Surface	2	5,802.00				
18:15	20:50	2:35	9		Cut Drilling Line	2	5,802.00				
20:50	21:30	0:40	6a		Trip Out To Surface	2	5,802.00				
21:30	0:00	2:30	22		L/D BHA #2	2	5,802.00				
Description		Item Cost	Total	Description		Item Cost	Total				
Daily Operating Rate (Rigs 1-2) (Day)		: 1.0 * \$7000.00	\$7,000.00								
EM/MWD Technology (Day)		: 1.0 * \$600.00	\$600.00								
Gamma Ray Logging While Drilling (If Required) (Day)		: 1.0 * \$500.00	\$500.00								
Motor Redress (Each)		: 1.0 * \$1500.00	\$1,500.00								
Motor Reline (Each)		: 1.0 * \$8900.00	\$8,900.00								
Preferred DD Incentive (Day/Man)		: 2.0 * \$200.00	\$400.00								
Daily cost		\$18,900.00		Total Well Cost :		\$74,100.00					
Morning Activity											
Drilling Nudge											
TFO: 314 (BHA #2)											
Mag Dec: 6.03 (Total Mag Correction)											
Bottom Line, Total Mag Correction Verified @ 5802' By Tony/Rich (13:50)											
Bottom Line, Total Mag Correction Verified @ 5628' By Chris/Mike (05:00)											



Daily Drilling Report

Client : Sable Permian Resources	Date : Jun-27-19
Well Name : University Owens 1-6 Alloc 33 #33HK	Report # : 6
Location : Reagan County Texas	Rig : Ensign 786
Field : PERMIAN	UWI : 42-383-40619
Job Number : 198135 AFE # 1550744	Well License : 852545

DAILY PERFORMANCE		Field Computer :		Field Phone : 0	
Tour Start Depth:	5,802	Daily Drilling Time:	8:0	Client Reps: Brent Cockerman,David Blackmon Dir Drillers: Chris Coston,Tony Hatfield MWD Ops: Mike Martin,Rich Williams	
Tour End Depth:	6,715	Daily Circulating Time:	1:35		
Tour 24hr Interval:	913	Daily Reaming Time:	1:15		
		Motor Hours this run:	10.83		

DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.1	61	6	0	9.4	0.1		0	26	25	65.9

DRILLING PERFORMANCE							
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :	
25	185	195	175	2,900	450	850	

BHA 3 Motor 8064 Cumulative Hrs 10.833											
BHA3 : 12.25 " PDC, 8" 7/8 4.0 Fxd @ 1.75 w/ 9 5/8 Stab. Sleeve Lobe:7/8 Stages:4, 11.00" NM Stabilizer, NM Slick Pony DC, NM Slick DC, Gap Sub, NM Slick DC, NM Slick DC, NM Slick DC, NM X/O Sub (4.5 IF x 6 5/8 REG), 5 Stands 5" HWDP											

DAILY ACTIVITY							
0:00	0:25	0:25	22		P/U BHA #3	3	5,802.00
0:25	0:50	0:25	22		Scribe & Program MWD	3	5,802.00
0:50	1:15	0:25	22		M/U NMDCs	3	5,802.00
1:15	5:20	4:05	6		Trip In	3	5,802.00
5:20	6:35	1:15	3		Reaming / Washing F/ 5250' - T/ 5802'	3	5,802.00
6:35	7:30	0:55	2	R	Drilling Rotary F/ 5802' - T/ 5900'	3	5,900.00
7:30	7:35	0:05	10		Survey @ 5841' - 0.1° Inc - 358.7° Azi	3	5,900.00
7:35	8:15	0:40	2	R	Drilling Rotary F/ 5900' - T/ 5993'	3	5,993.00
8:15	8:20	0:05	10		Survey @ 5934' - 0.1° Inc - 310.7° Azi	3	5,993.00
8:20	9:00	0:40	2	R	Drilling Rotary F/ 5993' - T/ 6087'	3	6,087.00
9:00	9:05	0:05	10		Survey @ 6028' - 0.2° Inc - 264.7° Azi	3	6,087.00
9:05	9:55	0:50	2	R	Drilling Rotary F/ 6087' - T/ 6181'	3	6,181.00
9:55	10:00	0:05	10		Survey @ 6122' - 0.5° Inc - 292.2° Azi	3	6,181.00
10:00	10:55	0:55	2	R	Drilling Rotary F/ 6181' - T/ 6275'	3	6,275.00
10:55	11:00	0:05	10		Survey @ 6216' - 0.6° Inc - 273.4° Azi	3	6,275.00
11:00	11:45	0:45	2	R	Drilling Rotary F/ 6275' - T/ 6389'	3	6,389.00
11:45	11:50	0:05	10		Survey @ 6310' - 0.9° Inc - 291.1° Azi	3	6,389.00
11:50	12:40	0:50	2	R	Drilling Rotary F/ 6389' - T/ 6464'	3	6,464.00
12:40	12:45	0:05	10		Survey @ 6405' - 0.9° Inc - 285.5° Azi	3	6,464.00
12:45	13:40	0:55	2	R	Drilling Rotary F/ 6464' - T/ 6558'	3	6,558.00
13:40	13:45	0:05	10		Survey @ 6499' - 0.9° Inc - 278.6° Azi	3	6,558.00
13:45	14:35	0:50	2	R	Drilling Rotary F/ 6558' - T/ 6652'	3	6,652.00
14:35	14:40	0:05	10		Survey @ 6593' - 0.9° Inc - 274.8° Azi	3	6,652.00
14:40	15:20	0:40	2	R	Drilling Rotary F/ 6652' - T/ 6715'	3	6,715.00
15:20	15:25	0:05	10		Survey @ 6656' - 0.9° Inc - 279.6° Azi	3	6,715.00
15:25	17:00	1:35	5		Circulating Mud	3	6,715.00
17:00	22:15	5:15	6a		Trip Out To Surface	3	6,715.00
22:15	0:00	1:45	22		L/D BHA #3	3	6,715.00

Description	Item Cost	Total	Description	Item Cost	Total
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00			
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00			
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00			
Motor Redress (Each)	: 1.0 * \$1500.00	\$1,500.00			
Motor Reline (Each)	: 1.0 * \$8900.00	\$8,900.00			
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00			



Daily Drilling Report

Daily cost	\$18,900.00	Total Well Cost :	\$93,000.00
Morning Activity			
Drilling Nudge			
TFO: 326 (BHA #3)			
Mag Dec: 6.03 (Total Mag Correction)			
Bottom Line, Total Mag Correction Verified @ 6656' By Tony/Rich (15:20)			
Bottom Line, Total Mag Correction Verified @ 5628' By Chris/Mike (05:00)			



Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-28-19 Report # : 7 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth:		6,715		Daily Drilling Time:		0:00		Client Reps: Brent Cockerman,David Blackmon			
Tour End Depth:		6,715		Daily Circulating Time:		0:00		Dir Drillers: Chris Coston,Tony Hatfield			
Tour 24hr Interval:		0		Daily Reaming Time:		0:00		MWD Ops: Mike Martin,Rich Williams			
				Motor Hours this run:		0.00					
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.1	73	6	0	11.1	0.1		0	33	29	62.6
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
0	0	0	0	0	0	0					
BHA4 : 8.75 " PDC, 7/8, 5.0 Stg. FBH @ 2.25° True Slick Lobe:7/8 Stages:5, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, Fusion Spacer Sub, Fusion Pulser Sub, NM Flex DC, NM Slick DC											
DAILY ACTIVITY											
0:00	14:10	14:10	12		Run Casing				4	6,715.00	
14:10	0:00	9:50	12		Cement				4	6,715.00	
Description											
Item Cost		Total		Description		Item Cost		Total			
Preferred DD Incentive (Day/Man)		: 2.0 * \$200.00 \$400.00									
Standby Rate (Day)		: 1.0 * \$4700.00 \$4,700.00									
Daily cost		\$5,100.00		Total Well Cost :		\$98,100.00					
Morning Activity											
Running Casing											
TFO: 326 (BHA #3)											
Mag Dec: 6.03 (Total Mag Correction)											
Bottom Line, Total Mag Correction Verified @ 6656' By Tony/Rich (15:20)											
Bottom Line, Total Mag Correction Verified @ 5628' By Chris/Mike (05:00)											



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-29-19 Report # : 8 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth:	6,715	Daily Drilling Time:	4:25	Client Reps: Brent Cockerman,David Blackmon							
Tour End Depth:	6,931	Daily Circulating Time:	0:45	Dir Drillers: Chris Coston,Tony Hatfield							
Tour 24hr Interval:	216	Daily Reaming Time:	0:00	MWD Ops: Mike Martin,Rich Williams							
		Motor Hours this run:	5.17								
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.2	62	4	0	10.6	0.1		0	27	23	62.8
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
0	0	0	0	0	0	0					
BHA 4 Motor C3-171191 Cumulative Hrs 5.167											
BHA4 : 8.75 " PDC, 7/8, 5.0 Stg. FBH @ 2.25° True Slick Lobe:7/8 Stages:5, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, Fusion Spacer Sub, Fusion Pulser Sub, NM Flex DC, NM Slick DC											
DAILY ACTIVITY											
0:00	3:00	3:00	22		L/D Landing JNT. / Wash Lines.	0	6,715.00				
3:00	4:10	1:10	22		P/U BHA #4	4	6,715.00				
4:10	5:10	1:00	22		M/U& Build MWD	4	6,715.00				
5:10	5:20	0:10	22		Scribe MWD	4	6,715.00				
5:20	6:00	0:40	22		M/U Pulser Sub & Monels	4	6,715.00				
6:00	12:20	6:20	1		Cleaning pits	4	6,715.00				
12:20	13:00	0:40	6		Trip In to 2432' to drill out DV tool	4	6,715.00				
13:00	13:50	0:50	2	R	Drilling out DV Tool	4	6,715.00				
13:50	16:25	2:35	6		Trip In to Float @ 6620'	4	6,715.00				
16:25	17:10	0:45	5		Circulating mud/ fill pipe	4	6,715.00				
17:10	18:00	0:50	15		Casing Pressure Test	4	6,715.00				
18:00	20:10	2:10	22		Drill Float & Shoe	4	6,715.00				
20:10	22:10	2:00	2	r	Drilling Rotary 6715' - 6825'	4	6,825.00				
22:10	22:15	0:05	10		Survey @ 6774' 1.1 Inc. 270.6 Az.	4	6,825.00				
22:15	23:40	1:25	2	R	Drilling Rotary 6825' - 6919'	4	6,919.00				
23:40	23:50	0:10	10		Survey @ 6868 0.8 Inc. 270.1 Az.	4	6,919.00				
23:50	0:00	0:10	2	r	Drilling Rotary 6919' - 6931'	4	6,931.00				
Description		Item Cost	Total	Description		Item Cost	Total				
Daily Operating Rate (Rigs 1-2) (Day)		: 1.0 * \$7000.00	\$7,000.00								
EM/MWD Technology (Day)		: 1.0 * \$600.00	\$600.00								
Gamma Ray Logging While Drilling (If Required) (Day)		: 1.0 * \$500.00	\$500.00								
Preferred DD Incentive (Day/Man)		: 2.0 * \$200.00	\$400.00								
Tool Inspection/Recut/Reface (Per End) (Each)		: 12.0 * \$175.00	\$2,100.00								
Daily cost		\$10,600.00		Total Well Cost :		\$108,700.00					
Morning Activity											
TIH w/ Curve Assembly											
TFO: 313 (BHA #4)											
Mag Dec: 6.03 (Total Mag Correction)											
Bottom Line, Total Mag Correction Verified @ 6656' By Tony/Rich (15:20)											
Bottom Line, Total Mag Correction Verified @ 5628' By Chris/Mike (05:00)											



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jun-30-19 Report # : 9 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth:	6,931	Daily Drilling Time:	11:15	Client Reps: Brent Cockerman,David Blackmon							
Tour End Depth:	7,700	Daily Circulating Time:	0:50	Dir Drillers: Chris Coston,Tony Hatfield							
Tour 24hr Interval:	769	Daily Reaming Time:	0:00	MWD Ops: Mike Martin,Rich Williams							
		Motor Hours this run:	12.08								
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	9.8	56	5	0	8.7	0.1		0	23	24	65
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
25	190	200	185	2,500	500	600					
BHA 4 Motor C3-171191 Cumulative Hrs 17.250											
BHA4 : 8.75 " PDC, 7/8, 5.0 Stg. FBH @ 2.25° True Slick Lobe:7/8 Stages:5, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, Fusion Spacer Sub, Fusion Pulser Sub, NM Flex DC, NM Slick DC											
BHA5 : 8.75 " PDC, 7" Claw250 FBH @ 1.83° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											



Description	Item Cost	Total
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Daily Drilling Report

Description	Item Cost	Total
CLAW 250 Motor Rental (Day)	: 1.0 * \$2000.00	\$2,000.00
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00
Motor Redress (Each)	: 1.0 * \$1500.00	\$1,500.00
Motor Reline (Each)	: 1.0 * \$8900.00	\$8,900.00
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00
Daily cost	\$20,900.00	Total Well Cost : \$129,600.00

Morning Activity

Drilling Curve

TFO: 313 (BHA #4)

Mag Dec: 6.03 (Total Mag Correction)

Bottom Line, Total Mag Correction Verified @ 7700' By Tony/Rich (12:40)

Bottom Line, Total Mag Correction Verified @ 7200' By Chris/Mike (06:00)



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jul-01-19 Report # : 10 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 7,700		Daily Drilling Time: 16:55		Client Reps: Brent Cockerman,David Blackmon							
Tour End Depth: 11,211		Daily Circulating Time: 2:20		Dir Drillers: Alberto Gonzalez,Chris Coston,Tony Hatfield							
Tour 24hr Interval: 3,511		Daily Reaming Time: 0:00		MWD Ops: Mark Gross,Mike Martin,Rich Williams							
Motor Hours this run: 19.25											
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10	54	4	0	9.7	0.1		0	26	25	67.8
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
25	195	210	170	4,200	600	700					
BHA 5 Motor C2-171166 Cumulative Hrs 19.250											
BHA5 : 8.75 " PDC, 7" Claw250 FBH @ 1.83° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											
DAILY ACTIVITY											
0:00	1:00	1:00	6		Trip In			5	7,700.00		
1:00	3:15	2:15	5		W&R 6950' - 7700'			5	7,700.00		
3:15	3:40	0:25	2	r	Drilling Rotary 7700' - 7760'			5	7,760.00		
3:40	3:45	0:05	5		Checkshot			5	7,760.00		
3:45	4:00	0:15	2	s	Drilling Sliding 7760' - 7775'			5	7,775.00		
4:00	4:15	0:15	2	r	Drilling Rotary 7775' - 7790'			5	7,790.00		
4:15	4:20	0:05	10		Survey @ 7731' 88.2 Inc. 183.4 Az.			5	7,790.00		
4:20	4:50	0:30	2	r	Drilling Rotary 7790' - 7885'			5	7,885.00		
4:50	4:55	0:05	10		Survey @ 7826' 903. Inc. 182.3 Az.			5	7,885.00		
4:55	5:10	0:15	2	s	Drilling Sliding 7885' - 7905' @ 115L			5	7,885.00		
5:10	5:40	0:30	2	R	Drilling Rotary 7905' - 7979'			5	7,885.00		
5:40	5:45	0:05	10		Survey @ 7920' - 89.4° Inc - 181.1° Azi			5	7,885.00		
5:45	6:10	0:25	2	R	Drilling Rotary F/ 7979' - T/ 8072'			5	7,885.00		
6:10	6:15	0:05	10		Survey @ 8013' - 90.1° Inc - 183.3° Azi			5	7,885.00		
6:15	6:30	0:15	2	s	Drilling Sliding F/ 8072' - T/ 8097' @ 110L			5	8,097.00		
6:30	6:45	0:15	2	R	Drilling Rotary F/ 8097' - T/ 8167'			5	8,167.00		
6:45	6:50	0:05	10		Survey @ 8108' - 89.2° Inc - 181.1° Azi			5	8,167.00		
6:50	7:10	0:20	2	R	Drilling Rotary F/ 8167' - T/ 8260'			5	8,260.00		
7:10	7:15	0:05	10		Survey @ 8201' - 89.2° Inc - 180.1° Azi			5	8,260.00		
7:15	7:40	0:25	2	R	Drilling Rotary F/ 8260' - T/ 8355'			5	8,355.00		
7:40	7:45	0:05	10		Survey @ 8296' - 88.2° Inc - 178.9° Azi			5	8,355.00		
7:45	8:00	0:15	2	S	Drilling Sliding F/ 8355' - T/ 8370' @ 45R			5	8,370.00		
8:00	8:10	0:10	2	R	Drilling Rotary F/ 8370' - T/ 8448'			5	8,448.00		
8:10	8:20	0:10	10		Survey @ 8389' - 91.7° Inc - 181.5° Azi			5	8,448.00		
8:20	8:45	0:25	2	R	Drilling Rotary F/ 8448' - T/ 8542'			5	8,542.00		
8:45	8:50	0:05	10		Survey @ 8483' - 91.9° Inc - 181.9° Azi			5	8,542.00		
8:50	8:55	0:05	2	S	Drilling Sliding F/ 8542' - T/ 8554' @ 125L			5	8,554.00		
8:55	9:15	0:20	2	R	Drilling Rotary F/ 8554' - T/ 8636'			5	8,636.00		
9:15	9:20	0:05	10		Survey @ 8577' - 89.4° Inc - 178.2° Azi			5	8,636.00		
9:20	9:35	0:15	2	R	Drilling Rotary F/ 8636' - T/ 8730'			5	8,730.00		
9:35	9:40	0:05	10		Survey @ 8671' - 89.0° Inc - 178.0° Azi			5	8,730.00		
9:40	10:00	0:20	2	R	Drilling Rotary F/ 8730' - T/ 8824'			5	8,824.00		
10:00	10:05	0:05	10		Survey @ 8765' - 88.9° Inc - 178.2° Azi			5	8,824.00		
10:05	10:30	0:25	2	R	Drilling Rotary F/ 8824' - T/ 8919'			5	8,919.00		
10:30	10:35	0:05	10		Survey @ 8860' - 92.1° Inc - 181.6° Azi			5	8,919.00		
10:35	10:45	0:10	2	S	Drilling Sliding F/ 8919' - T/ 8931' @ 150L			5	8,931.00		
10:45	11:05	0:20	2	R	Drilling Rotary F/ 8931' - T/ 9013'			5	9,013.00		

