

## EP WELLS DAILY OPERATIONS REPORT

Report 21

08/12/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1407H
Wellbore	UNIVERSITY 19 PW UNIT 1407H
WBS No/API No	30264950 / 4230133203

## Event Summary

Event Type	Drilling only	Event Start Date	05/10/2017	Days on Location	20.38
Objective	Drill - Wolfcamp B1 Shale	Original Spud Date	05/11/2017	Days Since Spud	17.94
Est. Days	25.00	Contractor	PRECISION		
Work Unit	PRECISION 559	Days To Release			
		Rig Phone/FAX No.			

## Well Status

Supervisor	DENNIS JOHNSON	Measured Depth(ft)	18,582.00
Engineer	YERMEK TYNYSHBAYEV	TVD(ft)	11,692.78
Other Supervisor	TANNER MANUEL, YU LIU	24 Hr Progress(ft)	1,712.00
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,792.70 / 2,766.70	Hole size(in)	6.125
THF Datum			
Daily NPT(hr/%)	0/0	Last Casing MD	7.000in@12,087.00ft
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	4.500in@
Actual cost to date/AFE	1,799,457/2,726,365.58	Current MW / BH EMW(ppg)	13.30/
Actual divided by AFE	0.66	LOT/FIT EMW(ppg)	
Daily Cost	39,874	Lithology	
		Formation/MD Top	

## HSE Summary

Last Incident	Date	Days	Last Incident	Date	Days	KPI's	
LWC RWC MTC FAC Last casing pressure test			PSI NII HPI <b>GOAL ZERO DAYS</b> <b>PS BARRIER EVENT</b> <b>PS barrier bowtie review</b>	10/12/2016	304	TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)	
Safety Comments:							
NO HSE ISSUES							
MAN HOURS - 282 HRS							

## HSE Drills

Drills/Tests	Date	Days Since Last	JSA's/Toolbox Talks Days Since Last Drill	20
Last Derrick Inspection	05/14/2017	90		
Last BOP function test	05/14/2017	90		
Last BOP Test	06/04/2017			
Next BOP Test				

## Operations Summary

24 Hour Summary
ROTATE/SLIDE DRILL F/16,870' T/18,582'
Update Since Report Time
ROTATE/SLIDE DRILL F/18,582' T/18,900'
24 Hour Forecast
CONTINUE DRILL LATERAL SECTION TOWARD TD, PERFORM CLEAN UP CYCLES, POOH

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## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	4.50	MNH1	DRL		17,283.00	0		ROTATE DRILL F/ 16,870' T/ 17,283' (413' @ 91.7 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6200 PSI FLOW: 290 GPM TORQUE: ON BTM 11K OFF BTM 6K P/U: 230K S/O: 100K ROT: 165K B/G GAS: 421 UNITS B/U GAS: 3000 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
4:30	1.00	MNH1	DRL		17,304.00	0		SLIDE DRILL F/ 17,283' T/ 17,304'(21' @ 21 FPH) WOB: 30K RPM: MOTOR 232 BIT 232 PRESSURE: 5600 PSI FLOW: 290 GPM P/U: 230K S/O: 100K B/G GAS: 950 UNITS B/U GAS: 2658 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
5:30	0.50	MNH1	DRL		17,362.00	0		ROTATE DRILL F/ 17,304' T/ 17,362' (58' @ 116 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6200 PSI FLOW: 290 GPM TORQUE: ON BTM 11K OFF BTM 7K P/U: 230K S/O: 100K ROT: 165K B/G GAS: 421 UNITS B/U GAS: 3000 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
6:00	4.50	MNH1	DRL		17,820.00	0		ROTATE DRILL F/ 17,362' T/ 17,820' (458' @ 101.7 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6400 PSI FLOW: 290 GPM TORQUE: ON BTM 13K OFF BTM 7K P/U: 190K S/O: 140K ROT: 166K B/G GAS: 421 UNITS B/U GAS: 3000 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
10:30	1.00	MNH1	DRL		17,840.00	0		SLIDE DRILL F/ 17,820' T/ 17,840'(20' @ 20 FPH) WOB: 30K RPM: MOTOR 232 BIT 232 PRESSURE: 5400 PSI FLOW: 290 GPM P/U: 190K S/O: 140K B/G GAS: 950 UNITS B/U GAS: 2658 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
11:30	1.50	MNH1	DRL		18,000.00	0		ROTATE DRILL F/ 17,840' T/ 18,000' (160' @ 106.7 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6400 PSI FLOW: 290 GPM TORQUE: ON BTM 13K OFF BTM 7K P/U: 190K S/O: 140K ROT: 166K B/G GAS: 421 UNITS B/U GAS: 3000 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
13:00	1.50	MNH1	DRL		18,040.00	0		SLIDE DRILL F/ 18,000' T/ 18,040'(40' @ 26.6 FPH) WOB: 30K RPM: MOTOR 232 BIT 232 PRESSURE: 5400 PSI FLOW: 290 GPM P/U: 190K S/O: 140K B/G GAS: 950 UNITS B/U GAS: 2658 UNITS MW: 13.5 MOTOR REV/GAL: 0.8

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								NO FLARE
14:30	1.00	MNH1	DRL		18,180.00	0		ROTATE DRILL F/ 18,040 T/ 18,180 (140' @ 140 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6400 PSI FLOW: 290 GPM TORQUE: ON BTM 13K OFF BTM 7K P/U: 190K S/O: 140K ROT: 166K B/G GAS: 421 UNITS B/U GAS: 3000 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
15:30	2.00	MNH1	DRL		18,250.00	0		SLIDE DRILL F/ 18,180' T/ 18,250'(70' @ 35 FPH) WOB: 30K RPM: MOTOR 232 BIT 232 PRESSURE: 5700 PSI FLOW: 290 GPM P/U: 190K S/O: 140K B/G GAS: 950 UNITS B/U GAS: 2658 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
17:30	0.50	MNH1	SVC		18,250.00	0		SERIVCE TOP DRIVE
18:00	1.00	MNH1	DRL		18,360.00	0		ROTATE DRILL F/ 18,250 T/ 18,360 (110' @ 110 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6400 PSI FLOW: 290 GPM TORQUE: ON BTM 13K OFF BTM 7K P/U: 190K S/O: 140K ROT: 166K B/G GAS: 421 UNITS B/U GAS: 3000 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
19:00	1.50	MNH1	DRL		18,388.00	0		SLIDE DRILL F/ 18,360' T/ 18,388'(28' @ 18.6 FPH) WOB: 30K RPM: MOTOR 232 BIT 232 PRESSURE: 5700 PSI FLOW: 290 GPM P/U: 190K S/O: 140K B/G GAS: 950 UNITS B/U GAS: 2658 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
20:30	1.00	MNH1	DRL		18,450.00	0		ROTATE DRILL F/ 18,388 T/ 18,450 (62' @ 62 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6400 PSI FLOW: 290 GPM TORQUE: ON BTM 14K OFF BTM 10K P/U: 240K S/O: 120K ROT: 166K B/G GAS: 421 UNITS B/U GAS: 3000 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
21:30	1.50	MNH1	DRL		18,474.00	0		SLIDE DRILL F/ 18,450' T/ 18,474'(24' @ 16 FPH) WOB: 30K RPM: MOTOR 232 BIT 232 PRESSURE: 5700 PSI FLOW: 290 GPM P/U: 200K S/O: 110K B/G GAS: 950 UNITS B/U GAS: 2658 UNITS MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
23:00	1.00	MNH1	DRL		18,582.00	0		ROTATE DRILL F/ 18,474 T/ 18,582 (108' @ 108 FPH) WOB: 25K RPM: SURF 75 MOTOR 232 BIT 307 PRESSURE: 6400 PSI FLOW: 290 GPM TORQUE: ON BTM 14K OFF BTM 6-10K P/U: 240K S/O: 120K ROT: 166K B/G GAS: 1000 UNITS B/U GAS: 3800 UNITS

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## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								MW: 13.5 MOTOR REV/GAL: 0.8 NO FLARE
<b>Total</b>	<b>24.00</b>							