11:05	11:10	0:05	10		Survey @ 8954' - 90.0° Inc - 179.8° Azi	5	9,013.00
11:10	11:30	0:20	2	R	Drilling Rotary F/ 9013' - T/ 9107'	5	9,107.00
11:30	11:35	0:05	10		Survey @ 9048' - 86.9° Inc - 177.5° Azi	5	9,107.00
11:35	11:45	0:10	2	S	Drilling Sliding F/ 9107' - T/ 9122' @ 45R	5	9,122.00
11:45	12:15	0:30	2	R	Drilling Rotary F/ 9122' - T/ 9201'	5	9,201.00
12:15	12:20	0:05	10		Survey @ 9142' - 88.9° Inc - 179.9° Azi	5	9,201.00
12:20	12:30	0:10	2	S	Drilling Sliding F/ 9201' - T/ 9213' @ 45R	5	9,213.00
12:30	12:50	0:20	2	R	Drilling Rotary F/ 9213' - T/ 9294'	5	9,294.00
12:50	12:55	0:05	10		Survey @ 9235' - 93.2° Inc - 183.3° Azi	5	9,294.00
12:55	13:05	0:10	2	S	Drilling Sliding F/ 9294' - T/ 9309' @ 45R	5	9,309.00
13:05	13:30	0:25	2	R	Drilling Rotary F/ 9309' - T/ 9388'	5	9,388.00
13:30	13:35	0:05	10		Survey @ 9329' - 90.8° Inc - 181.3° Azi	5	9,388.00
13:35	14:00	0:25	2	R	Drilling Rotary F/ 9388' - T/ 9482'	5	9,482.00
14:00	14:05	0:05	10		Survey @ 9423' - 89.5° Inc - 178.7° Azi	5	9,482.00
14:05	14:30	0:25	2	R	Drilling Rotary F/ 9482' - T/ 9576'	5	9,576.00
14:30	14:35	0:05	10		Survey @ 9517' - 88.6° Inc - 178.3° Azi	5	9,576.00
14:35	15:05	0:30	2	R	Drilling Rotary F/ 9576' - T/ 9671'	5	9,671.00
15:05	15:10	0:05	10		Survey @ 9612' - 92.1° Inc - 180.4° Azi	5	9,671.00
15:10	15:30	0:20	2	R	Drilling Rotary F/ 9671' - T/ 9764'	5	9,764.00
15:30	15:35	0:05	10		Survey @ 9705' - 88.8° Inc - 178.6° Azi	5	9,764.00
15:35	15:45	0:10	2	s	Drilling Sliding F/ 9764' - T/ 9782' @ 90R	5	9,782.00
15:45	16:05	0:20	2	R	Drilling Rotary F/ 9782' - T/ 9858'	5	9,858.00
16:05	16:10	0:05	10		Survey @ 9799' - 90.5° Inc - 183.0° Azi	5	9,858.00
16:10	16:30	0:20	2	R	Drilling Rotary F/ 9858' - T/ 9952'	5	9,952.00
16:30	16:35	0:05	10		Survey @ 9893' - 91.1° Inc - 183.3° Azi	5	9,952.00
16:35	16:45	0:10	2	S	Drilling Sliding F/ 9952' - T/ 9963' @ 180	5	9,963.00
16:45	17:10	0:25	10		Survey @ 9987' - 87.9° Inc - 182.2° Azi	5	9,963.00
17:10	17:30	0:20	2	R	Drilling Rotary F/ 9963' - T/ 10146'	5	10,146.00
17:30	17:45	0:15	7		Rig Service	5	10,146.00
17:45	17:50	0:05	10		Survey @ 10081' - 90.7° Inc - 184.7° Azi	5	10,146.00
17:50	18:05	0:15	2	S	Drilling Sliding F/ 10146' - T/ 10161' @ 145L	5	10,161.00
18:05	18:25	0:20	2	R	Drilling Rotary F/ 10161' - T/ 10234'	5	10,234.00
18:25	18:30	0:05	10		Survey @ 10175' - 88.5° Inc - 182.8° Azi	5	10,234.00
18:30	18:50	0:20	2	R	Drilling Rotary F/ 10234' - T/ 10328'	5	10,328.00
18:50	18:55	0:05	10		Survey @ 10269' - 90.1° Inc - 184.7° Azi	5	10,328.00
18:55	19:10	0:15	2	S	Drilling Sliding F/ 10328' - T/ 10346' @ 110L	5	10,346.00
19:10	19:30	0:20	2	R	Drilling Rotary F/ 10346' - T/ 10422'	5	10,422.00
19:30	19:35	0:05	10		Survey @ 10363' - 89.4° Inc - 182.6° Azi	5	10,422.00
19:35	19:55	0:20	2	R	Drilling Rotary F/ 10422' - T/ 10516'	5	10,516.00
19:55	20:00	0:05	10		Survey @ 10457' - 88.6° Inc - 182.4° Azi	5	10,516.00
20:00	20:25	0:25	2	R	Drilling Rotary F/ 10516' - T/ 10610'	5	10,610.00
20:25	20:30	0:05	10		Survey @ 10551' - 90.3° Inc - 184.4° Azi	5	10,610.00
20:30	20:45	0:15	2	S	Drilling Sliding F/ 10610' - T/ 10630' @ 90L	5	10,630.00
20:45	21:05	0:20	2	R	Drilling Rotary F/ 10630' - T/ 10704'	5	10,704.00
21:05	21:10	0:05	10		Survey @ 10645' - 90.7° Inc - 181.7° Azi	5	10,704.00
21:10	21:40	0:30	2	R	Drilling Rotary F/ 10704' - T/ 10799'	5	10,799.00
21:40	21:45	0:05	10		Survey @ 10740' - 87.5° Inc - 179.4° Azi	5	10,799.00
21:45	22:05	0:20	2	R	Drilling Rotary F/ 10799' - T/ 10893'	5	10,893.00
22:05	22:10	0:05	10		Survey @ 10834' - 90.6° Inc - 182.7° Azi	5	10,893.00
22:10	22:30	0:20	2	R	Drilling Rotary F/ 10893' - T/ 10987'	5	10,987.00
22:30	22:35	0:05	10		Survey @ 10928' - 88.8° Inc - 181.6° Azi	5	10,987.00
22:35	23:05	0:30	2	R	Drilling Rotary F/ 10987' - T/ 11081'	5	11,081.00
23:05	23:10	0:05	10		Survey @ 11022' - 87.9° Inc - 180.8° Azi	5	11,081.00
23:10	23:20	0:10	2	S	Drilling Sliding F/ 11081' - T/ 11093' @ 20L	5	11,093.00
23:20	23:45	0:25	2	R	Drilling Rotary F/ 11093' - T/ 11175'	5	11,175.00
23:45	23:50	0:05	10		Survey @ 11116' - 92.0° Inc - 181.5° Azi	5	11,175.00
23:50	0:00	0:10	2	R	Drilling Rotary F/ 11175' - T/ 11211'	5	11,211.00

Description

Item Cost Total



Daily Drilling Report

Description	Item Cost	Total
CLAW 250 Motor Rental (Day)	: 1.0 * \$2000.00	\$2,000.00
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00
Daily cost	\$10,500.00	Total Well Cost : \$140,100.00

Morning Activity

Drilling Curve

TFO: 152 (BHA #5)

Mag Dec: 6.03 (Total Mag Correction)

Bottom Line, Total Mag Correction Verified @ 10146' By Tony/Rich (17:30)

Bottom Line, Total Mag Correction Verified @ 7885' By Chris/Mike (06:00)



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jul-02-19 Report # : 11 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 11,211		Daily Drilling Time: 21:0		Client Reps: Brent Cockerman,David Blackmon							
Tour End Depth: 14,608		Daily Circulating Time: 0:00		Dir Drillers: Alberto Gonzalez,Tony Hatfield							
Tour 24hr Interval: 3,397		Daily Reaming Time: 0:00		MWD Ops: Mark Gross,Rich Williams							
		Motor Hours this run: 21.00									
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.2	56	0	0	5.6	0.1		0	29	25	68.8
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
35	180	230	130	4,365	825	725					
BHA 5 Motor C2-171166 Cumulative Hrs 40.250											
BHA5 : 8.75 " PDC, 7" Claw250 FBH @ 1.83° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											
DAILY ACTIVITY											
0:00	0:15	0:15	2	R	Drilling Rotary F/ 11211' - T/ 11269'				5	11,269.00	
0:15	0:20	0:05	10		Survey @ 11210' - 89.7° Inc - 179.7° Azi				5	11,269.00	
0:20	0:40	0:20	2	R	Drilling Rotary F/ 11269' - T/ 11363'				5	11,363.00	
0:40	0:45	0:05	10		Survey @ 11304' - 90.2° Inc - 180.9° Azi				5	11,363.00	
0:45	1:05	0:20	2	R	Drilling Rotary F/ 11363' - T/ 11457'				5	11,457.00	
1:05	1:10	0:05	10		Survey @ 11398' - 87.2° Inc - 178.3° Azi				5	11,457.00	
1:10	1:25	0:15	2	S	Drilling Sliding F/ 11457' - T/ 11469' @ HS				5	11,469.00	
1:25	1:50	0:25	2	R	Drilling Rotary F/ 11469' - T/ 11552'				5	11,552.00	
1:50	1:55	0:05	10		Survey @ 11493' - 89.6° Inc - 178.7° Azi				5	11,552.00	
1:55	2:15	0:20	2	R	Drilling Rotary F/ 11552' - T/ 11646'				5	11,646.00	
2:15	2:20	0:05	10		Survey @ 11587' - 87.0° Inc - 176.4° Azi				5	11,646.00	
2:20	2:35	0:15	2	S	Drilling Sliding F/ 11646' - T/ 11666' @ 45R				5	11,666.00	
2:35	2:50	0:15	2	R	Drilling Rotary F/ 11666' - T/ 11740'				5	11,740.00	
2:50	2:55	0:05	10		Survey @ 11681' - 92.8° Inc - 180.3° Azi				5	11,740.00	
2:55	3:20	0:25	2	R	Drilling Rotary F/ 11740' - T/ 11835'				5	11,835.00	
3:20	3:25	0:05	10		Survey @ 11776' - 92.5° Inc - 179.7° Azi				5	11,835.00	
3:25	4:35	1:10	2	R	Drilling Rotary F/ 11835' - T/ 11929'				5	11,929.00	
4:35	4:40	0:05	10		Survey @ 11870' - 89.6° Inc - 178.5° Azi				5	11,929.00	
4:40	4:50	0:10	2	S	Drilling Sliding F/ 11929' - T/ 11944' @ 90R				5	11,944.00	
4:50	5:20	0:30	2	R	Drilling Rotary F/ 11944' - T/ 12023'				5	12,023.00	
5:20	5:25	0:05	10		Survey @ 11964' - 87.6° Inc - 179.0° Azi				5	12,023.00	
5:25	6:10	0:45	2	R	Drilling Rotary F/ 12023' - T/ 12117'				5	12,117.00	
6:10	6:15	0:05	10		Survey @ 12058' - 91.1° Inc - 181.0° Azi				5	12,117.00	
6:15	6:25	0:10	2	S	Drilling Sliding F/ 12117' - T/ 12129' @ 150R				5	12,129.00	
6:25	7:05	0:40	2	R	Drilling Rotary F/ 12129' - T/ 12211'				5	12,211.00	
7:05	7:10	0:05	10		Survey @ 12152' - 89.1° Inc - 181.3° Azi				5	12,211.00	
7:10	7:35	0:25	2	R	Drilling Rotary F/ 12211' - T/ 12305'				5	12,305.00	
7:35	7:40	0:05	10		Survey @ 12246' - 91.1° Inc - 183.0° Azi				5	12,305.00	
7:40	7:50	0:10	2	S	Drilling Sliding F/ 12305' - T/ 12320' @ 180				5	12,320.00	
7:50	8:10	0:20	2	R	Drilling Rotary F/ 12320' - T/ 12400'				5	12,400.00	
8:10	8:15	0:05	10		Survey @ 12341' - 90.9° Inc - 185.0° Azi				5	12,400.00	
8:15	8:30	0:15	2	S	Drilling Sliding F/ 12400' - T/ 12420' @ 150L				5	12,420.00	
8:30	9:10	0:40	2	R	Drilling Rotary F/ 12420' - T/ 12493'				5	12,493.00	
9:10	9:15	0:05	10		Survey @ 12434' - 88.5° Inc - 183.7° Azi				5	12,493.00	
9:15	9:30	0:15	2	S	Drilling Sliding F/ 12493' - T/ 12509' @ 180				5	12,509.00	
9:30	10:10	0:40	2	R	Drilling Rotary F/ 12509' - T/ 12588'				5	12,588.00	
10:10	10:15	0:05	10		Survey @ 12529' - 86.8° Inc - 184.4° Azi				5	12,588.00	



Daily Drilling Report

10:15	10:45	0:30	2	R	Drilling Rotary F/ 12588' - T/ 12682'	5	12,682.00
10:45	10:50	0:05	10		Survey @ 12623' - 86.9° Inc - 184.7° Azi	5	12,682.00
10:50	11:05	0:15	2	S	Drilling Sliding F/ 12682' - T/ 12704' @ 45L	5	12,704.00
11:05	11:35	0:30	2	R	Drilling Rotary F/ 12704' - T/ 12776'	5	12,776.00
11:35	11:40	0:05	10		Survey @ 12717' - 92.4° Inc - 185.4° Azi	5	12,776.00
11:40	12:00	0:20	2	S	Drilling Sliding F/ 12776' - T/ 12796' @ 130L	5	12,796.00
12:00	12:25	0:25	2	R	Drilling Rotary F/ 12796' - T/ 12870'	5	12,870.00
12:25	12:30	0:05	10		Survey @ 12811' - 91.1° Inc - 182.6° Azi	5	12,870.00
12:30	12:55	0:25	2	R	Drilling Rotary F/ 12870' - T/ 12964'	5	12,964.00
12:55	13:00	0:05	10		Survey @ 12905' - 90.6° Inc - 184.3° Azi	5	12,964.00
13:00	13:10	0:10	2	S	Drilling Sliding F/ 12964' - T/ 12989' @ 100L	5	12,989.00
13:10	13:35	0:25	2	R	Drilling Rotary F/ 12989' - T/ 13059'	5	13,059.00
13:35	13:40	0:05	10		Survey @ 13000' - 89.5° Inc - 182.5° Azi	5	13,059.00
13:40	14:00	0:20	2	S	Drilling Sliding F/ 13059' - T/ 13084' @ 115L	5	13,084.00
14:00	14:25	0:25	2	R	Drilling Rotary F/ 13084' - T/ 13153'	5	13,153.00
14:25	14:30	0:05	10		Survey @ 13094' - 89.3° Inc - 179.8° Azi	5	13,153.00
14:30	14:50	0:20	2	R	Drilling Rotary F/ 13153' - T/ 13246'	5	13,246.00
14:50	14:55	0:05	10		Survey @ 13187' - 92.2° Inc - 180.9° Azi	5	13,246.00
14:55	15:10	0:15	2	S	Drilling Sliding F/ 13246' - T/ 13273' @ 145L	5	13,273.00
15:10	15:30	0:20	2	R	Drilling Rotary F/ 13273' - T/ 13341'	5	13,341.00
15:30	15:35	0:05	10		Survey @ 13282' - 89.8° Inc - 180.1° Azi	5	13,341.00
15:35	16:05	0:30	2	R	Drilling Rotary F/ 13341' - T/ 13435'	5	13,435.00
16:05	16:10	0:05	10		Survey @ 13376' - 90.9° Inc - 180.2° Azi	5	13,435.00
16:10	16:30	0:20	2	R	Drilling Rotary F/ 13435' - T/ 13529'	5	13,529.00
16:30	16:35	0:05	10		Survey @ 13470' - 90.4° Inc - 180.2° Azi	5	13,529.00
16:35	16:55	0:20	2	R	Drilling Rotary F/ 13529' - T/ 13623'	5	13,623.00
16:55	17:00	0:05	10		Survey @ 13564' - 89.8° Inc - 179.3° Azi	5	13,623.00
17:00	17:25	0:25	2	R	Drilling Rotary F/ 13623' - T/ 13717'	5	13,717.00
17:25	17:30	0:05	10		Survey @ 13658' - 91.1° Inc - 180.5° Azi	5	13,717.00
17:30	18:00	0:30	2	R	Drilling Rotary F/ 13717' - T/ 13811'	5	13,811.00
18:00	18:05	0:05	10		Survey @ 13752' - 90.8° Inc - 179.4° Azi	5	13,811.00
18:05	18:25	0:20	2	R	Drilling Rotary F/ 13811' - T/ 13905'	5	13,905.00
18:25	18:30	0:05	10		Survey @ 13846' - 90.1° Inc - 178.1° Azi	5	13,905.00
18:30	18:55	0:25	2	R	Drilling Rotary F/ 13905' - T/ 13998'	5	13,998.00
18:55	19:00	0:05	10		Survey @ 13939' - 91.5° Inc - 179.5° Azi	5	13,998.00
19:00	19:20	0:20	2	S	Drilling Sliding F/ 13998' - T/ 14018' @ 120R	5	14,018.00
19:20	19:45	0:25	2	R	Drilling Rotary F/ 14018' - T/ 14093'	5	14,093.00
19:45	19:50	0:05	10		Survey @ 14034' - 90.1° Inc - 181.9° Azi	5	14,093.00
19:50	20:20	0:30	2	R	Drilling Rotary F/ 14093' - T/ 14186'	5	14,186.00
20:20	20:25	0:05	10		Survey @ 14127' - 91.5° Inc - 182.6° Azi	5	14,186.00
20:25	20:40	0:15	2	S	Drilling Sliding F/ 14186' - T/ 14198' @ 180	5	14,186.00
20:40	21:05	0:25	2	R	Drilling Rotary F/ 14198' - T/ 14280'	5	14,280.00
21:05	21:10	0:05	10		Survey @ 14221' - 88.5° Inc - 182.4° Azi	5	14,280.00
21:10	22:05	0:55	2	R	Drilling Rotary F/ 14280' - T/ 14374'	5	14,374.00
22:05	22:10	0:05	10		Survey @ 14315' - 89.2° Inc - 182.8° Azi	5	14,374.00
22:10	22:50	0:40	2	R	Drilling Rotary F/ 14374' - T/ 14468'	5	14,468.00
22:50	22:55	0:05	10		Survey @ 14409' - 92.8° Inc - 184.5° Azi	5	14,468.00
22:55	23:15	0:20	2	S	Drilling Sliding F/ 14468' - T/ 14488' @ 140L	5	14,488.00
23:15	23:40	0:25	2	R	Drilling Rotary F/ 14488' - T/ 14562'	5	14,562.00
23:40	23:45	0:05	10		Survey @ 14503' - 89.4° Inc - 181.2° Azi	5	14,562.00
23:45	0:00	0:15	2	R	Drilling Rotary F/ 14562' - T/ 14608'	5	14,608.00

Description	Item Cost	Total	Description	Item Cost	Total
CLAW 250 Motor Rental (Day)	: 1.0 * \$2000.00	\$2,000.00			
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00			
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00			
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00			
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00			



Drilling lateral section.