## Deepest 5 Surveys

MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V.Sec (ft)	DLeg (°/100ft)	Tool
18,209.00	89.93	161.61	11,681.42	-5,809.32	2,424.24	6,256.10	3.13	PTW MWD_2016
18,299.00	89.62	164.27	11,681.77	-5,895.35	2,450.64	6,346.09	2.98	PTW MWD_2016
18,389.00	89.38	165.05	11,682.55	-5,982.14	2,474.45	6,436.07	0.91	PTW MWD_2016
18,479.00	86.14	163.65	11,686.07	-6,068.73	2,498.71	6,525.98	3.92	PTW MWD_2016
18,568.00	86.34	164.32	11,691.91	-6,154.09	2,523.21	6,614.79	0.78	PTW MWD_2016

## Fluid Details

Mud type	Invermul	Oil/Water (%)	56.00/17.00	POM (cc)	
MD (ft)	17,667.00	TS/HGS/LGS (%)	24.90//	CaCl2 (%)	
Mud Density (ppg)	13.30	Sand (%)	0.00	Caom/Clom (ppm)	
Vis (s/qt)	57.00	Oil/Water Ratio (%)	76.70/23.30	ACT	
PV/YP (cp/lbf/100ft²)	25.00/12.000			XS Lime(lbm/bbl)	6.99
Gels 10 s/m (lbf/100ft²)	10.000/17.000	LCM (lbm/bbl)		ES (Volts)	530.0
API/HTHP WL (cc/30min)	0.0/	ECD (ppg)	15.410	R600/300 (°)	
FC/HTHP FC (32nd")	0.0/4.0	H2S (gas unit)		R200/100 (°)	
WPS (ppm)	289,282	KCl (%)		R6/3 (°)	
FL temp. (°F)		Ditch Magnet in Last 24hrs/Cum. (gm)			

## Bit Details

Bit no.	Size (in)	Manufacturer	Model no.	Class	IADC code	Serial no.	Size (32nd")	MD in (ft)	MD out (ft)	IADC Dull Grade
6	6.125	BAKER HUGHES	TD405FX			5271645	5x16	14,220.00		-----

## Bit Operations

MD (ft)	WOB Min/Max (kip)	Current RPM (rpm)	Flow rate (gpm)	SPP (psi)	P bit (psi)	% @ Bit	HHP (hp)	Hours (hr)	Footage (ft)	ROP (ft/hr)	Hours cum (hr)	Footage cum. (ft)	ROP cum. (ft/hr)
17,283.00	25.0/25.0	75	290.0	6,200.00	106.88	1.72	18.08	4.50	413.00	91.8	42.00	3,063.00	72.9
17,304.00	30.0/30.0	0	290.0	5,600.00	106.88	1.91	18.08	1.00	21.00	21.0	43.00	3,084.00	71.7
17,362.00	25.0/25.0	75	290.0	6,200.00	106.88	1.72	18.08	0.50	58.00	116.0	43.50	3,142.00	72.2
17,820.00	25.0/25.0	75	290.0	6,400.00	106.88	1.67	18.08	4.50	458.00	101.8	48.00	3,600.00	75.0
17,840.00	30.0/30.0	0	290.0	5,400.00	106.88	1.98	18.08	1.00	20.00	20.0	49.00	3,620.00	73.9
18,000.00	25.0/25.0	75	290.0	6,400.00	106.88	1.67	18.08	1.50	160.00	106.7	50.50	3,780.00	74.9
18,040.00	30.0/30.0	0	290.0	5,400.00	106.88	1.98	18.08	1.50	40.00	26.7	52.00	3,820.00	73.5
18,180.00	25.0/25.0	75	290.0	6,400.00	106.88	1.67	18.08	1.00	140.00	140.0	53.00	3,960.00	74.7
18,250.00	30.0/30.0	0	290.0	5,700.00	106.88	1.88	18.08	2.00	70.00	35.0	55.00	4,030.00	73.3
18,360.00	25.0/25.0	75	290.0	6,400.00	106.88	1.67	18.08	1.00	110.00	110.0	56.00	4,140.00	73.9
18,388.00	30.0/30.0	0	290.0	5,700.00	106.88	1.88	18.08	1.50	28.00	18.7	57.50	4,168.00	72.5
18,450.00	25.0/25.0	75	290.0	6,400.00	106.88	1.67	18.08	1.00	62.00	62.0	58.50	4,230.00	72.3
18,474.00	30.0/30.0	0	290.0	5,700.00	106.88	1.88	18.08	1.50	24.00	16.0	60.00	4,254.00	70.9
18,582.00	25.0/25.0	75	290.0	6,400.00	106.88	1.67	18.08	1.00	108.00	108.0	61.00	4,362.00	71.5