TFO: 152 (BHA #5)
Mag Dec: 6.03 (Total Mag Correction)

Bottom Line, Total Mag Correction Verified @ 11870' By Albert/Mark (05:00)
Bottom Line, Total Mag Correction Verified @ 13623' By Tony/Rich (17:30)



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jul-03-19 Report # : 12 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 14,608		Daily Drilling Time: 2:40		Client Reps: David Blackmon, Shannon Bellard							
Tour End Depth: 14,977		Daily Circulating Time: 2:10		Dir Drillers: Alberto Gonzalez, Tony Hatfield							
Tour 24hr Interval: 369		Daily Reaming Time: 0:00		MWD Ops: Mark Gross, Rich Williams							
		Motor Hours this run: 4.83									
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.3	56	0	0	6.7	0.1		0	29	25	70.2
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
32	180	250	105	4,800	5,480	725					
BHA 5 Motor C2-171166 Cumulative Hrs 45.083											
BHA5 : 8.75 " PDC, 7" Claw250 FBH @ 1.83° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											
DAILY ACTIVITY											
0:00	0:15	0:15	2	R	Drilling Rotary F/ 14608' - T/ 14656'			5	14,656.00		
0:15	0:20	0:05	10		Survey @ 14597' - 90.6° Inc - 182.1° Azi			5	14,656.00		
0:20	0:50	0:30	2	R	Drilling Rotary F/ 14656' - T/ 14750'			5	14,750.00		
0:50	0:55	0:05	10		Survey @ 14691' - 90.4° Inc - 182.1° Azi			5	14,750.00		
0:55	1:25	0:30	2	R	Drilling Rotary F/ 14750' - T/ 14844'			5	14,844.00		
1:25	1:30	0:05	10		Survey @ 14785' - 90.3° Inc - 182.2° Azi			5	14,844.00		
1:30	2:15	0:45	2	R	Drilling Rotary F/ 14844' - T/ 14938'			5	14,938.00		
2:15	2:20	0:05	10		Survey @ 14879' - 92.7° Inc - 184.6° Azi			5	14,938.00		
2:20	2:45	0:25	2	S	Drilling Sliding F/ 14938' - T/ 14958' @ 125L			5	14,938.00		
2:45	3:00	0:15	2	R	Drilling Rotary F/ 14958' - T/ 14977'			5	14,977.00		
3:00	5:10	2:10	5		Circulate / Flow Check (Possible Snapped Motor Driveshaft - Lost All Differential, ROP and Torque Dropped)			5	14,977.00		
5:10	15:15	10:05	6a		Trip Out To Surface			5	14,977.00		
15:15	16:20	1:05	20		L/D BHA #5			5	14,977.00		
16:20	18:10	1:50	20		P/U BHA #6			5	14,977.00		
18:10	22:45	4:35	6		Trip In			5	14,977.00		
22:45	0:00	1:15	9		Slip / Cut Drill Line (13 Wraps)			5	14,977.00		
Description		Item Cost		Total		Description		Item Cost		Total	
CLAW 250 Motor Rental (Day)		: 1.0 * \$2000.00		\$2,000.00							
CLAW Motor Reline (Each)		: 1.0 * \$12000.00		\$12,000.00							
Daily Operating Rate (Rigs 1-2) (Day)		: 1.0 * \$7000.00		\$7,000.00							
EM/MWD Technology (Day)		: 1.0 * \$600.00		\$600.00							
Gamma Ray Logging While Drilling (If Required) (Day)		: 1.0 * \$500.00		\$500.00							
Motor Redress (Each)		: 1.0 * \$1500.00		\$1,500.00							
Preferred DD Incentive (Day/Man)		: 2.0 * \$200.00		\$400.00							
Daily cost		\$24,000.00				Total Well Cost :		\$174,600.00			
Morning Activity											
Drilling lateral section.											
TFO: 152 (BHA #5)											
Mag Dec: 6.03 (Total Mag Correction)											
Bottom Line, Total Mag Correction Verified @ 14977' By Albert/Mark (03:00)											



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jul-04-19 Report # : 13 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 14,977		Daily Drilling Time: 5:10		Client Reps: David Blackmon, Shannon Bellard							
Tour End Depth: 15,410		Daily Circulating Time: 4:10		Dir Drillers: Alberto Gonzalez, Tony Hatfield							
Tour 24hr Interval: 433		Daily Reaming Time: 8:5		MWD Ops: Mark Gross, Rich Williams							
		Motor Hours this run: 17.42									
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.5	60	0	0	7.1	0.1		0	30	26	71
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
0	180	250	105	0	0	0					
BHA 6 Motor C2-171079 Cumulative Hrs 17.417											
BHA6 : 8.75" PDC, 7" Claw250 Fixed @ 1.75° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											
DAILY ACTIVITY											
0:00	1:00	1:00	9		Slip / Cut Drill Line (13 Wraps)			6	14,977.00		
1:00	2:00	1:00	6		Trip In / 7980'			6	14,977.00		
2:00	3:10	1:10	5		Wait On Weather			6	14,977.00		
3:10	4:35	1:25	6		Trip In F/ 10392'			6	14,977.00		
4:35	10:50	6:15	3		Wash/Ream Tight Spots			6	14,977.00		
10:50	12:30	1:40	6		Trip In F/ 10542' - T/ 10542'			6	14,977.00		
12:30	14:20	1:50	3		Reaming / Washing Tight spots			6	14,977.00		
14:20	15:25	1:05	6		Trip In F/ 10542' - T/ 14802'			6	14,977.00		
15:25	18:25	3:00	5		Circulating / wash to bottom			6	14,977.00		
18:25	19:05	0:40	2	R	Drilling Rotary F/ 14977' - T/ 15033'			6	15,033.00		
19:05	19:10	0:05	10		Survey @ 14974' - 89.9° Inc - 182.8° Azi			6	15,033.00		
19:10	20:05	0:55	2	R	Drilling Rotary F/ 15033' - T/ 15128'			6	15,128.00		
20:05	20:10	0:05	10		Survey @ 15069' - 89.6° Inc - 182.9° Azi			6	15,128.00		
20:10	21:25	1:15	2	R	Drilling Rotary F/ 15128' - T/ 15222'			6	15,222.00		
21:25	21:30	0:05	10		Survey @ 15163' - 89.5° Inc - 183.4° Azi			6	15,222.00		
21:30	22:20	0:50	2	S	Drilling Sliding F/ 15222' - T/ 15244' @ 80L			6	15,244.00		
22:20	23:15	0:55	2	R	Drilling Rotary F/ 15244' - T/ 15316'			6	15,316.00		
23:15	23:20	0:05	10		Survey @ 15257' - 90.3° Inc - 181.7° Azi			6	15,316.00		
23:20	23:55	0:35	2	R	Drilling Rotary F/ 15316' - T/ 15410'			6	15,410.00		
23:55	0:00	0:05	10		Survey @ 15351' - 88.3° Inc - 180.1° Azi			6	15,410.00		
Description		Item Cost		Total		Description		Item Cost		Total	
CLAW 250 Motor Rental (Day)		: 1.0 * \$2000.00		\$2,000.00							
Daily Operating Rate (Rigs 1-2) (Day)		: 1.0 * \$7000.00		\$7,000.00							
EM/MWD Technology (Day)		: 1.0 * \$600.00		\$600.00							
Gamma Ray Logging While Drilling (If Required) (Day)		: 1.0 * \$500.00		\$500.00							
Preferred DD Incentive (Day/Man)		: 2.0 * \$200.00		\$400.00							
Daily cost		\$10,500.00				Total Well Cost :		\$185,100.00			
Morning Activity											
TIH											
TFO: 326 (BHA #6)											
Mag Dec: 6.03 (Total Mag Correction)											
Bottom Line, Total Mag Correction Verified @ 14977' By Albert/Mark (05:00)											
Bottom Line, Total Mag Correction Verified @ 14977' By Tony/Rich (17:30)											



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jul-05-19 Report # : 14 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth:	15,410	Daily Drilling Time:	19:10	Client Reps: David Blackmon, Shannon Bellard							
Tour End Depth:	17,370	Daily Circulating Time:	3:5	Dir Drillers: Alberto Gonzalez, Tony Hatfield							
Tour 24hr Interval:	1,960	Daily Reaming Time:	0:00	MWD Ops: Mark Gross, Rich Williams							
		Motor Hours this run:	22.25								
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	10.9	62	0	0	7.4	0.1		0	30	33	70.5
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
35	180	265	80	4,375	590	640					
BHA 6 Motor C2-171079 Cumulative Hrs 39.667											
BHA6 : 8.75 " PDC, 7" Claw250 Fixed @ 1.75° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											

DAILY ACTIVITY							
0:00	0:10	0:10	2	R	Drilling Rotary F/ 15410' - T/ 15422'	6	15,422.00
0:10	0:40	0:30	2	S	Drilling Sliding F/ 15422' - T/ 15444' @ 20L	6	15,444.00
0:40	1:15	0:35	2	R	Drilling Rotary F/ 15444' - T/ 15504'	6	15,504.00
1:15	1:20	0:05	10		Survey @ 15445' - 90.3° Inc - 181.7° Azi	6	15,504.00
1:20	2:05	0:45	2	R	Drilling Rotary F/ 15504' - T/ 15598'	6	15,598.00
2:05	2:10	0:05	10		Survey @ 15539' - 90.0° Inc - 179.5° Azi	6	15,598.00
2:10	2:25	0:15	2	S	Drilling Sliding F/ 15598' - T/ 15613' @ 30L	6	15,613.00
2:25	3:10	0:45	2	R	Drilling Rotary F/ 15613' - T/ 15692'	6	15,692.00
3:10	3:15	0:05	10		Survey @ 15633' - 90.3° Inc - 178.8° Azi	6	15,692.00
3:15	3:50	0:35	2	S	Drilling Sliding F/ 15692' - T/ 15707' @ HS	6	15,707.00
3:50	4:20	0:30	2	R	Drilling Rotary F/ 15707' - T/ 15786'	6	15,786.00
4:20	4:50	0:30	5		Relog Gamma	6	15,786.00
4:50	4:55	0:05	10		Survey @ 15727' - 91.4° Inc - 178.2° Azi	6	15,786.00
4:55	5:55	1:00	2	R	Drilling Rotary F/ 15786' - T/ 15880'	6	15,880.00
5:55	6:00	0:05	10		Survey @ 15821' - 89.3° Inc - 177.0° Azi	6	15,880.00
6:00	6:30	0:30	2	S	Drilling Sliding F/ 15880' - T/ 15905' @ 40R	6	15,905.00
6:30	7:15	0:45	2	R	Drilling Rotary F/ 15905' - T/ 15975'	6	15,975.00
7:15	7:20	0:05	10		Survey @ 15916' - 91.6° Inc - 177.6° Azi	6	15,975.00
7:20	7:50	0:30	2	S	Drilling Sliding F/ 15975' - T/ 16005' @ 90R	6	16,005.00
7:50	8:30	0:40	2	R	Drilling Rotary F/ 16005' - T/ 16069'	6	16,069.00
8:30	8:35	0:05	10		Survey @ 16010' - 89.7° Inc - 180.3° Azi	6	16,069.00
8:35	9:05	0:30	2	S	Drilling Sliding F/ 16069' - T/ 16094' @ 45R	6	16,094.00
9:05	9:55	0:50	2	R	Drilling Rotary F/ 16094' - T/ 16163'	6	16,163.00
9:55	10:00	0:05	10		Survey @ 16104' - 91.4° Inc - 181.8° Azi	6	16,163.00
10:00	10:35	0:35	2	R	Drilling Rotary F/ 16163' - T/ 16257'	6	16,257.00
10:35	10:40	0:05	10		Survey @ 16198' - 91.0° Inc - 180.8° Azi	6	16,257.00
10:40	11:20	0:40	2	R	Drilling Rotary F/ 16257' - T/ 16350'	6	16,350.00
11:20	11:20	0:00	10		Survey @ 16291' - 89.5° Inc - 181.4° Azi	6	16,350.00
11:20	11:55	0:35	2	s	Drilling Sliding F/ 16350' - T/ 16375' @ 45R	6	16,375.00
11:55	12:30	0:35	2	R	Drilling Rotary F/ 16375' - T/ 16444'	6	16,444.00
12:30	12:35	0:05	10		Survey @ 16385' - 91.9° Inc - 183.6° Azi	6	16,444.00
12:35	13:15	0:40	2	R	Drilling Rotary F/ 16444' - T/ 16538'	6	16,538.00
13:15	13:20	0:05	10		Survey @ 16479' - 91.1° Inc - 183.2° Azi	6	16,538.00
13:20	14:00	0:40	2	R	Drilling Rotary F/ 16538' - T/ 16632'	6	16,632.00
14:00	14:05	0:05	10		Survey @ 16573' - 90.1° Inc - 176.6° Azi	6	16,632.00
14:05	14:45	0:40	2	S	Drilling Sliding F/ 16632' - T/ 16662' @ 90R	6	16,662.00
14:45	15:00	0:15	2	R	Drilling Rotary F/ 16662' - T/ 16667'	6	16,667.00
15:00	15:05	0:05	10		Checkshot @ 16608' - 89.1° Inc - 175.2° Azi	6	16,667.00
15:05	15:30	0:25	2	S	Drilling Sliding F/ 16667' - T/ 16682' @ 50R	6	16,682.00
15:30	16:00	0:30	2	R	Drilling Rotary F/ 16682' - T/ 16726'	6	16,726.00
16:00	16:05	0:05	10		Survey @ 16667' - 89.1° Inc - 179.5° Azi	6	16,726.00
16:05	16:40	0:35	2	R	Drilling Rotary F/ 16726' - T/ 16820'	6	16,820.00
16:40	16:45	0:05	10		Survey @ 16761' - 89.7° Inc - 181.0° Azi	6	16,820.00
16:45	17:20	0:35	2	R	Drilling Rotary F/ 16820' - T/ 16914'	6	16,914.00
17:20	17:25	0:05	10		Survey @ 16855' - 89.5° Inc - 181.5° Azi	6	16,914.00
17:25	18:05	0:40	2	R	Drilling Rotary F/ 16914' - T/ 17008'	6	17,008.00
18:05	18:10	0:05	10		Survey @ 16949' - 91.9° Inc - 184.6° Azi	6	17,008.00
18:10	18:45	0:35	2	R	Drilling Rotary F/ 17008' - T/ 17102'	6	17,102.00
18:45	18:50	0:05	10		Survey @ 17043' - 91.7° Inc - 184.8° Azi	6	17,102.00
18:50	19:45	0:55	2	R	Drilling Rotary F/ 17102' - T/ 17145'	6	17,145.00
19:45	19:50	0:05	10		Survey @ 17163' - 90.2° Inc - 183.1° Azi	6	17,145.00
19:50	20:35	0:45	2	R	Drilling Rotary F/ 17145' - T/ 17289'	6	17,289.00
20:35	20:40	0:05	10		Survey @ 17230' - 88.4° Inc - 182.7° Azi	6	17,289.00
20:40	21:20	0:40	2	R	Drilling Rotary F/ 17289' - T/ 17370'	6	17,370.00
21:20	21:25	0:05	10		Survey @ 17311' - 90.2° Inc - 184.7° Azi	6	17,370.00
21:25	0:00	2:35	5		Circulating	6	17,370.00
Description					Item Cost	Total	



Daily Drilling Report

Description	Item Cost	Total
CLAW 250 Motor Rental (Day)	: 1.0 * \$2000.00	\$2,000.00
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00
Daily cost	\$10,500.00	Total Well Cost : \$195,600.00

Morning Activity

TIH

TFO: 326 (BHA #6)

Mag Dec: 6.03 (Total Mag Correction)

Bottom Line, Total Mag Correction Verified @ 15786' By Albert/Mark (05:00)

Bottom Line, Total Mag Correction Verified @ 16914' By Tony/Rich (17:30)



Daily Drilling Report

Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jul-06-19 Report # : 15 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 17,370		Daily Drilling Time: 0:00		Client Reps: David Blackmon, Shannon Bellard							
Tour End Depth: 17,370		Daily Circulating Time: 1:45		Dir Drillers: Alberto Gonzalez, Tony Hatfield							
Tour 24hr Interval: 0		Daily Reaming Time: 0:00		MWD Ops: Mark Gross, Rich Williams							
		Motor Hours this run: 1.75									
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
OBM	11.1	62	0	0	7.5	0.1		0	30	33	70
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
0	0	0	0	0	0	0					
BHA 6 Motor C2-171079 Cumulative Hrs 41.417											
BHA6 : 8.75 " PDC, 7" Claw250 Fixed @ 1.75° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											
DAILY ACTIVITY											
0:00	1:45	1:45	5	Circulating				6	17,370.00		
1:45	22:00	20:15	6a	Trip Out To Surface, L/D Drill Pipe				6	17,370.00		
22:00	0:00	2:00	20	L/D Directional Tools				6	17,370.00		
Cost Summary											
Description	Item Cost	Total	Description	Item Cost	Total						
CLAW 250 Motor Rental (Day)	: 1.0 * \$2000.00	\$2,000.00									
CLAW Motor Reline (Each)	: 1.0 * \$12000.00	\$12,000.00									
Daily Operating Rate (Rigs 1-2) (Day)	: 1.0 * \$7000.00	\$7,000.00									
EM/MWD Technology (Day)	: 1.0 * \$600.00	\$600.00									
Gamma Ray Logging While Drilling (If Required) (Day)	: 1.0 * \$500.00	\$500.00									
Motor Redress (Each)	: 1.0 * \$1500.00	\$1,500.00									
Preferred DD Incentive (Day/Man)	: 2.0 * \$200.00	\$400.00									
Daily cost		\$24,000.00	Total Well Cost :		\$219,600.00						
Morning Activity											
Well TD'd. POOH, L/D Drill Pipe.											
TFO: 326 (BHA #6)											
Mag Dec: 6.03 (Total Mag Correction)											
Bottom Line, Total Mag Correction Verified @ 17370' By Albert/Mark (05:00)											



Client : Sable Permian Resources Well Name : University Owens 1-6 Alloc 33 #33HK Location : Reagan County Texas Field : PERMIAN Job Number : 198135 AFE # 1550744						Date : Jul-07-19 Report # : 16 Rig : Ensign 786 UWI : 42-383-40619 Well License : 852545					
DAILY PERFORMANCE		Field Computer :				Field Phone : 0					
Tour Start Depth: 17,370		Daily Drilling Time: 0:00		Client Reps: David Blackmon,Shannon Bellard							
Tour End Depth: 17,370		Daily Circulating Time: 0:00		Dir Drillers: Alberto Gonzalez,Tony Hatfield							
Tour 24hr Interval: 0		Daily Reaming Time: 0:00		MWD Ops: Mark Gross,Rich Williams							
		Motor Hours this run: 0.00									
DRILLING FLUID											
MudType	Density	Viscosity	Fluid Loss	PH	Solids %	Sand %	N2	Mist g/m :	PV	YP	Oil %
	0	0	0	0	0	0		0	0	0	0
DRILLING PERFORMANCE											
WOB	Hook Load	P/U Weight	S/O Weight	Pump Press	Diff Press	Flow Rate (g/min) :					
0	0	0	0	0	0	0					
BHA6 : 8.75 " PDC, 7" Claw250 Fixed @ 1.75° w/ Slick Sleeve Lobe: Stages:0, 8 1/8" NM Stabilizer, NM Slick DC, NM Short Flex DC, Double Pin, Gap Sub, NM Flex DC, NM Slick DC, 28 Stands 5" DP, NOV Agitator											
DAILY ACTIVITY											
0:00	1:00	1:00	20		L/D Directional Tools				6	17,370.00	
1:00	3:00	2:00	20		Download MWD Logs, Load Truck				0	17,370.00	
3:00	0:00	21:00	22		Leave Location				0	17,370.00	
DescriptionItem CostTotalDescriptionItem CostTotal											
Daily cost		\$0.00		Total Well Cost :		\$219,600.00					
Morning Activity											
Finish L/D BHA, Download Logs, Load Truck											