## Drillstring Components

Item description	# Jts	Length (ft)	OD (in)	Max OD (in)	ID (in)	Connection Name	Weight (ppf)	Grade	Serial no.
4" DRILL PIPE	441	13,878.07	4.000		3.340	XT-39			RIG
SHOCK SUB	1	11.07	5.000		2.000	XT-39			W1836693-1
64 JTS 4" DP	64	2,872.72	4.000		3.340	XT-39			RIG

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## Drillstring Components

Item description	# Jts	Length (ft)	OD (in)	Max OD (in)	ID (in)	Connection Name	Weight (ppf)	Grade	Serial no.
AGITATOR	1	22.10	5.000		2.000	XT-39			W1857319-1 /1583003-10
38 JTS 4" DP	38	1,702.77	4.000		3.340	XT-39			RIG
CROSSOVER	1	2.70	4.800		2.630	XT-39			DR28568
FLOAT SUB	1	1.58	4.625		2.688	3 1/2 IF			NESFS4752 41
FILTER SUB	1	2.88	4.688		2.250	3 1/2 IF			DR20599
NMDC	1	30.12	4.540		2.688	3 1/2 IF			NESNM4755 61
475 GAP SUB	1	3.78	5.100			3 1/2 IF			VG475082P TS
475 CENTRALIZER COLLAR ASSY	1	8.35	5.110			3 1/2 IF			VC475031
475 LANDING SUB	1	3.42	5.080			3 1/2 IF			VL475079
475 X/O SUB	1	1.64	4.760			3 1/2 IF			VX475044
NMPC	1	13.95	4.688		2.688	3 1/2 IF			NESPC4754 036
5" PHX FBH MUD MOTOR 6/7 LOBE. STAGE 6.4. SET @ 1.75°	1	25.91	5.020			3 1/2 IF			24XH-51303 0-PTS
BIT #6 RUN #1 6.125" BAKER TD405FX (5X16'S) SN: 5271645	1	0.94	6.125	6.125		3 1/2 REG			5271645

## Drillstring Details

Date/Time in		Date/Time out		BHA no.	BHA Length (ft)	Min. ID (in)	Purpose
08/09/2017 23:30				6	128.44		DRILL 6.125" PRODUCTION SECTION
MD (ft)	SW Up (kip)	SW Down (kip)	SW Rotn (kip)	Drag (kip)	Tq On Btm (ft-lbf)	Tq Off Btm (ft-lbf)	Footage (ft)
17,283.00	230.0	100.00	165.00	65.00	11,000.0	6,000.0	413.00
17,304.00	230.0	100.00	0.00	230.00	0.0	0.0	21.00
17,362.00	230.0	100.00	165.00	65.00	11,000.0	7,000.0	58.00
17,820.00	190.0	140.00	166.00	24.00	13,000.0	7,000.0	458.00
17,840.00	190.0	100.00	0.00	190.00	0.0	0.0	20.00
18,000.00	190.0	140.00	166.00	24.00	13,000.0	7,000.0	160.00
18,040.00	190.0	100.00	0.00	190.00	0.0	0.0	40.00
18,180.00	190.0	140.00	166.00	24.00	13,000.0	7,000.0	140.00
18,250.00	190.0	140.00	0.00	190.00	0.0	0.0	70.00
18,360.00	190.0	140.00	166.00	24.00	13,000.0	7,000.0	110.00
18,388.00	190.0	140.00	0.00	190.00	0.0	0.0	28.00
18,450.00	240.0	120.00	166.00	74.00	14,000.0	10,000.0	62.00
18,474.00	200.0	110.00	0.00	200.00	0.0	0.0	24.00
18,582.00	240.0	120.00	166.00	74.00	14,000.0	10,000.0	108.00

## Remarks

DIESEL ON LOCATION: 11755 GAL  
DIESEL DELIVERED: 0 GAL  
DIESEL USED: 3759 GAL  
LNG USED: 1,120.09 GAL