Section 3

BHA Data Sheets

CATHEDRAL ENERGY SERVICES

4701 United Drive

Oklahoma City, OK 73179

Office Phone: 405.261.6011





Bottom Hole Assembly

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 1
WellName University Owens 1-6 Alloc 33 #33HK	Date In : Jun-22-2019	Depth In : 961	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-24-2019	Depth Out : 3414	MWD Offset : 95
BHA Objective: Drill 12.25" Vertical/Nudge Section			

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	SPL616 (9x20's)	47913	12.25			6 5/8 REG				1.5	1.5
1	7/8 4.0 Stg. FBH @ 1.83 w/11.5" Stabilizer	C2-203039	8.18		Slick	6 5/8 REG	B	6 5/8 REG	B	27.64	29.14
2	11.00" NM Stabilizer	AWNS-5270-R	8.44	3.01	2.65	6 5/8 REG	B	6 5/8 REG	P	7.3	36.44
3	NM Slick Pony DC	800-427	8.16	3.77	1.80	6 5/8 REG	B	6 5/8 REG	P	11.45	47.89
4	NM Slick DC	800-578	8.33	3.81	1.74	6 5/8 REG	B	6 5/8 REG	P	30.73	78.62
5	Gap Sub	800-602	8.19	4.02	0.84	6 5/8 REG	B	6 5/8 REG	P	5.76	84.38
6	NM Slick DC	AWS800-30-1765-R	8.15	3.78	Slick	6 5/8 REG	B	6 5/8 REG	P	27.97	112.35
7	NM Slick DC	AWS800-30-2708-R	8.13	3.79	Slick	6 5/8 REG	B	6 5/8 REG	P	29.12	141.47
8	NM Slick DC	800-259	8.05	3.73	1.38	6 5/8 REG	B	6 5/8 REG	P	29.45	170.92
9	NM X/O Sub (4.5 IF x 6 5/8 REG)	800-684	6.91	2.83	1.63	4 1/2 IF	B	6 5/8 REG	P	4.09	175.01
10	5 Stands 5" HWDP	15 Joints 5" HWDP	6.31	3.12	1.75	4 1/2 IF	B	4 1/2 IF	P	458.52	633.53

Performance

Drilling Hours : 29.42	Inc In : 0.8	Interval : 2453
Circulating Hours : 1.58	Inc Out : 15.3	ROP : 83.39
Reaming Hours :	Azimuth In : 254.9	Feet Rotated : 2,267.00
Motor Hours this run : 31.00	Azimuth Out : 205.7	Feet Oriented : 186.00
Pressure Off Bottom : 2200	W.O.B. Sliding : 25	BHA Performance : 12
Pressure On Bottom : 2800	W.O.B. Rotating : 33	Proposed Build Rate : 2
Sliding Hours : 5.92	Rotating Hours : 23.50	

Motor

Motor Size : 8	Motor Bend : 1.83	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C2-203039	Bit To Bend Distance : 5.30	Flow Rate (g/m) : 900	Static Temp :
Lobes : 7/8	Motor Add On : Screw on stab	Table (RPM) : 50.00	Mist (g/m) : 0
Stages : 4.00	Effective Diameter : 11.50	Total Bit Speed : 194.00	N2 (ft³/min) : 0
Motor (Rev/g) : 0.160	Motor Ctr Stab :		
Cum Motor Hours : 31.00	Rig Down Time :		
Motor Failure ? No			
Failure Code :			
Failure Description:			

Bit	Pump	Formations Drilled
Manufacturer : Ulterra TFA: 2.761	Pump 1 : Continental-Emsco	
Type : PDC	Type : FS-1600	
Style : SPL616 (9x20's)	Pump 2 : Continental-Emsco	
Jets : 20,20,20,20,20,20,20	Type : FS-1600	
Dull Condition : 1,1,NO,,,8.0000,,BHA		

Reason for POOH

Trip for Bha

Run Summary

Vertical/Nudge:

Built Nudge up to 16° & BHA performed fair during this run prior to the motor chunking rubbers. Nudge took seven slides to build, with motor averaging 12's° throughout the run. Angle held pretty good for the most part until 3300' it started to drop out. Assembly would build and walk right while rotating. ROP averaged very well around 250-300' for the most of the intermediate section. Started noticing differential spikes while rotating. Within a couple of hundred feet the differential spikes got worse, and the rubbers continued to flow across the shakers. The ROP continued to drop drastically until Sable finally decided to POOH. Starting @ 3200 we experienced multiple stalls up to 1200 PSI. We also retrieved rubber from the shaker. At 3414 after the ROP slowed / Fighting pressure spikes Sable decided to POOH. No real issues with this assembly apart from the motor chunking rubbers causing us to have to POOH.

Upon surface inspection the motor drained well and had minimal play in the bit box, but we found four plugged jets. No signs of wear on the wear pad. Bit grading was a 1-1 and had some chipped cutters on one blade and in gauge row.

Performance Motor 7/8, 4.0 Stg. w/ 11.50" Stabilizer Sleeve

Fixed @ 1.83° Bit to Bend: 5.30'

Flow Range: 300-900 GPM Motor RPG: 0.16

Max Rotary: 50 RPM Max Toque: 12,693

Max Diff: 784 psi Max WOB: 141,000

Bit to Survey: 58'

Bit to Gamma: 51.35'

EM Power: 6-18

Battery Life: 3 Batteries @ 140 Hours (5.6 Days)

Magnetic Spacing:

MWD X-Over: 4°

Above: 115.28' (Need 90')

Below: 26.50' (Need 25')



Bottom Hole Assembly

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 2
WellName University Owens 1-6 Alloc 33 #33HK	Date In : Jun-24-2019	Depth In : 3414	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-26-2019	Depth Out : 5802	MWD Offset : 314
BHA Objective: Drill 12.25" Nudge/Vertical Section			

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	SPL616 (9x20's)	47913	12.25			6 5/8 REG				1.5	1.5
1	8" 7/8 5.9 Fxd @ 1.75 w/ 11.75 Stab. Sleeve	8045	8		1.62	6 5/8 REG	B	6 5/8 REG	B	39.25	40.75
2	11.00" NM Stabilizer	AWNS-5270-R	8.44	3.01	2.65	6 5/8 REG	B	6 5/8 REG	P	7.3	48.05
3	NM Slick Pony DC	800-427	8.16	3.77	1.80	6 5/8 REG	B	6 5/8 REG	P	11.45	59.5
4	NM Slick DC	800-578	8.33	3.81	1.74	6 5/8 REG	B	6 5/8 REG	P	30.73	90.23
5	Gap Sub	800-602	8.19	4.02	0.84	6 5/8 REG	B	6 5/8 REG	P	5.76	95.99
6	NM Slick DC	AWS800-30-1765-R	8.15	3.78	Slick	6 5/8 REG	B	6 5/8 REG	P	27.97	123.96
7	NM Slick DC	AWS800-30-2708-R	8.13	3.79	Slick	6 5/8 REG	B	6 5/8 REG	P	29.12	153.08
8	NM Slick DC	800-259	8.05	3.73	1.38	6 5/8 REG	B	6 5/8 REG	P	29.45	182.53
9	NM X/O Sub (4.5 IF x 6 5/8 REG)	800-684	6.91	2.83	1.63	4 1/2 IF	B	6 5/8 REG	P	4.09	186.62
10	5 Stands 5" HWDP	15 Joints 5" HWDP	6.31	3.12	1.75	4 1/2 IF	B	4 1/2 IF	P	458.52	645.14

Performance			
Drilling Hours : 41.00	Inc In : 15.9	Interval : 2388	
Circulating Hours : 1.17	Inc Out : 0.1	ROP : 58.24	
Reaming Hours :	Azimuth In : 205.3	Feet Rotated : 2,197.00	
Motor Hours this run : 42.17	Azimuth Out : 152.2	Feet Oriented : 191.00	
Pressure Off Bottom : 2000	W.O.B. Sliding : 25	BHA Performance : 9	
Pressure On Bottom : 2350	W.O.B. Rotating : 35	Proposed Build Rate : 2	
Sliding Hours : 11.58	Rotating Hours : 29.42		

Motor			
Motor Size : 8	Motor Bend : 1.75	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : 8045	Bit To Bend Distance : 8.25	Flow Rate (g/m) : 900	Static Temp :
Lobes : 7/8	Motor Add On : Screw on stab	Table (RPM) : 50.00	Mist (g/m) : 0
Stages : 5.90	Effective Diameter : 11.34	Total Bit Speed : 203.00	N2 (ft³/min) : 0
Motor (Rev/g) : 0.170	Motor Ctr Stab :		
Cum Motor Hours : 42.17	Rig Down Time :		
Motor Failure ? No			
Failure Code :			
Failure Description:			

Bit		Pump	Formations Drilled
Manufacturer : Ulterra TFA: 2.761 Type : PDC Style : SPL616 (9x20's) Jets : 20,20,20,20,20,20,20		Pump 1 : Continental-Emsco Type : FS-1600 Pump 2 : Continental-Emsco Type : FS-1600	
Dull Condition :	1,8,WT,G,X,8.0000,CT,PR		

Reason for POOH
Trip for Bit

Run Summary

Vertical/Nudge:

Re-ran BHA #1 bit with this assembly. Bit had one blade of cutters that were broke which made it difficult to maintain tool faces along with the formation. Dropped nudge out but was extremely ratty and Sliding ROP averaged at best 10-20 ft per hour. Rotating ROP ranged from 30-100. Bit kept taking massive differential spikes cause the top drive to stall out frequently. After drilling 2400' at a slower than average ROP and torque was exceeding 18K, decision was made TOOH and inpect assembly.

Upon surface inspection the motor drained w/ 1/4" play in the bit box. I was able to turn the bit box one full round by hand. No signs of wear on the wear pad. Bit grading was a 1-8, there was rubber in the jets, and it was out of gauge.

Hunting Motor 7/8, 5.9 Stg. w/ 11.34" Stabilizer Sleeve

Fixed @ 1.75°

Flow Range: 450-900 GPM

Max Rotary: 50 RPM

Max Diff: 1,328 psi

Stall Diff: 1,991 psi

Bit to Bend: 8.25'

Motor RPG: 0.17

Max Toqure: 22,116 ft. lbs.

Max WOB: 185,000

Stall Torque: 33,174 ft. lbs.

Bit to Survey: 69'

EM Power: 6-18

Magnetic Spacing:

Above: 115.28' (Need 90')

Bit to Gamma: 62.96'

Battery Life: 3 Batteries @ 100.8 Hours (4.2 Days)

MWD X-Over: 4°

Below: 26.50' (Need 25')



Bottom Hole Assembly

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 3
WellName University Owens 1-6 Alloc 33 #33HK	Date In : Jun-27-2019	Depth In : 5802	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-27-2019	Depth Out : 6715	MWD Offset : 326
BHA Objective: Drill 12.25" Vertical Section			

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	SDSi616 (6x22's)	JP7526	12.25			6 5/8 REG				1.5	1.5
1	8" 7/8 4.0 Fxd @ 1.75 w/ 9 5/8 Stab. Sleeve	8064	8.1		1.5	6 5/8 REG	B	6 5/8 REG	B	29.29	30.79
2	11.00" NM Stabilizer	AWNS-5270-R	8.44	3.01	2.65	6 5/8 REG	B	6 5/8 REG	P	7.3	38.09
3	NM Slick Pony DC	800-427	8.16	3.77	1.80	6 5/8 REG	B	6 5/8 REG	P	11.45	49.54
4	NM Slick DC	800-578	8.33	3.81	1.74	6 5/8 REG	B	6 5/8 REG	P	30.73	80.27
5	Gap Sub	800-602	8.19	4.02	0.84	6 5/8 REG	B	6 5/8 REG	P	5.76	86.03
6	NM Slick DC	AWS800-30-1765-R	8.15	3.78	Slick	6 5/8 REG	B	6 5/8 REG	P	27.97	114
7	NM Slick DC	AWS800-30-2708-R	8.13	3.79	Slick	6 5/8 REG	B	6 5/8 REG	P	29.12	143.12
8	NM Slick DC	800-259	8.05	3.73	1.38	6 5/8 REG	B	6 5/8 REG	P	29.45	172.57
9	NM X/O Sub (4.5 IF x 6 5/8 REG)	800-684	6.91	2.83	1.63	4 1/2 IF	B	6 5/8 REG	P	4.09	176.66
10	5 Stands 5" HWDP	15 Joints 5" HWDP	6.31	3.12	1.75	4 1/2 IF	B	4 1/2 IF	P	458.52	635.18

Performance

Drilling Hours : 8.00	Inc In : 0.0	Interval : 913
Circulating Hours : 1.58	Inc Out : 0.9	ROP : 114.13
Reaming Hours : 1.25	Azimuth In : 0.0	Feet Rotated : 913.00
Motor Hours this run : 10.83	Azimuth Out : 279.6	Feet Oriented : 0.00
Pressure Off Bottom : 2500	W.O.B. Sliding : 0	BHA Performance : 0
Pressure On Bottom : 3200	W.O.B. Rotating : 32	Proposed Build Rate : 0
Sliding Hours : 0.00	Rotating Hours : 8.00	

Motor

Motor Size : 8	Motor Bend : 1.75	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : 8064	Bit To Bend Distance : 5.83	Flow Rate (g/m) : 900	Static Temp :
Lobes : 7/8	Motor Add On : Screw on stab	Table (RPM) : 50.00	Mist (g/m) : 0
Stages : 4.00	Effective Diameter : 11.34	Total Bit Speed : 203.00	N2 (ft³/min) : 0
Motor (Rev/g) : 0.170	Motor Ctr Stab :		
Cum Motor Hours : 10.83	Rig Down Time :		
Motor Failure ? No			
Failure Code :			
Failure Description:			

Bit	Pump	Formations Drilled
Manufacturer : Smith TFA: 2.227	Pump 1 : Continental-Emsco	
Type : PDC	Type : FS-1600	
Style : SDSi616 (6x22's)	Pump 2 : Continental-Emsco	
Jets : 22,22,22,22,22,22,	Type : FS-1600	
Dull Condition : 1,2,,,,,,		

Reason for POOH

TD Intermediate Section

Run Summary

Vertical:

Only drilled 913' of vertical section. No issues with this BHA.

Upon surface inspection the motor drained well and had normal play at bit box. No other visible damage. Bit was graded 1-2 with some chipped cutters along the shoulder.

Hunting Motor 7/8, 4 Stg. w/ 9.625" Stabilizer Sleeve	
Fixed @ 1.75°	Bit to Bend: 5.83'
Flow Range: 450-900 GPM	Motor RPG: 0.17
Max Rotary: 50 RPM	Max Toqure: 14,994 ft. lbs.
Max Diff: 900 psi	Max WOB: 185,000
Stall Diff: 1,350 psi	Stall Torque: 22,491 ft. lbs.
Bit to Survey: 59'	Bit to Gamma: 53.00'
EM Power: 6-18	Battery Life: 3 Batteries @ 55.9 Hours (2.3 Days)
Magnetic Spacing:	MWD X-Over: 4°
Above: 115.28' (Need 90')	Below: 26.50' (Need 25')



Bottom Hole Assembly

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 4
WellName University Owens 1-6 Alloc 33 #33HK	Date In : Jun-28-2019	Depth In : 6715	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-30-2019	Depth Out : 7700	MWD Offset : 313
BHA Objective: Drill 8.75 Curve Section.			

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	MDi611 (6x20's)	JP6561	8.75			4 1/2 REG				1	1
1	7/8, 5.0 Stg. FBH @ 2.25° True Slick	C3-171191	6.91		Slick	4 1/2 IF	B	4 1/2 REG	B	25.4	26.4
2	NM Slick DC	AWS675-30-3392-R	6.75	3.14	Slick	4 1/2 IF	B	4 1/2 IF	P	29.7	56.1
3	NM Short Flex DC	675-031	6.75	3.3	2.30	4 1/2 IF	B	4 1/2 IF	P	11.86	67.96
4	Double Pin	BT675-1814-R	7.15	3.32	Slick	4 1/2 IF	P	4 1/2 IF	P	3.58	71.54
5	Gap Sub	650-2691	6.75	2.5	0.73	4 1/2 IF	B	4 1/2 IF	B	6.6	78.14
6	Fusion Spacer Sub	675-405	6.97	3.27	1.59	4 1/2 IF	P	4 1/2 IF	P	5.45	83.59
7	Fusion Pulser Sub	650-3029	6.8	3.27	3.20	4 1/2 IF	B	4 1/2 IF	B	7.2	90.79
8	NM Flex DC	675-117	6.75	3.25	5.10	4 1/2 IF	B	4 1/2 IF	P	30.65	121.44
9	NM Slick DC	675-223	6.84	3.31	1.31	4 1/2 IF	B	4 1/2 IF	P	28.65	150.09

Performance

Drilling Hours : 15.67	Inc In : 1.1	Interval : 985
Circulating Hours : 1.58	Inc Out : 82.6	ROP : 62.87
Reaming Hours :	Azimuth In : 270.6	Feet Rotated : 483.00
Motor Hours this run : 17.25	Azimuth Out : 182.9	Feet Oriented : 502.00
Pressure Off Bottom : 2100	W.O.B. Sliding : 35	BHA Performance : 19
Pressure On Bottom : 2800	W.O.B. Rotating : 22	Proposed Build Rate : 12
Sliding Hours : 7.92	Rotating Hours : 7.75	

Motor

Motor Size : 6.75	Motor Bend : 2.25	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C3-171191	Bit To Bend Distance : 3.68	Flow Rate (g/m) : 600	Static Temp :
Lobes : 7/8	Motor Add On : Slick	Table (RPM) : 20.00	Mist (g/m) : 0
Stages : 5.00	Effective Diameter : 7.32	Total Bit Speed : 194.00	N2 (ft³/min) : 0
Motor (Rev/g) : 0.290	Motor Ctr Stab :		
Cum Motor Hours : 17.25	Rig Down Time :		
Motor Failure ? No			
Failure Code :			
Failure Description:			

Bit	Pump	Formations Drilled
Manufacturer : Smith TFA: 1.841 Type : PDC Style : MDi611 (6x20's) Jets : 20,20,20,20,20,20,	Pump 1 : Continental-Emsco Type : FS-1600 Pump 2 : Continental-Emsco Type : FS-1600	
Dull Condition : 1,2,LT,x,,0.0000,CT,		

Reason for POOH

TD Build Section

Run Summary

Curve:

Kicked off 20' high as per operator. Motor yields started out high, averaging 16-19's for the first 60° then averaged out around 20'+ for remainder of curve. Started adding rotation to lower doglegs right around 20° and motor started cranking out at 17-19's. ROP was strong throughout curve averaging 200+ the first 60° then increased to 250-300 ft/hr. Toolface control was below average even though we kicked off in the Dean formation but once we got 30° in hole Toolface control got easier. Drilled with an average 600-700 differential being able to maintain 200+ ROP. The last 30° we were really able to push on the bit once we were in the Wolfcamp C. Total time for curve: 12.5 hours.

Upon surface inspection the motor drained well, with little to no wear on wear pad. Had normal play in the bit box and minimal squat. Bit graded at 1 - 2 (NO), still in gauge

Performance Motor 7/8, 5.0 Stg. True Slick

Fixed @ 2.25°	Bit to Bend: 3.69'
Flow Range: 300-600 GPM	Motor RPG: 0.29
Max Rotary: 20 RPM	Max Toque: 10,509 lb-ft
Max Diff: 1,130 psi	Max WOB: 121,000
Bit to Survey: 51'	Bit to Gamma: 44.76'
EM Power: 6-18	Battery Life: 3 Batteries w/Turbine Tool estimated @ 288+ hours (12+ Days)
Magnetic Spacing:	MWD X-Over: 4°
Above: 101.04' (Need 90')	Below: 22.65' (Need 18')



Bottom Hole Assembly

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 5
WellName University Owens 1-6 Alloc 33 #33HK	Date In : Jun-30-2019	Depth In : 7700	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jul-03-2019	Depth Out : 14977	MWD Offset : 152
BHA Objective: Drill 8.75" Lateral Section.			

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	TKC66Z2 (9x16's)	A264347	8.75			4 1/2 REG				1	1
1	7" Claw250 FBH @ 1.83° w/ Slick Sleeve	C2-171166	7.13		Slick	4 1/2 IF	B	4 1/2 REG	B	34.45	35.45
2	8 1/8" NM Stabilizer	BT675-797-R	6.61	2.7	2.15	4 1/2 IF	B	4 1/2 IF	P	4.83	40.28
3	NM Slick DC	AWS675-30-3392-R	6.75	3.14	Slick	4 1/2 IF	B	4 1/2 IF	P	29.7	69.98
4	NM Short Flex DC	675-031	6.75	3.3	2.30	4 1/2 IF	B	4 1/2 IF	P	11.86	81.84
5	Double Pin	BT675-1814-R	7.15	3.32	Slick	4 1/2 IF	P	4 1/2 IF	P	3.58	85.42
6	Gap Sub	650-2691	6.75	2.5	0.73	4 1/2 IF	B	4 1/2 IF	B	6.6	92.02
7	NM Flex DC	675-117	6.75	3.25	5.10	4 1/2 IF	B	4 1/2 IF	P	30.65	122.67
8	NM Slick DC	675-223	6.84	3.31	1.31	4 1/2 IF	B	4 1/2 IF	P	28.65	151.32
9	28 Stands 5" DP	84 Joints 5" DP	5	4.27	Slick	4 1/2 IF	B	4 1/2 IF	P	2631.8	2783.12
10	NOV Agitator	AGHF0675-0051	6.84	2.53	1.74	4 1/2 IF	B	4 1/2 IF	P	25.06	2808.18

Performance

Drilling Hours : 40.58	Inc In : 90.3	Interval : 7277
Circulating Hours : 4.50	Inc Out : 92.7	ROP : 179.31
Reaming Hours :	Azimuth In : 182.3	Feet Rotated : 6,606.00
Motor Hours this run : 45.08	Azimuth Out : 184.6	Feet Oriented : 671.00
Pressure Off Bottom : 4850	W.O.B. Sliding : 35	BHA Performance : 20
Pressure On Bottom : 5525	W.O.B. Rotating : 32	Proposed Build Rate : 2
Sliding Hours : 7.17	Rotating Hours : 33.42	

Motor

Motor Size : 7	Motor Bend : 1.83	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C2-171166	Bit To Bend Distance : 4.66	Flow Rate (g/m) : 725	Static Temp :
Lobes :	Motor Add On : Thread Protector	Table (RPM) : 80.00	Mist (g/m) : 0
Stages : 0.00	Effective Diameter : 7.75	Total Bit Speed : 261.25	N2 (ft³/min) : 0
Motor (Rev/g) : 0.250	Motor Ctr Stab :		
Cum Motor Hours : 45.08	Rig Down Time :		
Motor Failure ? No			
Failure Code :			
Failure Description:			

Bit	Pump	Formations Drilled
Manufacturer : Reed TFA: 1.767 Type : PDC Style : TKC66Z2 (9x16's) Jets : 16,16,16,16,16,16,16	Pump 1 : Continental-Emsco Type : FS-1600 Pump 2 : Continental-Emsco Type : FS-1600	
Dull Condition : 1,1,NO,x,0,0.0000,,		

Reason for POOH

Trip for Bha

Run Summary

BHA started off performing well. ROP was good throughout the run. Motor yields were really strong, averaging around 20°s. Assembly would walk drastically in rotation. Angle would build, then drop 2-3° per stand at times. No consistency Inclination. At around 14,977 MD, we were rotating ahead at around 280 ft/hr, then we lost all differential and ROP, and the torque dropped from 18,500 ft-lbs to 12,000 ft-lbs. Picked up off bottom, re-zeroed everything, and tried tagging back up. Stacked 30 WOB and still no differential or ROP.

Upon surface inspection the motor did not drain and bit box would spin freely by hand. No squat in box and no other visible sign of damage. Bit was graded 1-1 with very little wear and no chipped cutters. decision was made to run a new bit.

7" Claw 250 Performance Motor w/ Slick Sleeve	
Fixed @ 1.83°	Bit to Bend: 4.66'
Flow Range: 325-725	Motor Rev/Gal: 0.25
Max Rotary: 80 RPM	Max Toquire: 19,404 lb-ft
Max Diff: 1,960 psi	Max WOB: 121.000
Bit to Survey: 59.00'	Bit to Gamma: 53.96'
EM Power: 6-18	Battery Life: 4 Batteries PL6 @ 186.7 hours (7.8 Days)
Magnetic Spacing:	MWD X-Over: 4°
Above: 94.16' (Need 90')	Below: 21.70' (Need 18')



Bottom Hole Assembly

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 6
WellName University Owens 1-6 Alloc 33 #33HK	Date In : Jul-04-2019	Depth In : 14977	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jul-07-2019	Depth Out : 17370	MWD Offset : 326
BHA Objective: Drill 8.75" Lateral Section.			

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	TKC66Z2 (9x16's)	A262591	8.75			4 1/2 REG				1	1
1	7" Claw250 Fixed @ 1.75° w/ Slick Sleeve	C2-171079	6.97		Slick	4 1/2 IF	B	4 1/2 REG	B	34.73	35.73
2	8 1/8" NM Stabilizer	BT675-797-R	6.61	2.7	2.15	4 1/2 IF	B	4 1/2 IF	P	4.83	40.56
3	NM Slick DC	AWS675-30-3392-R	6.75	3.14	Slick	4 1/2 IF	B	4 1/2 IF	P	29.7	70.26
4	NM Short Flex DC	675-031	6.75	3.3	2.30	4 1/2 IF	B	4 1/2 IF	P	11.86	82.12
5	Double Pin	BT675-1814-R	7.15	3.32	Slick	4 1/2 IF	P	4 1/2 IF	P	3.58	85.7
6	Gap Sub	650-2691	6.75	2.5	0.73	4 1/2 IF	B	4 1/2 IF	B	6.6	92.3
7	NM Flex DC	675-117	6.75	3.25	5.10	4 1/2 IF	B	4 1/2 IF	P	30.65	122.95
8	NM Slick DC	675-223	6.84	3.31	1.31	4 1/2 IF	B	4 1/2 IF	P	28.65	151.6
9	28 Stands 5" DP	84 Joints 5" DP	5	4.27	Slick	4 1/2 IF	B	4 1/2 IF	P	2631.8	2783.4
10	NOV Agitator	AGHF0675-0051	6.84	2.53	1.74	4 1/2 IF	B	4 1/2 IF	P	25.06	2808.46

Performance

Drilling Hours : 24.33	Inc In : 0.0	Interval : 2393
Circulating Hours : 9.00	Inc Out : 90.2	ROP : 98.34
Reaming Hours : 8.08	Azimuth In : 0.0	Feet Rotated : 2,169.00
Motor Hours this run : 41.42	Azimuth Out : 184.8	Feet Oriented : 224.00
Pressure Off Bottom : 4900	W.O.B. Sliding : 42	BHA Performance : 11
Pressure On Bottom : 5500	W.O.B. Rotating : 32	Proposed Build Rate : 2
Sliding Hours : 5.33	Rotating Hours : 19.00	

Motor

Motor Size : 7	Motor Bend : 1.83	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C2-171079	Bit To Bend Distance : 4.65	Flow Rate (g/m) : 725	Static Temp :
Lobes :	Motor Add On : Thread Protector	Table (RPM) : 80.00	Mist (g/m) : 0
Stages : 0.00	Effective Diameter : 7.75	Total Bit Speed : 80.00	N2 (ft³/min) : 0
Motor (Rev/g) : 0.000	Motor Ctr Stab :		
Cum Motor Hours : 41.42	Rig Down Time :		
Motor Failure ? No			
Failure Code :			
Failure Description:			

Bit	Pump	Formations Drilled
Manufacturer : Reed TFA: 1.767 Type : PDC Style : TKC66Z2 (9x16's) Jets : 16,16,16,16,16,16,16	Pump 1 : Continental-Emsco Type : FS-1600 Pump 2 : Continental-Emsco Type : FS-1600	
Dull Condition : 1,1,CC,G,X,1.0000,NO,TD		

Reason for POOH

TD Well

Run Summary

Drilled the remaining 2,393 ft of the well with this BHA. Assembly performed well, with ROP averaging around 225 ft/hr. MY averaged around 10°s. No real consistency while rotating. It would build, drop, and walk left and right. Had to slide 25 footers due to having a 1.75° motor in the hole. Was getting lots of chunks of shale while rotating. It took nearly 24 hours to get back to bottom. After TD it pulled very well.

Upon surface inspection the motor drained well, with little to no wear on wear pad. Had normal play in the bit box and minimal squat. Bit graded at 1 - 1, still in gauge.

7" Claw 250 Performance Motor w/ Slick Sleeve
Fixed @ 1.75° Bit to Bend: 4.65'
Flow Range: 325-725 Motor Rev/Gal: 0.25
Max Rotary: 80 RPM Max Toqure: 19,404 lb-ft
Max Diff: 1,960 psi Max WOB: 121.000
Bit to Survey: 59.00' Bit to Gamma: 54.24'
EM Power: 6-18 Battery Life: 4 Batteries! estimated @ 120 hours (5.0 Days)
Magnetic Spacing: MWD X-Over: 4°
Above: 94.16' (Need 90') Below: 21.70' (Need 18')

Section 4

MWD Data Sheets

CATHEDRAL ENERGY SERVICES

4701 United Drive

Oklahoma City, OK 73179

Office Phone: 405.261.6011





MWD End of Run Summary

Client : Sable Permian Resources	Field : PERMIAN	Job Nbr : 198135	BHA Nbr : 1
WellName: University Owens 1-6 Alloc 33 #33HK	Date In : Jun-22-2019	Depth In : 961	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-24-2019	Depth Out : 3414	MWD Offset: 95

BHA Objective: Drill 12.25" Vertical/Nudge Section

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	SPL616 (9x20's)	47913	12.25			6 5/8 REG				1.5	1.5
1	7/8 4.0 Stg. FBH @ 1.83 w/11.5" Stabilizer	C2-203039	8.18	0	Slick	6 5/8 REG	B	6 5/8 REG	B	27.64	29.14
2	11.00" NM Stabilizer	AWNS-5270-R	8.44	3.01	2.65	6 5/8 REG	B	6 5/8 REG	P	7.3	36.44
3	NM Slick Pony DC	800-427	8.16	3.77	1.80	6 5/8 REG	B	6 5/8 REG	P	11.45	47.89
4	NM Slick DC	800-578	8.33	3.81	1.74	6 5/8 REG	B	6 5/8 REG	P	30.73	78.62
5	Gap Sub	800-602	8.19	4.02	0.84	6 5/8 REG	B	6 5/8 REG	P	5.76	84.38
6	NM Slick DC	AWS800-30-1765-R	8.15	3.78	Slick	6 5/8 REG	B	6 5/8 REG	P	27.97	112.35
7	NM Slick DC	AWS800-30-2708-R	8.13	3.79	Slick	6 5/8 REG	B	6 5/8 REG	P	29.12	141.47
8	NM Slick DC	800-259	8.05	3.73	1.38	6 5/8 REG	B	6 5/8 REG	P	29.45	170.92
9	NM X/O Sub (4.5 IF x 6 5/8 REG)	800-684	6.91	2.83	1.63	4 1/2 IF	B	6 5/8 REG	P	4.09	175.01
10	5 Stands 5" HWDP	15 Joints 5" HWDP	6.31	3.12	1.75	4 1/2 IF	B	4 1/2 IF	P	458.52	633.53

Performance

Drilling Hours :29.42	Inc In :0.80	Interval :2453
Circulating Hours : 1.58	Inc Out : 15.30	ROP : 83.39
Reaming Hours :	Azimuth In : 254.90	Feet Rotated : 2267.00
Motor Hours this run : 31.00	Azimuth Out : 205.70	Feet Oriented : 186.00
Pressure Off Bottom : 2200	W.O.B. Sliding : 25	BHA Performance : 12
Pressure On Bottom : 2800	W.O.B. Rotating : 33	Proposed Build Rate: 2
Sliding Hours : 5.917	Rotating Hours : 23.500	

Motor

Motor Size : 8	Motor Bend : 1.83	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C2-203039	Bit To Bend Distance : 5.30	Stator Mnuf :	Static Temp :
Lobes : 7/8	Motor Add On : Screw on stab	PDM Supplier :	
Stages : 4.00	Effective Diameter : 11.50	Flow Rate (g/m) : 900	
Motor (Rev/g) : 0.160	Motor Ctr Stab:	Table (RPM) : 50.00	Mist (g/m) : 0
Cum Motor Hours : 31.00		Total Bit Speed: 194.00	N2 (ft³/m): 0
Motor Failure ? No			
Failure Code :	Rig Down Time :		
Failure Description:			

Particulars

Formations Drilled

Plugged In Hours : 57	
Pulses/Power Level:	
MWD Supplier	
MWD Operator 1:	
MWD Operator 2:	

Equipment Numbers

MWD Type : Negative Pulse Tool	APC # :	Directional Sensor #	Gamma Sensor #
Gap Sub # :	SEA # :	Choke Sub Nozzle :	Circ Temp
Transmitter Sub # :	PSA # :		Static Temp
Battery Harness	1 :	2 :	3 :
Interconnec	1.	2.	3.
	9.	10.	11.
		12.	

Failure Description

Failure Reason :

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MWD End of Run Summary

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 2
WellName: University Owens 1-6 Alloc 33 #33HK	Date In : Jun-24-2019	Depth In : 3414	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-26-2019	Depth Out : 5802	MWD Offset: 314

BHA Objective: Drill 12.25" Nudge/Vertical Section

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	SPL616 (9x20's)	47913	12.25			6 5/8 REG				1.5	1.5
1	8" 7/8 5.9 Fxd @ 1.75 w/ 11.75 Stab. Sleeve	8045	8	0	1.62	6 5/8 REG	B	6 5/8 REG	B	39.25	40.75
2	11.00" NM Stabilizer	AWNS-5270-R	8.44	3.01	2.65	6 5/8 REG	B	6 5/8 REG	P	7.3	48.05
3	NM Slick Pony DC	800-427	8.16	3.77	1.80	6 5/8 REG	B	6 5/8 REG	P	11.45	59.5
4	NM Slick DC	800-578	8.33	3.81	1.74	6 5/8 REG	B	6 5/8 REG	P	30.73	90.23
5	Gap Sub	800-602	8.19	4.02	0.84	6 5/8 REG	B	6 5/8 REG	P	5.76	95.99
6	NM Slick DC	AWS800-30-1765-R	8.15	3.78	Slick	6 5/8 REG	B	6 5/8 REG	P	27.97	123.96
7	NM Slick DC	AWS800-30-2708-R	8.13	3.79	Slick	6 5/8 REG	B	6 5/8 REG	P	29.12	153.08
8	NM Slick DC	800-259	8.05	3.73	1.38	6 5/8 REG	B	6 5/8 REG	P	29.45	182.53
9	NM X/O Sub (4.5 IF x 6 5/8 REG)	800-684	6.91	2.83	1.63	4 1/2 IF	B	6 5/8 REG	P	4.09	186.62
10	5 Stands 5" HWDP	15 Joints 5" HWDP	6.31	3.12	1.75	4 1/2 IF	B	4 1/2 IF	P	458.52	645.14

Performance

Drilling Hours : 41.00	Inc In : 15.90	Interval : 2388
Circulating Hours : 1.17	Inc Out : 0.10	ROP : 58.24
Reaming Hours :	Azimuth In : 205.30	Feet Rotated : 2197.00
Motor Hours this run : 42.17	Azimuth Out : 152.20	Feet Oriented : 191.00
Pressure Off Bottom : 2000	W.O.B. Sliding : 25	BHA Performance : 9
Pressure On Bottom : 2350	W.O.B. Rotating : 35	Proposed Build Rate: 2
Sliding Hours : 11.583	Rotating Hours : 29.417	

Motor

Motor Size : 8	Motor Bend : 1.75	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : 8045	Bit To Bend Distance : 8.25	Stator Mnuf :	Static Temp :
Lobes : 7/8	Motor Add On : Screw on stab	PDM Supplier :	
Stages : 5.90	Effective Diameter : 11.34	Flow Rate (g/m) : 900	
Motor (Rev/g) : 0.170	Motor Ctr Stab:	Table (RPM) : 50.00	Mist (g/m) : 0
Cum Motor Hours : 42.17		Total Bit Speed: 203.00	N2 (ft³/m) : 0
Motor Failure ? No			
Failure Code :	Rig Down Time :		
Failure Description:			

Particulars

Plugged In Hours: : 60.5
Pulses/Power Level:
MWD Supplier
MWD Operator 1:
MWD Operator 2:

Formations Drilled

Equipment Numbers

MWD Type : Negative Pulse Tool	APC # :	Directional Sensor #	Gamma Sensor #
Gap Sub # :	SEA # :	Choke Sub Nozzle :	Circ Temp
Transmitter Sub # :	PSA # :		Static Temp
Battery Harness	1 :	2 :	3 :
Interconnec	1.	2.	3.
	9.	10.	11.
		12.	

Failure Description

Failure Reason :



MWD End of Run Summary

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 3
WellName: University Owens 1-6 Alloc 33 #33HK	Date In : Jun-27-2019	Depth In : 5802	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-27-2019	Depth Out : 6715	MWD Offset: 326

BHA Objective: Drill 12.25" Vertical Section

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	SDSi616 (6x22's)	JP7526	12.25			6 5/8 REG				1.5	1.5
1	8" 7/8 4.0 Fxd @ 1.75 w/ 9 5/8 Stab. Sleeve	8064	8.1	0	1.5	6 5/8 REG	B	6 5/8 REG	B	29.29	30.79
2	11.00" NM Stabilizer	AWNS-5270-R	8.44	3.01	2.65	6 5/8 REG	B	6 5/8 REG	P	7.3	38.09
3	NM Slick Pony DC	800-427	8.16	3.77	1.80	6 5/8 REG	B	6 5/8 REG	P	11.45	49.54
4	NM Slick DC	800-578	8.33	3.81	1.74	6 5/8 REG	B	6 5/8 REG	P	30.73	80.27
5	Gap Sub	800-602	8.19	4.02	0.84	6 5/8 REG	B	6 5/8 REG	P	5.76	86.03
6	NM Slick DC	AWS800-30-1765-R	8.15	3.78	Slick	6 5/8 REG	B	6 5/8 REG	P	27.97	114
7	NM Slick DC	AWS800-30-2708-R	8.13	3.79	Slick	6 5/8 REG	B	6 5/8 REG	P	29.12	143.12
8	NM Slick DC	800-259	8.05	3.73	1.38	6 5/8 REG	B	6 5/8 REG	P	29.45	172.57
9	NM X/O Sub (4.5 IF x 6 5/8 REG)	800-684	6.91	2.83	1.63	4 1/2 IF	B	6 5/8 REG	P	4.09	176.66
10	5 Stands 5" HWDP	15 Joints 5" HWDP	6.31	3.12	1.75	4 1/2 IF	B	4 1/2 IF	P	458.52	635.18

Performance

Drilling Hours : 8.00	Inc In : 0.00	Interval : 913
Circulating Hours : 1.58	Inc Out : 0.90	ROP : 114.13
Reaming Hours : 1.25	Azimuth In : 0.00	Feet Rotated : 913.00
Motor Hours this run : 10.83	Azimuth Out : 279.60	Feet Oriented : 0.00
Pressure Off Bottom : 2500	W.O.B. Sliding : 0	BHA Performance : 0
Pressure On Bottom : 3200	W.O.B. Rotating : 32	Proposed Build Rate: 0
Sliding Hours : 0.000	Rotating Hours : 8.000	

Motor

Motor Size : 8	Motor Bend : 1.75	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : 8064	Bit To Bend Distance : 5.83	Stator Mnuf :	Static Temp :
Lobes : 7/8	Motor Add On : Screw on stab	PDM Supplier :	
Stages : 4.00	Effective Diameter : 11.34	Flow Rate (g/m) : 900	
Motor (Rev/g) : 0.170	Motor Ctr Stab:	Table (RPM) : 50.00	Mist (g/m) : 0
Cum Motor Hours : 10.83		Total Bit Speed: 203.00	N2 (ft³/m) : 0
Motor Failure ? No			
Failure Code :	Rig Down Time :		
Failure Description:			

Particulars

Plugged In Hours: : 22.5
Pulses/Power Level:
MWD Supplier
MWD Operator 1:
MWD Operator 2:

Formations Drilled

Equipment Numbers

MWD Type : Negative Pulse Tool	APC # :	Directional Sensor #	Gamma Sensor #
Gap Sub # :	SEA # :	Choke Sub Nozzle :	Circ Temp
Transmitter Sub # :	PSA # :		Static Temp
Battery Harness	1 :	2 :	3 :
Interconnec	1.	2.	3.
	9.	10.	11.
		12.	

Failure Description

Failure Reason :



MWD End of Run Summary

Client : Sable Permian Resources	Field : PERMIAN	Job Nbr : 198135	BHA Nbr : 4
WellName: University Owens 1-6 Alloc 33 #33HK	Date In : Jun-28-2019	Depth In : 6715	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jun-30-2019	Depth Out : 7700	MWD Offset: 313

BHA Objective: Drill 8.75 Curve Section.

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	MDi611 (6x20's)	JP6561	8.75			4 1/2 REG				1	1
1	7/8, 5.0 Stg. FBH @ 2.25° True Slick	C3-171191	6.91	0	Slick	4 1/2 IF	B	4 1/2 REG	B	25.4	26.4
2	NM Slick DC	AWS675-30-3392-R	6.75	3.14	Slick	4 1/2 IF	B	4 1/2 IF	P	29.7	56.1
3	NM Short Flex DC	675-031	6.75	3.3	2.30	4 1/2 IF	B	4 1/2 IF	P	11.86	67.96
4	Double Pin	BT675-1814-R	7.15	3.32	Slick	4 1/2 IF	P	4 1/2 IF	P	3.58	71.54
5	Gap Sub	650-2691	6.75	2.5	0.73	4 1/2 IF	B	4 1/2 IF	B	6.6	78.14
6	Fusion Spacer Sub	675-405	6.97	3.27	1.59	4 1/2 IF	P	4 1/2 IF	P	5.45	83.59
7	Fusion Pulser Sub	650-3029	6.8	3.27	3.20	4 1/2 IF	B	4 1/2 IF	B	7.2	90.79
8	NM Flex DC	675-117	6.75	3.25	5.10	4 1/2 IF	B	4 1/2 IF	P	30.65	121.44
9	NM Slick DC	675-223	6.84	3.31	1.31	4 1/2 IF	B	4 1/2 IF	P	28.65	150.09

Performance

Drilling Hours :15.67	Inc In :1.10	Interval :985
Circulating Hours : 1.58	Inc Out : 82.60	ROP : 62.87
Reaming Hours :	Azimuth In : 270.60	Feet Rotated : 483.00
Motor Hours this run : 17.25	Azimuth Out : 182.90	Feet Oriented : 502.00
Pressure Off Bottom : 2100	W.O.B. Sliding : 35	BHA Performance : 19
Pressure On Bottom : 2800	W.O.B. Rotating : 22	Proposed Build Rate: 12
Sliding Hours : 7.917	Rotating Hours : 7.750	

Motor

Motor Size : 6.75	Motor Bend : 2.25	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C3-171191	Bit To Bend Distance : 3.68	Stator Mnuf :	Static Temp :
Lobes : 7/8	Motor Add On : Slick	PDM Supplier :	
Stages : 5.00	Effective Diameter : 7.32	Flow Rate (g/m) : 600	
Motor (Rev/g) : 0.290	Motor Ctr Stab:	Table (RPM) : 20.00	Mist (g/m) : 0
Cum Motor Hours : 17.25		Total Bit Speed: 194.00	N2 (ft³/m) : 0
Motor Failure ? No			
Failure Code :	Rig Down Time :		
Failure Description:			

Particulars

Plugged In Hours : 37
Pulses/Power Level:
MWD Supplier
MWD Operator 1:
MWD Operator 2:

Formations Drilled

Equipment Numbers

MWD Type : Negative Pulse Tool	APC # :	Directional Sensor #	Gamma Sensor #
Gap Sub # :	SEA # :	Choke Sub Nozzle :	Circ Temp
Transmitter Sub # :	PSA # :		Static Temp
Battery Harness	1 :	2 :	3 :
Interconnec	1.	2.	3.
	9.	10.	11.
		12.	

Failure Description

Failure Reason :



MWD End of Run Summary

Client : Sable Permian Resources	Field : PERMIAN	Job Nbr : 198135	BHA Nbr : 5
WellName: University Owens 1-6 Alloc 33 #33HK	Date In : Jun-30-2019	Depth In : 7700	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jul-03-2019	Depth Out : 14977	MWD Offset: 152

BHA Objective: Drill 8.75" Lateral Section.

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	TKC66Z2 (9x16's)	A264347	8.75			4 1/2 REG				1	1
1	7" Claw250 FBH @ 1.83° w/ Slick Sleeve	C2-171166	7.13	0	Slick	4 1/2 IF	B	4 1/2 REG	B	34.45	35.45
2	8 1/8" NM Stabilizer	BT675-797-R	6.61	2.7	2.15	4 1/2 IF	B	4 1/2 IF	P	4.83	40.28
3	NM Slick DC	AWS675-30-3392-R	6.75	3.14	Slick	4 1/2 IF	B	4 1/2 IF	P	29.7	69.98
4	NM Short Flex DC	675-031	6.75	3.3	2.30	4 1/2 IF	B	4 1/2 IF	P	11.86	81.84
5	Double Pin	BT675-1814-R	7.15	3.32	Slick	4 1/2 IF	P	4 1/2 IF	P	3.58	85.42
6	Gap Sub	650-2691	6.75	2.5	0.73	4 1/2 IF	B	4 1/2 IF	B	6.6	92.02
7	NM Flex DC	675-117	6.75	3.25	5.10	4 1/2 IF	B	4 1/2 IF	P	30.65	122.67
8	NM Slick DC	675-223	6.84	3.31	1.31	4 1/2 IF	B	4 1/2 IF	P	28.65	151.32
9	28 Stands 5" DP	84 Joints 5" DP	5	4.27	Slick	4 1/2 IF	B	4 1/2 IF	P	2631.8	2783.12
10	NOV Agitator	AGHF0675-0051	6.84	2.53	1.74	4 1/2 IF	B	4 1/2 IF	P	25.06	2808.18

Performance

Drilling Hours :40.58	Inc In :90.30	Interval :7277
Circulating Hours : 4.50	Inc Out : 92.70	ROP : 179.31
Reaming Hours :	Azimuth In : 182.30	Feet Rotated : 6606.00
Motor Hours this run : 45.08	Azimuth Out : 184.60	Feet Oriented : 671.00
Pressure Off Bottom : 4850	W.O.B. Sliding : 35	BHA Performance : 20
Pressure On Bottom : 5525	W.O.B. Rotating : 32	Proposed Build Rate: 2
Sliding Hours : 7.167	Rotating Hours : 33.417	

Motor

Motor Size : 7	Motor Bend : 1.83	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C2-171166	Bit To Bend Distance : 4.66	Stator Mnuf :	Static Temp :
Lobes :	Motor Add On : Thread Protector	PDM Supplier :	
Stages : 0.00	Effective Diameter : 7.75	Flow Rate (g/m) : 725	
Motor (Rev/g) : 0.250	Motor Ctr Stab:	Table (RPM) : 80.00	Mist (g/m) : 0
Cum Motor Hours : 45.08		Total Bit Speed: 261.25	N2 (ft³/m): 0
Motor Failure ? No			
Failure Code :	Rig Down Time :		
Failure Description:			

Particulars

Formations Drilled

Plugged In Hours : 68	
Pulses/Power Level:	
MWD Supplier	
MWD Operator 1:	
MWD Operator 2:	

Equipment Numbers

MWD Type : Negative Pulse Tool	APC # :	Directional Sensor #	Gamma Sensor #
Gap Sub # :	SEA # :	Choke Sub Nozzle :	Circ Temp
Transmitter Sub # :	PSA # :		Static Temp
Battery Harness	1 :	2 :	3 :
Interconnec	1.	2.	3.
	9.	10.	11.
		12.	

Failure Description

Failure Reason :

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MWD End of Run Summary

Client : Sable Permian Resources	Field : PERMIAN	Job Nrb : 198135	BHA Nbr : 6
WellName: University Owens 1-6 Alloc 33 #33HK	Date In : Jul-04-2019	Depth In : 14977	Mag Decl : 6.03
Location : Reagan County Texas	Date Out : Jul-07-2019	Depth Out : 17370	MWD Offset: 326

BHA Objective: Drill 8.75" Lateral Section.

Item #	Description	Serial Nbr	O.D.	I.D.	FN	Top Thread	BxP	Bottom Thread	BxP	Length	Total Len
Bit	TKC66Z2 (9x16's)	A262591	8.75			4 1/2 REG				1	1
1	7" Claw250 Fixed @ 1.75° w/ Slick Sleeve	C2-171079	6.97	0	Slick	4 1/2 IF	B	4 1/2 REG	B	34.73	35.73
2	8 1/8" NM Stabilizer	BT675-797-R	6.61	2.7	2.15	4 1/2 IF	B	4 1/2 IF	P	4.83	40.56
3	NM Slick DC	AWS675-30-3392-R	6.75	3.14	Slick	4 1/2 IF	B	4 1/2 IF	P	29.7	70.26
4	NM Short Flex DC	675-031	6.75	3.3	2.30	4 1/2 IF	B	4 1/2 IF	P	11.86	82.12
5	Double Pin	BT675-1814-R	7.15	3.32	Slick	4 1/2 IF	P	4 1/2 IF	P	3.58	85.7
6	Gap Sub	650-2691	6.75	2.5	0.73	4 1/2 IF	B	4 1/2 IF	B	6.6	92.3
7	NM Flex DC	675-117	6.75	3.25	5.10	4 1/2 IF	B	4 1/2 IF	P	30.65	122.95
8	NM Slick DC	675-223	6.84	3.31	1.31	4 1/2 IF	B	4 1/2 IF	P	28.65	151.6
9	28 Stands 5" DP	84 Joints 5" DP	5	4.27	Slick	4 1/2 IF	B	4 1/2 IF	P	2631.8	2783.4
10	NOV Agitator	AGHF0675-0051	6.84	2.53	1.74	4 1/2 IF	B	4 1/2 IF	P	25.06	2808.46

Performance

Drilling Hours :24.33	Inc In :0.00	Interval :2393
Circulating Hours : 9.00	Inc Out : 90.20	ROP : 98.34
Reaming Hours : 8.08	Azimuth In : 0.00	Feet Rotated : 2169.00
Motor Hours this run : 41.42	Azimuth Out : 184.80	Feet Oriented : 224.00
Pressure Off Bottom : 4900	W.O.B. Sliding : 42	BHA Performance : 11
Pressure On Bottom : 5500	W.O.B. Rotating : 32	Proposed Build Rate: 2
Sliding Hours : 5.333	Rotating Hours : 19.000	

Motor

Motor Size : 7	Motor Bend : 1.83	Stator Fit : Hard Rubber	Circ Temp :
Serial Number : C2-171079	Bit To Bend Distance : 4.65	Stator Mnuf :	Static Temp :
Lobes :	Motor Add On : Thread Protector	PDM Supplier :	
Stages : 0.00	Effective Diameter : 7.75	Flow Rate (g/m) : 725	
Motor (Rev/g) : 0.000	Motor Ctr Stab:	Table (RPM) : 80.00	Mist (g/m) : 0
Cum Motor Hours : 41.42		Total Bit Speed: 80.00	N2 (ft³/m) : 0
Motor Failure ? No			
Failure Code :	Rig Down Time :		
Failure Description:			

Particulars

Formations Drilled

Plugged In Hours : 81	
Pulses/Power Level:	
MWD Supplier	
MWD Operator 1:	
MWD Operator 2:	

Equipment Numbers

MWD Type : Negative Pulse Tool	APC # :	Directional Sensor #	Gamma Sensor #
Gap Sub # :	SEA # :	Choke Sub Nozzle :	Circ Temp
Transmitter Sub # :	PSA # :		Static Temp
Battery Harness	1 :	2 :	3 :
Interconnec	1.	2.	3.
	9.	10.	11.
		12.	

Failure Description

Failure Reason :

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Section 5

Slide Sheets

CATHEDRAL ENERGY SERVICES

4701 United Drive
Oklahoma City, OK 73179
Office Phone: 405.261.6011





Slide Sheet

Client : Sable Permian Resources	Field : PERMIAN	Motor Bend : 1.83	Job Nbr : 198135
Well Name : University Owens 1-6 Alloc 33 #33HK	Date In : Jun-22-2019	Depth In : 961	Motor Add On : Screw on stab
Reagan County Texas	Jun-24-2019	Effective Diameter : 11.5	BHA Nbr : 1
Location :	Date Out :	Depth Out : 3414	

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	1103.00	1045.00	0.8	254.9	1106.28	0.27	-8.01	0.00	-0.15	-2.65	0.28	1044.98	0.29	0.00	0.00	0.00	0.00	0	ROT		
0	1198.00	1140.00	1.1	256.8	95.00	0.32	2.00	0.00	-0.53	-4.18	0.32	1139.96	0.75	0.00	0.00	0.00	0.00	0	ROT		
0	1292.00	1234.00	2.5	234.8	94.00	1.49	-23.40	7.68	-1.92	-6.74	1.63	1233.92	2.27	20.00	74.00	1198.00	1218.00	160	Left		
0	1385.00	1327.00	5.1	222.8	93.00	2.80	-12.90	12.30	-6.12	-11.20	2.91	1326.70	6.71	22.00	71.00	1292.00	1314.00	170	Left		
0	1479.00	1421.00	7.3	217.3	94.00	2.34	-5.85	15.18	-13.94	-17.66	2.42	1420.15	14.86	15.00	79.00	1385.00	1400.00	20	Left		
0	1573.00	1515.00	8.3	207.8	94.00	1.06	-10.11	10.86	-24.69	-24.45	1.73	1513.28	25.96	15.00	79.00	1479.00	1494.00	70	Left		
0	1667.00	1609.00	9.3	202.1	94.00	1.06	-6.06	11.05	-37.73	-30.47	1.41	1606.18	39.30	12.00	82.00	1573.00	1585.00	40	Left		
0	1761.00	1703.00	9.0	201.1	94.00	-0.32	-1.06	0.00	-51.63	-35.97	0.36	1698.98	53.47	0.00	0.00	0.00	0.00	0	ROT		
0	1855.00	1797.00	10.6	200.3	94.00	1.70	-0.85	8.03	-66.60	-41.62	1.71	1791.61	68.72	20.00	74.00	1761.00	1781.00	20	Left		
0	1949.00	1891.00	13.7	202.6	94.00	3.30	2.45	12.55	-84.99	-48.90	3.34	1883.49	87.47	25.00	69.00	1855.00	1880.00	0	HS		
0	2043.00	1985.00	15.4	203.1	94.00	1.81	0.53	11.36	-106.75	-58.07	1.81	1974.47	109.68	15.00	79.00	1949.00	1964.00	30	Left		
0	2137.00	2079.00	15.1	203.6	94.00	-0.32	0.53	0.00	-129.45	-67.87	0.35	2065.16	132.87	0.00	0.00	0.00	0.00	0	ROT		
0	2231.00	2173.00	14.6	204.8	94.00	-0.53	1.28	0.00	-151.42	-77.74	0.62	2156.02	155.34	0.00	0.00	0.00	0.00	0	ROT		
0	2325.00	2267.00	16.4	205.3	94.00	1.91	0.53	7.22	-174.17	-88.38	1.92	2246.60	178.63	25.00	69.00	2231.00	2256.00	30	Left		
0	2419.00	2361.00	16.6	205.9	94.00	0.21	0.64	0.00	-198.25	-99.92	0.28	2336.73	203.29	0.00	0.00	0.00	0.00	0	ROT		
0	2513.00	2455.00	16.3	206.9	94.00	-0.32	1.06	0.00	-222.09	-111.75	0.44	2426.88	227.72	0.00	0.00	0.00	0.00	0	ROT		
0	2607.00	2549.00	15.9	207.0	94.00	-0.43	0.11	0.00	-245.33	-123.57	0.43	2517.19	251.56	0.00	0.00	0.00	0.00	0	ROT		
0	2701.00	2643.00	16.9	201.9	94.00	1.06	-5.43	7.96	-269.48	-134.51	1.86	2607.37	276.26	22.00	72.00	2607.00	2629.00	65	Left		
0	2795.00	2737.00	17.1	200.8	94.00	0.21	-1.17	0.00	-295.08	-144.51	0.40	2697.27	302.35	0.00	0.00	0.00	0.00	0	ROT		
0	2890.00	2832.00	16.7	201.7	95.00	-0.42	0.95	0.00	-320.82	-154.52	0.50	2788.16	328.58	0.00	0.00	0.00	0.00	0	ROT		
0	2983.00	2925.00	16.4	202.6	93.00	-0.32	0.97	0.00	-345.35	-164.51	0.42	2877.31	353.62	0.00	0.00	0.00	0.00	0	ROT		
0	3077.00	3019.00	15.9	203.4	94.00	-0.53	0.85	0.00	-369.42	-174.72	0.58	2967.60	378.19	0.00	0.00	0.00	0.00	0	ROT		
0	3171.00	3113.00	15.4	203.9	94.00	-0.53	0.53	0.00	-392.65	-184.89	0.55	3058.12	401.93	0.00	0.00	0.00	0.00	0	ROT		
0	3265.00	3207.00	15.3	204.8	94.00	-0.11	0.96	0.00	-415.32	-195.15	0.27	3148.76	425.11	0.00	0.00	0.00	0.00	0	ROT		
0	3359.00	3301.00	14.9	205.7	94.00	-0.43	0.96	0.00	-437.47	-205.59	0.49	3239.52	447.79	0.00	0.00	0.00	0.00	0	ROT		
0	3414.00	3356.00	15.3	205.7	55.00	0.73	0.00	0.00	-450.38	-211.81	0.73	3292.62	461.01	10.00	45.00	3359.00	3369.00	45	Left		



Slide Sheet

Client : Sable Permian Resources	Field : PERMIAN	Motor Bend : 1.75	Job Nbr : 198135
Well Name : University Owens 1-6 Alloc 33 #33HK	Date In : Jun-24-2019	Depth In : 3414	Motor Add On : Screw on stab
Reagan County Texas	Jun-26-2019	Effective Diameter : 11.34	BHA Nbr : 2
Location :	Date Out :	Depth Out : 5802	

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	3464.00	3395.00	15.9	205.3	50.00	1.54	-1.03	0.00	-459.84	-216.32	1.56	3330.18	470.70	0.00	0.00	0.00	0.00	0	ROT		
0	3558.00	3489.00	16.0	205.5	94.00	0.11	0.21	0.00	-483.18	-227.40	0.12	3420.56	494.59	0.00	0.00	0.00	0.00	0	ROT		
0	3652.00	3583.00	15.3	206.1	94.00	-0.74	0.64	0.00	-506.01	-238.43	0.76	3511.08	517.98	0.00	0.00	0.00	0.00	0	ROT		
0	3746.00	3677.00	14.4	202.4	94.00	-0.96	-3.94	5.45	-527.95	-248.34	1.39	3601.94	540.42	24.00	70.00	3652.00	3676.00	45	Left		
0	3840.00	3771.00	15.5	200.7	94.00	1.17	-1.81	4.93	-550.51	-257.24	1.26	3692.76	563.42	24.00	70.00	3746.00	3770.00	20	Left		
0	3934.00	3865.00	15.4	200.9	94.00	-0.11	0.21	0.00	-573.92	-266.13	0.12	3783.36	587.27	0.00	0.00	0.00	0.00	0	ROT		
0	4028.00	3959.00	15.4	200.6	94.00	0.00	-0.32	0.40	-597.26	-274.97	0.08	3873.98	611.05	20.00	74.00	3934.00	3954.00	20	Left		
0	4121.00	4052.00	14.6	200.4	93.00	-0.86	-0.22	0.00	-619.81	-283.40	0.86	3963.81	634.01	0.00	0.00	0.00	0.00	0	ROT		
0	4216.00	4147.00	14.2	202.8	95.00	-0.42	2.53	3.59	-641.77	-292.09	0.76	4055.83	656.40	20.00	75.00	4121.00	4141.00	0	HS		
0	4310.00	4241.00	14.8	203.0	94.00	0.64	0.21	5.02	-663.45	-301.25	0.64	4146.84	678.54	12.00	82.00	4216.00	4228.00	20	Left		
0	4404.00	4335.00	14.2	201.5	94.00	-0.64	-1.60	0.00	-685.23	-310.17	0.75	4237.84	700.76	0.00	0.00	0.00	0.00	0	ROT		
0	4498.00	4429.00	13.5	201.9	94.00	-0.74	0.43	0.00	-706.14	-318.49	0.75	4329.11	722.08	0.00	0.00	0.00	0.00	0	ROT		
0	4592.00	4523.00	12.3	202.9	94.00	-1.28	1.06	0.00	-725.54	-326.48	1.30	4420.73	741.89	0.00	0.00	0.00	0.00	0	ROT		
0	4686.00	4617.00	10.8	202.9	94.00	-1.60	0.00	0.00	-742.88	-333.80	1.60	4512.83	759.59	0.00	0.00	0.00	0.00	0	ROT		
0	4781.00	4712.00	9.0	201.6	95.00	-1.89	-1.37	12.09	-757.99	-340.00	1.91	4606.41	775.01	15.00	80.00	4686.00	4701.00	180	Right		
0	4875.00	4806.00	6.0	198.4	94.00	-3.19	-3.40	12.11	-769.49	-344.26	3.22	4699.60	786.72	25.00	69.00	4781.00	4806.00	180	Right		
0	4969.00	4900.00	3.5	206.1	94.00	-2.66	8.19	11.19	-776.73	-347.07	2.74	4793.27	794.10	23.00	71.00	4875.00	4898.00	180	Right		
0	5063.00	4994.00	1.1	207.8	94.00	-2.55	1.81	9.60	-780.10	-348.75	2.55	4887.18	797.56	28.00	66.00	4969.00	4997.00	180	Right		
0	5157.00	5088.00	0.1	56.4	94.00	-1.06	-161.06	9.91	-780.86	-349.11	1.26	4981.18	798.33	9.00	85.00	5063.00	5072.00	20	Right		
0	5251.00	5182.00	0.4	19.8	94.00	0.32	-38.94	0.00	-780.50	-348.93	0.35	5075.18	797.96	0.00	0.00	0.00	0.00	0	ROT		
0	5346.00	5277.00	0.4	323.7	95.00	0.00	-59.05	0.00	-779.92	-349.01	0.40	5170.18	797.39	0.00	0.00	0.00	0.00	0	ROT		
0	5439.00	5370.00	0.4	289.0	93.00	0.00	-37.31	0.00	-779.56	-349.51	0.26	5263.17	797.05	0.00	0.00	0.00	0.00	0	ROT		
0	5534.00	5465.00	0.3	235.7	95.00	-0.11	-56.11	0.00	-779.59	-350.03	0.34	5358.17	797.11	0.00	0.00	0.00	0.00	0	ROT		
0	5628.00	5559.00	0.1	242.6	94.00	-0.21	7.34	0.00	-779.77	-350.31	0.21	5452.17	797.30	0.00	0.00	0.00	0.00	0	ROT		
0	5722.00	5653.00	0.1	126.6	94.00	0.00	-123.40	0.00	-779.85	-350.31	0.18	5546.17	797.39	0.00	0.00	0.00	0.00	0	ROT		
0	5802.00	5733.00	0.1	152.2	80.00	0.00	32.00	0.00	-779.96	-350.22	0.06	5626.17	797.48	0.00	0.00	0.00	0.00	0	ROT		



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Client : Sable Permian Resources	Field : PERMIAN	Motor Bend : 1.75	Job Nbr : 198135
Well Name : University Owens 1-6 Alloc 33 #33HK	Date In : Jun-27-2019 Depth In : 5802	Motor Add On : Screw on stab	BHA Nbr : 3
Reagan County Texas	Jun-27-2019	Effective Diameter : 11.34	
Location :	Date Out : Depth Out : 6715		

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	0.00	0.00	0.0	0.0	98.00	0.00	-142.13	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0	ROT		
0	5993.00	5934.00	0.2	310.7	93.00	0.11	-51.61	0.00	-779.76	-350.31	0.16	5827.17	797.29	0.00	0.00	0.00	0.00	0	ROT		
0	6087.00	6028.00	0.2	264.7	94.00	0.00	-48.94	0.00	-779.67	-350.59	0.17	5921.17	797.22	0.00	0.00	0.00	0.00	0	ROT		
0	6181.00	6122.00	0.5	295.2	94.00	0.32	32.45	0.00	-779.51	-351.13	0.36	6015.17	797.08	0.00	0.00	0.00	0.00	0	ROT		
0	6275.00	6216.00	0.6	273.4	94.00	0.11	-23.19	0.00	-779.30	-351.99	0.24	6109.16	796.93	0.00	0.00	0.00	0.00	0	ROT		
0	6369.00	6310.00	0.9	290.6	94.00	0.32	18.30	0.00	-779.01	-353.17	0.40	6203.16	796.70	0.00	0.00	0.00	0.00	0	ROT		
0	6464.00	6405.00	0.9	285.5	95.00	0.00	-5.37	0.00	-778.55	-354.59	0.08	6298.14	796.32	0.00	0.00	0.00	0.00	0	ROT		
0	6558.00	6499.00	0.9	278.6	94.00	0.00	-7.34	0.00	-778.24	-356.03	0.12	6392.13	796.08	0.00	0.00	0.00	0.00	0	ROT		
0	6652.00	6593.00	0.9	274.8	94.00	0.00	-4.04	0.00	-778.07	-357.50	0.06	6486.12	795.99	0.00	0.00	0.00	0.00	0	ROT		
0	6715.00	6656.00	0.9	279.6	63.00	0.00	7.62	0.00	-777.95	-358.48	0.12	6549.11	795.92	0.00	0.00	0.00	0.00	0	ROT		



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Client : Sable Permian Resources	Field : PERMIAN	Motor Bend : 2.25	Job Nbr : 198135
Well Name : University Owens 1-6 Alloc 33 #33HK	Date In : Jun-28-2019 Depth In : 6715	Motor Add On : Slick	BHA Nbr : 4
Location : Reagan County Texas	Date Out : Jun-30-2019 Depth Out : 7700	Effective Diameter : 7.32	
BHA Objective :			

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	6825.00	6774.00	1.1	270.6	110.00	0.17	-7.63	0.00	-777.78	-360.53	0.22	6667.10	795.86	0.00	0.00	0.00	0.00	0	ROT		
0	6919.00	6868.00	0.8	270.1	94.00	-0.32	-0.53	0.00	-777.77	-362.08	0.32	6761.08	795.93	0.00	0.00	0.00	0.00	0	ROT		
0	6987.00	6936.00	1.5	217.6	68.00	1.03	-77.21	23.91	-778.47	-363.10	1.76	6829.07	796.69	56.00	12.00	6931.00	6987.00	179	Left		
0	7013.00	6962.00	4.6	207.0	26.00	11.92	-40.77	12.07	-779.67	-363.78	12.07	6855.03	797.93	26.00	0.00	6987.00	7013.00	170	Right		
0	7060.00	7009.00	12.0	197.3	47.00	15.74	-20.64	15.97	-786.03	-366.09	15.97	6901.51	804.39	47.00	0.00	7013.00	7060.00	35	Left		
0	7106.00	7055.00	19.6	188.3	46.00	16.52	-19.57	17.31	-798.25	-368.63	17.31	6945.74	816.73	42.00	4.00	7064.00	7106.00	35	Left		
0	7153.00	7102.00	26.3	183.6	47.00	14.26	-10.00	16.14	-816.46	-370.43	14.77	6989.00	835.01	37.00	0.00	7116.00	7153.00	15	Left		
0	7200.00	7149.00	31.9	182.4	47.00	11.91	-2.55	15.22	-839.28	-371.60	11.98	7030.05	857.86	37.00	0.00	7163.00	7200.00	15	Left		
0	7247.00	7196.00	37.1	182.5	47.00	11.06	0.21	14.05	-865.87	-372.74	11.06	7068.77	884.47	32.00	0.00	7215.00	7247.00	50	Left		
0	7294.00	7243.00	41.7	177.8	47.00	9.79	-10.00	17.13	-895.67	-372.76	11.66	7105.09	914.24	27.00	20.00	7267.00	7294.00	30	Left		
0	7341.00	7290.00	45.7	174.0	47.00	8.51	-8.09	17.72	-928.04	-370.40	10.18	7139.07	946.43	20.00	27.00	7321.00	7341.00	0	HS		
0	7388.00	7337.00	49.4	174.8	47.00	7.87	1.70	18.73	-962.55	-367.02	7.97	7170.79	980.71	17.00	30.00	7371.00	7388.00	30	Right		
0	7435.00	7384.00	52.0	178.1	47.00	5.53	7.02	21.43	-998.84	-364.79	7.75	7200.56	1016.83	20.00	27.00	7415.00	7435.00	20	Right		
0	7482.00	7431.00	54.5	181.6	47.00	5.32	7.45	18.78	-1036.48	-364.71	7.99	7228.68	1054.42	21.00	26.00	7461.00	7482.00	0	HS		
0	7529.00	7478.00	58.6	183.4	47.00	8.72	3.83	20.79	-1075.65	-366.44	9.29	7254.58	1093.62	34.00	13.00	7495.00	7529.00	20	Left		
0	7576.00	7525.00	66.1	182.7	47.00	15.96	-1.49	22.13	-1117.19	-368.64	16.01	7276.38	1135.23	37.00	10.00	7539.00	7576.00	10	Left		
0	7623.00	7572.00	74.0	182.3	47.00	16.81	-0.85	21.38	-1161.30	-370.56	16.83	7292.40	1179.37	27.00	20.00	7596.00	7623.00	10	Left		
0	7670.00	7619.00	79.8	182.7	47.00	12.34	0.85	21.53	-1207.01	-372.56	12.37	7303.05	1225.12	19.00	28.00	7651.00	7670.00	20	Left		
0	7700.00	7649.00	82.6	182.9	30.00	9.33	0.67	70.17	-1236.62	-374.01	9.36	7307.64	1254.77	15.00	15.00	7685.00	7700.00	20	Left		



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Client : Sable Permian Resources	Field : PERMIAN	Motor Bend : 1.83	Job Nbr : 198135
Well Name : University Owens 1-6 Alloc 33 #33HK	Date In : Jun-30-2019	Depth In : 7700	Motor Add On : Thread Protector
Reagan County Texas	Jul-03-2019	Effective Diameter : 7.75	BHA Nbr : 5
Location :	Date Out :	Depth Out : 14977	

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	7885.00	7826.00	90.3	182.3	95.00	2.21	-1.16	15.80	-1413.07	-383.22	2.50	7315.46	1431.45	0.00	0.00	0.00	0.00	0	ROT		
0	7979.00	7920.00	89.4	181.1	94.00	-0.96	-1.28	7.50	-1507.02	-386.01	1.60	7315.71	1525.42	20.00	74.00	7885.00	7905.00	110	Left		
0	8072.00	8013.00	90.1	183.3	93.00	0.75	2.37	0.00	-1599.95	-389.58	2.48	7316.11	1618.41	0.00	0.00	0.00	0.00	0	ROT		
0	8167.00	8108.00	89.2	181.5	95.00	-0.95	-1.89	8.05	-1694.86	-393.56	2.12	7316.69	1713.39	25.00	70.00	8072.00	8097.00	110	Left		
0	8260.00	8201.00	89.2	180.1	93.00	0.00	-1.51	0.00	-1787.83	-394.86	1.51	7317.99	1806.31	0.00	0.00	0.00	0.00	0	ROT		
0	8355.00	8296.00	88.2	178.9	95.00	-1.05	-1.26	0.00	-1882.80	-394.03	1.64	7320.15	1901.10	0.00	0.00	0.00	0.00	0	ROT		
0	8448.00	8389.00	91.7	181.5	93.00	3.76	2.80	29.07	-1975.78	-394.35	4.69	7320.23	1993.96	15.00	78.00	8355.00	8370.00	30	Right		
0	8542.00	8483.00	91.7	181.9	94.00	0.00	0.43	0.00	-2069.70	-397.14	0.43	7317.44	2087.90	0.00	0.00	0.00	0.00	0	ROT		
0	8636.00	8577.00	89.4	178.2	94.00	-2.45	-3.94	36.30	-2163.67	-397.22	4.63	7316.54	2181.74	12.00	82.00	8542.00	8554.00	125	Left		
0	8730.00	8671.00	89.0	178.0	94.00	-0.43	-0.21	0.00	-2257.61	-394.11	0.48	7317.85	2275.38	0.00	0.00	0.00	0.00	0	ROT		
0	8824.00	8765.00	88.9	178.2	94.00	-0.11	0.21	0.00	-2351.54	-390.99	0.24	7319.57	2369.01	0.00	0.00	0.00	0.00	0	ROT		
0	8919.00	8860.00	92.1	181.6	95.00	3.37	3.58	0.00	-2446.51	-390.82	4.91	7318.74	2463.84	0.00	0.00	0.00	0.00	0	ROT		
0	9013.00	8954.00	90.0	179.8	94.00	-2.23	-1.91	23.05	-2540.48	-391.97	2.94	7317.02	2557.74	12.00	82.00	8919.00	8931.00	150	Left		
0	9107.00	9048.00	86.9	177.5	94.00	-3.30	-2.45	0.00	-2634.40	-389.76	4.11	7319.56	2651.41	0.00	0.00	0.00	0.00	0	ROT		
0	9201.00	9142.00	88.9	179.9	94.00	2.13	2.55	20.82	-2728.30	-387.63	3.32	7323.01	2745.06	15.00	79.00	9107.00	9122.00	45	Right		
0	9294.00	9235.00	93.2	183.3	93.00	4.62	3.66	45.67	-2821.22	-390.22	5.89	7321.30	2837.98	12.00	81.00	9201.00	9213.00	45	Right		
0	9388.00	9329.00	90.8	181.3	94.00	-2.55	-2.13	20.82	-2915.07	-393.99	3.32	7318.02	2931.91	15.00	79.00	9294.00	9309.00	150	Left		
0	9482.00	9423.00	89.5	178.7	94.00	-1.38	-2.77	0.00	-3009.06	-393.99	3.09	7317.77	3025.76	0.00	0.00	0.00	0.00	0	ROT		
0	9576.00	9517.00	88.6	178.3	94.00	-0.96	-0.43	0.00	-3103.01	-391.53	1.05	7319.33	3119.45	0.00	0.00	0.00	0.00	0	ROT		
0	9671.00	9612.00	92.1	180.4	95.00	3.68	2.21	0.00	-3197.99	-390.45	4.30	7318.75	3214.23	0.00	0.00	0.00	0.00	0	ROT		
0	9764.00	9705.00	88.8	178.6	93.00	-3.55	-1.94	0.00	-3290.96	-389.64	4.04	7318.02	3307.03	0.00	0.00	0.00	0.00	0	ROT		
0	9858.00	9799.00	90.5	183.0	94.00	1.81	4.68	26.20	-3384.93	-390.96	5.02	7318.60	3400.93	18.00	76.00	9764.00	9782.00	90	Right		
0	9952.00	9893.00	91.1	183.3	94.00	0.64	0.32	0.00	-3478.77	-396.12	0.71	7317.28	3494.92	0.00	0.00	0.00	0.00	0	ROT		
0	10046.00	9987.00	87.9	182.2	94.00	-3.40	-1.17	30.76	-3572.65	-400.63	3.60	7318.10	3588.90	11.00	83.00	9952.00	9963.00	180	Right		
0	10140.00	10081.00	90.7	184.7	94.00	2.98	2.66	0.00	-3666.45	-406.28	3.99	7319.25	3682.88	0.00	0.00	0.00	0.00	0	ROT		
0	10234.00	10175.00	88.5	182.8	94.00	-2.34	-2.02	19.38	-3760.24	-412.43	3.09	7319.91	3776.86	15.00	79.00	10140.00	10155.00	145	Left		
0	10328.00	10269.00	90.1	184.7	94.00	1.70	2.02	0.00	-3854.03	-418.58	2.64	7321.06	3870.84	0.00	59.00	0.00	0.00	0	ROT		
0	10422.00	10363.00	89.4	182.6	94.00	-0.74	-2.23	12.30	-3947.83	-424.56	2.35	7321.47	3964.83	18.00	76.00	10328.00	10346.00	110	Left		



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Client : Sable Permian Resources										Field : PERMIAN					Motor Bend : 1.83					Job Nbr : 198135				
Well Name : University Owens 1-6 Alloc 33 #33HK										Date In : Jun-30-2019					Depth In : 7700					Motor Add On : Thread Protector				
Reagan County Texas										Jul-03-2019					Effective Diameter : 7.75					BHA Nbr : 5				
Location :										Date Out :					Depth Out : 14977									

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	10516.00	10457.00	88.6	182.4	94.00	-0.85	-0.21	0.00	-4041.72	-428.66	0.88	7323.11	4058.81	0.00	59.00	0.00	0.00	0	ROT		
0	10610.00	10551.00	90.3	184.4	94.00	1.81	2.13	0.00	-4135.55	-434.24	2.79	7324.01	4152.79	0.00	59.00	0.00	0.00	0	ROT		
0	10704.00	10645.00	90.7	181.7	94.00	0.43	-2.87	13.65	-4229.40	-439.24	2.90	7323.19	4246.78	20.00	74.00	10610.00	10630.00	90	Left		
0	10799.00	10740.00	87.5	179.4	95.00	-3.37	-2.42	0.00	-4324.37	-440.15	4.15	7324.68	4341.66	0.00	59.00	0.00	0.00	0	ROT		
0	10893.00	10834.00	90.6	182.7	94.00	3.30	3.51	0.00	-4418.31	-441.87	4.82	7326.24	4435.56	0.00	59.00	0.00	0.00	0	ROT		
0	10987.00	10928.00	88.8	181.6	94.00	-1.91	-1.17	0.00	-4512.24	-445.40	2.24	7326.73	4529.55	0.00	59.00	0.00	0.00	0	ROT		
0	11081.00	11022.00	87.9	180.8	94.00	-0.96	-0.85	0.00	-4606.18	-447.37	1.28	7329.44	4623.46	0.00	59.00	0.00	0.00	0	ROT		
0	11175.00	11116.00	92.0	181.5	94.00	4.36	0.74	34.66	-4700.14	-449.25	4.42	7329.52	4717.38	12.00	82.00	11081.00	11093.00	20	Left		
0	11269.00	11210.00	89.7	179.7	94.00	-2.45	-1.91	0.00	-4794.11	-450.24	3.11	7328.13	4811.28	0.00	59.00	0.00	0.00	0	ROT		
0	11363.00	11304.00	90.2	180.9	94.00	0.53	1.28	0.00	-4888.11	-450.73	1.38	7328.21	4905.17	0.00	59.00	0.00	0.00	0	ROT		
0	11457.00	11398.00	87.1	178.3	94.00	-3.30	-2.77	0.00	-4982.06	-450.08	4.30	7330.42	4998.95	0.00	59.00	0.00	0.00	0	ROT		
0	11552.00	11493.00	89.6	178.7	95.00	2.63	0.42	21.10	-5076.98	-447.59	2.67	7333.16	5093.61	12.00	83.00	11457.00	11469.00	0	HS		
0	11646.00	11587.00	87.0	176.4	94.00	-2.77	-2.45	0.00	-5170.84	-443.58	3.69	7335.95	5187.12	0.00	59.00	0.00	0.00	0	ROT		
0	11740.00	11681.00	92.8	180.3	94.00	6.17	4.15	34.94	-5264.74	-440.87	7.43	7336.11	5280.74	20.00	74.00	11646.00	11666.00	45	Right		
0	11835.00	11776.00	92.5	179.7	95.00	-0.32	-0.63	0.00	-5359.64	-440.87	0.71	7331.72	5375.51	0.00	59.00	0.00	0.00	0	ROT		
0	11929.00	11870.00	89.6	178.5	94.00	-3.09	-1.28	0.00	-5453.60	-439.39	3.34	7330.00	5469.26	0.00	59.00	0.00	0.00	0	ROT		
0	12023.00	11964.00	87.6	179.0	94.00	-2.13	0.53	13.74	-5547.55	-437.34	2.19	7332.29	5562.96	15.00	79.00	11929.00	11944.00	90	Right		
0	12117.00	12058.00	91.1	181.1	94.00	3.72	2.23	0.00	-5641.52	-437.43	4.34	7333.36	5656.80	0.00	59.00	0.00	0.00	0	ROT		
0	12211.00	12152.00	89.1	181.3	94.00	-2.13	0.21	20.10	-5735.49	-439.40	2.14	7333.20	5750.75	10.00	84.00	12117.00	12127.00	145	Right		
0	12305.00	12246.00	91.1	183.0	94.00	2.13	1.81	0.00	-5829.42	-442.92	2.79	7333.03	5844.73	0.00	0.00	0.00	0.00	0	ROT		
0	12400.00	12341.00	90.9	185.0	95.00	-0.21	2.11	13.40	-5924.17	-449.55	2.12	7331.37	5939.70	15.00	80.00	12305.00	12320.00	180	Right		
0	12493.00	12434.00	88.5	183.7	93.00	-2.58	-1.40	13.65	-6016.89	-456.60	2.93	7331.86	6032.66	20.00	73.00	12400.00	12420.00	150	Left		
0	12588.00	12529.00	86.8	184.4	95.00	-1.79	0.74	11.49	-6111.57	-463.30	1.93	7335.76	6127.56	16.00	79.00	12493.00	12509.00	180	Right		
0	12682.00	12623.00	86.9	184.7	94.00	0.11	0.32	0.00	-6205.13	-470.75	0.34	7340.92	6221.39	0.00	0.00	0.00	0.00	0	ROT		



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Client : Sable Permian Resources				Field : PERMIAN				Motor Bend : 1.83				Job Nbr : 198135			
Well Name : University Owens 1-6 Alloc 33 #33HK				Date In : Jun-30-2019				Depth In : 7700				Motor Add On : Thread			
Reagan County Texas				Jul-03-2019				Effective Diameter : 7.75				BHA Nbr : 5			
Location :				Date Out :				Depth Out : 14977							

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	12776.00	12717.00	92.4	185.4	94.00	5.85	0.74	25.20	-6298.73	-479.02	5.90	7341.50	6315.29	22.00	72.00	12682.00	12704.00	45	Left		
0	12870.00	12811.00	91.1	182.6	94.00	-1.38	-2.98	15.43	-6392.45	-485.57	3.28	7338.63	6409.23	20.00	74.00	12776.00	12796.00	130	Left		
0	12964.00	12905.00	90.6	184.3	94.00	-0.53	1.81	0.00	-6486.26	-491.23	1.88	7337.23	6503.21	0.00	0.00	0.00	0.00	0	ROT		
0	13059.00	13000.00	89.5	182.5	95.00	-1.16	-1.89	8.44	-6581.09	-496.86	2.22	7337.15	6598.20	25.00	70.00	12964.00	12989.00	90	Left		
0	13153.00	13094.00	89.3	179.8	94.00	-0.21	-2.87	10.83	-6675.06	-498.75	2.88	7338.13	6692.14	25.00	69.00	13059.00	13084.00	100	Left		
0	13246.00	13187.00	92.2	180.9	93.00	3.12	1.18	0.00	-6768.03	-499.32	3.33	7336.91	6785.01	0.00	0.00	0.00	0.00	0	ROT		
0	13341.00	13282.00	89.8	180.1	95.00	-2.53	-0.84	10.12	-6863.01	-500.14	2.66	7335.26	6879.90	25.00	70.00	13246.00	13271.00	90	Left		
0	13435.00	13376.00	90.9	180.2	94.00	1.17	0.11	0.00	-6957.00	-500.39	1.18	7334.68	6973.77	0.00	0.00	0.00	0.00	0	ROT		
0	13529.00	13470.00	90.4	180.2	94.00	-0.53	0.00	0.00	-7051.00	-500.72	0.53	7333.62	7067.65	0.00	0.00	0.00	0.00	0	ROT		
0	13623.00	13564.00	89.8	179.3	94.00	-0.64	-0.96	0.00	-7145.00	-500.31	1.15	7333.45	7161.49	0.00	0.00	0.00	0.00	0	ROT		
0	13717.00	13658.00	91.1	180.5	94.00	1.38	1.28	0.00	-7238.99	-500.14	1.88	7332.71	7255.35	0.00	0.00	0.00	0.00	0	ROT		
0	13811.00	13752.00	90.8	179.4	94.00	-0.32	-1.17	0.00	-7332.97	-500.06	1.21	7331.16	7349.19	0.00	0.00	0.00	0.00	0	ROT		
0	13905.00	13846.00	90.1	178.1	94.00	-0.74	-1.38	0.00	-7426.95	-498.01	1.57	7330.42	7442.92	0.00	59.00	0.00	0.00	0	ROT		
0	13998.00	13939.00	91.5	179.5	93.00	1.51	1.51	0.00	-7519.91	-496.06	2.13	7329.12	7535.65	0.00	59.00	0.00	0.00	0	ROT		
0	14093.00	14034.00	90.1	181.9	95.00	-1.47	2.53	13.89	-7614.89	-497.23	2.92	7327.79	7630.56	20.00	75.00	13998.00	14018.00	100	Right		
0	14186.00	14127.00	91.5	182.6	93.00	1.51	0.75	0.00	-7707.80	-500.88	1.68	7326.49	7723.54	0.00	59.00	0.00	0.00	0	ROT		
0	14280.00	14221.00	88.5	182.4	94.00	-3.19	-0.21	25.06	-7801.70	-504.98	3.20	7326.49	7817.52	12.00	82.00	14186.00	14198.00	180	Right		
0	14374.00	14315.00	89.2	182.8	94.00	0.74	0.43	0.00	-7895.59	-509.24	0.86	7328.38	7911.50	0.00	59.00	0.00	0.00	0	ROT		
0	14468.00	14409.00	92.8	184.5	94.00	3.83	1.81	0.00	-7989.36	-515.22	4.24	7326.74	8005.46	0.00	59.00	0.00	0.00	0	ROT		
0	14562.00	14503.00	89.4	181.2	94.00	-3.62	-3.51	23.69	-8083.20	-519.89	5.04	7324.94	8099.41	20.00	74.00	14468.00	14488.00	140	Left		
0	14656.00	14597.00	90.6	182.1	94.00	1.28	0.96	0.00	-8177.16	-522.60	1.60	7324.94	8193.38	0.00	59.00	0.00	0.00	0	ROT		
0	14750.00	14691.00	90.4	182.1	94.00	-0.21	0.00	0.00	-8271.09	-526.04	0.21	7324.11	8287.37	0.00	59.00	0.00	0.00	0	ROT		
0	14844.00	14785.00	90.3	182.2	94.00	-0.11	0.11	0.00	-8365.03	-529.57	0.15	7323.54	8381.35	0.00	59.00	0.00	0.00	0	ROT		
0	14938.00	14879.00	92.7	184.6	94.00	2.55	2.55	0.00	-8458.81	-535.14	3.61	7321.08	8475.31	0.00	59.00	0.00	0.00	0	ROT		



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Client : Sable Permian Resources	Field : PERMIAN	Motor Bend : 1.83	Job Nbr : 198135
Well Name : University Owens 1-6 Alloc 33 #33HK	Date In : Jul-04-2019	Depth In : 14977	Motor Add On : Thread Protector
Reagan County Texas	Jul-07-2019	Effective Diameter : 7.75	BHA Nbr : 6
Location :	Date Out :	Depth Out : 17370	

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	0.00	0.00	0.0	0.0	36.00	-2.95	-1.89	0.00	0.00	0.00	3.50	0.00	0.00	0.00	0.00	0.00	0.00	0	ROT		
0	15128.00	15069.00	89.6	182.9	95.00	-0.32	0.11	0.00	-8648.46	-545.99	0.33	7319.34	8665.26	0.00	59.00	0.00	0.00	0	ROT		
0	15222.00	15163.00	89.5	183.4	94.00	-0.11	0.53	0.00	-8742.32	-551.15	0.54	7320.08	8759.26	0.00	59.00	0.00	0.00	0	ROT		
0	15316.00	15257.00	90.3	181.7	94.00	0.85	-1.81	8.54	-8836.22	-555.34	2.00	7320.24	8853.25	22.00	72.00	15222.00	15244.00	80	Left		
0	15410.00	15351.00	88.3	180.1	94.00	-2.13	-1.70	0.00	-8930.19	-556.81	2.72	7321.39	8947.17	0.00	59.00	0.00	0.00	0	ROT		
0	15504.00	15445.00	91.6	181.6	94.00	3.51	1.60	16.48	-9024.17	-558.21	3.86	7321.47	9041.08	22.00	72.00	15422.00	15444.00	20	Left		
0	15598.00	15539.00	90.0	179.5	94.00	-1.70	-2.23	0.00	-9118.14	-559.11	2.81	7320.16	9134.98	0.00	59.00	0.00	0.00	0	ROT		
0	15692.00	15633.00	90.3	178.8	94.00	0.32	-0.74	5.08	-9212.13	-557.71	0.81	7319.91	9228.76	15.00	79.00	15598.00	15613.00	30	Left		
0	15786.00	15727.00	91.4	178.2	94.00	1.17	-0.64	8.35	-9306.09	-555.25	1.33	7318.52	9322.45	15.00	79.00	15692.00	15707.00	0	HS		
0	15880.00	15821.00	89.3	177.0	94.00	-2.23	-1.28	0.00	-9400.00	-551.32	2.57	7317.94	9416.02	0.00	59.00	0.00	0.00	0	ROT		
0	15975.00	15916.00	91.6	177.6	95.00	2.42	0.63	8.49	-9494.88	-546.84	2.50	7317.20	9510.53	28.00	67.00	15880.00	15908.00	40	Right		
0	16069.00	16010.00	89.7	180.3	94.00	-2.02	2.87	11.00	-9588.85	-545.12	3.51	7316.13	9604.27	30.00	64.00	15975.00	16005.00	40	Right		
0	16163.00	16104.00	91.4	181.8	94.00	1.81	1.60	11.34	-9682.82	-546.84	2.41	7315.23	9698.20	20.00	74.00	16069.00	16089.00	45	Right		
0	16257.00	16198.00	91.0	180.9	94.00	-0.43	-0.96	0.00	-9776.77	-549.06	1.05	7313.26	9792.14	0.00	0.00	0.00	0.00	0	ROT		
0	16350.00	16291.00	89.5	181.4	93.00	-1.61	0.54	0.00	-9869.75	-550.92	1.70	7312.86	9885.08	0.00	0.00	0.00	0.00	0	ROT		
0	16444.00	16385.00	91.9	183.6	94.00	2.55	2.34	13.02	-9963.64	-555.02	3.46	7311.71	9979.06	25.00	69.00	16350.00	16375.00	45	Right		
0	16538.00	16479.00	91.1	183.2	94.00	-0.85	-0.43	0.00	-10057.44	-560.60	0.95	7309.25	10073.02	0.00	0.00	0.00	0.00	0	ROT		
0	16632.00	16573.00	90.1	176.3	94.00	-1.06	-7.34	0.00	-10151.38	-560.19	7.42	7308.26	10166.80	0.00	0.00	0.00	0.00	0	ROT		
0	16726.00	16667.00	89.1	179.5	94.00	-1.06	3.40	9.58	-10245.30	-556.74	3.57	7308.92	10260.41	45.00	49.00	16632.00	16677.00	40	Right		
0	16820.00	16761.00	89.7	181.0	94.00	0.64	1.60	16.15	-10339.29	-557.15	1.72	7309.90	10354.29	0.00	0.00	0.00	0.00	0	ROT		



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Client : Sable Permian Resources			Field : PERMIAN			Motor Bend : 1.83			Job Nbr : 198135			
Well Name : University Owens 1-6 Alloc 33 #33HK			Date In : Jul-04-2019		Depth In : 14977		Motor Add On : Thread Protector			BHA Nbr : 6		
Reagan County Texas			Jul-07-2019				Effective Diameter : 7.75					
Location :			Date Out :		Depth Out : 17370							

Side Trk	Bit	Survey	Incl	Azi mut h	CL	ROB 100ft	ROT 100ft	Motor Output	Lat	Dep	DLG	TVD	VS	FT/Set	FT/Rot	Ori From	Ori To	TF Slide	TF Typ	Formation Name	Comments
0	16914.00	16855.00	89.5	181.5	94.00	-0.21	0.53	0.00	-10433.27	-559.20	0.57	7310.56	10448.24	0.00	0.00	0.00	0.00	0	ROT		
0	17008.00	16949.00	91.9	184.6	94.00	2.55	3.30	0.00	-10527.11	-564.20	4.17	7309.41	10542.21	0.00	0.00	0.00	0.00	0	ROT		
0	17102.00	17043.00	91.7	184.8	94.00	-0.21	0.21	0.00	-10620.74	-571.90	0.30	7306.46	10636.13	0.00	59.00	0.00	0.00	0	ROT		
0	17195.00	17136.00	90.2	183.1	93.00	-1.61	-1.83	0.00	-10713.50	-578.31	2.44	7304.91	10729.10	0.00	59.00	0.00	0.00	0	ROT		
0	17289.00	17230.00	88.4	182.7	94.00	-1.91	-0.43	0.00	-10807.37	-583.06	1.96	7306.06	10823.09	0.00	59.00	0.00	0.00	0	ROT		
0	17370.00	17311.00	90.2	184.8	81.00	2.22	2.59	0.00	-10888.19	-588.36	3.41	7307.05	10904.07	0.00	59.00	0.00	0.00	0	ROT		