

**EP WELLS DAILY OPERATIONS REPORT**

Report 53

08/28/2017

Company PERMIAN  
 Well Type Development  
 Well UNIVERSITY 19 PW UNIT 1504H  
 Wellbore UNIVERSITY 19 PW UNIT 1504H ST01  
 WBS No/API No 30265014 / 4230133171.01

**Event Summary**

Event Type	Completion only	Event Start Date	04/28/2017	Days on Location	52.00
Objective	Install Completion	Original Spud Date	02/02/2017		
Est. Days	25.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

**Well Status**

Supervisor	Mike Johnson	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	WW Horton	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,761.75 / 2,736.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	0/0	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	4,363,407/4,757,442.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.92	LOT/FIT EMW(ppg)	
Daily Cost	161,192	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>			TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)
Safety Comments:						

**HSE Drills**

Drills/Tests	Date	Days Since Last	JSA's/Toolbox Talks Days Since Last Drill
Last Derrick Inspection Last BOP function test Last BOP Test Next BOP Test			51

**Operations Summary**

24 Hour Summary
Perf Stg 33. Perf & Frac Stg 34, 35,
Update Since Report Time
24 Hour Forecast
Continue Frac Ops

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.67	FRAC	WLT			0		"Stage #33 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @10811. Bring on pumps at 11600'. Pump down as follows: 3bpm @ 3900psi @11600 6bpm @ 4200psi @11700 11.5bpm @ 4900psi @11800 11.5bpm w/ 6100psi  Set plug @ 14804ft Perforate as follows: 14780' - 14781' 14735' - 14736' 14691' - 14692' 14646' - 14647' Stabilized pressure after perf: 4600psi Pump down volume: 13bbl"
0:40	0.75	FRAC	WLT			0		POOH
1:25	0.83	FRAC	OPO			0		Wait at 200' for frac to finish.
2:15	0.25	FRAC	WLT			0		Bump up and SIW @ 3700 psi. Bled off pressure and break lubricator/BOP's. Lowered Perf guns out of lubricator and confirmed all shots fired. Drop ball, N/U nightcap and close crown valve. L/D perf guns and P/U next set of guns for next run. Greased UVM and LMV valve - grease time 10 min. HO to Frac
2:30	0.33	FRAC	WLT			0		Other Pad Ops
2:50	0.12	FRAC	FRP			0		Prime up and equalize. Open well @ 3504 psi.
2:57	1.58	FRAC	FRT			0		Stage 33 Summary University 19 PW Unit 1504H Interval 14646 - 14781 Open Well Pressure 3,505 psi Max Treating Pressure 9,343 psi Max Slurry Rate 61.4 bpm Average Treating Pressure 8,778 psi Average Slurry Rate 56.2 bpm Breakdown Pressure 7,038 psi Breakdown Rate 10.5 bpm Breakdown Volume 15,582 gal Avg HHP 12,091 hp Final ISIP 5,481 psi Frac Gradient 0.907 psi/ft Pad Volume 15,960 gal Main Body Volume 165,690 gal Flush Volume 25,704 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,200 lbs Proppant in Formation 420,200 lbs Avg Proppant Concentration 3.59 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,016 bbls Load to Recover w/o Acid 4,004 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 3,853 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 71 bbls pump down rate 11.5 bpm Max pump down pressure 6,100 psi Fluid Temp 72.0 ?F Total Pump Time 1:33 hr:min Pumps Lost During Job 0 Treatment Start Time 2:59 0:00 0:00 Treatment End Time 4:32 0:00 1:33 Diverter Slurry bbls

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Proppant pumped as a ramp from 0.5-4.0PPA, then a 4.0PPA hold. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps run prior to flush.
4:32	0.40	FRAC	FWL			0		Wait on other pad operations
4:56	0.17	FRAC	WLT			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4200 psi. RIH to 200' conduct checks.
5:06	0.90	FRAC	WLT			0		"Stage #34 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @10881. Bring on pumps at 11600'. Pump down as follows: 3bpm @ 3900psi @11600 6bpm @ 4300psi @11700 11.5bpm @ 4900psi @11800 11.5bpm w/ 6400psi  Set plug @ 14606 ft Perforate as follows: 14602' - 14603' 14557' - 14558' 14513' - 14514' 14468' - 14469' Stabilized pressure after perf: 4838psi Pump down volume: 69 bbls
6:00	1.00	FRAC	WLT			0		POOH with WL  0630 - Held Pre-Tower Safety Meeting. Covered focus areas - SSE, Barrier Ownership, Hands Free and DROPS. After pre-tower crews held respective TBT for their areas. Then conducted their handovers wait on completion of frac on adjacent well come off well and drop ball
7:00	0.50	FRAC	WLT			0		WAIT ON ADJ. WELL OPER.
7:30	1.58	FRAC	WLT			0		Stage 34 Summary University 19 PW Unit 1504H Interval 14468 - 14603 Open Well Pressure 3,665 psi Max Treating Pressure 9,037 psi Max Slurry Rate 61.5 bpm Average Treating Pressure 8,444 psi Average Slurry Rate 57.4 bpm Breakdown Pressure 6,715 psi Breakdown Rate 9.4 bpm Breakdown Volume 15,792 gal Avg HHP 11,880 hp Final ISIP 5,572 psi Frac Gradient 0.915 psi/ft Pad Volume 16,212 gal Main Body Volume 168,168 gal Flush Volume 25,578 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,120 lbs Proppant in Formation 420,120 lbs Avg Proppant Concentration 3.48 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,073 bbls Load to Recover w/o Acid 4,061 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 3,912 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 69 bbls pump down rate 11.5 bpm

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Max pump down pressure 6,400 psi Fluid Temp 72.0 ?F Total Pump Time 1:33 hr:min Pumps Lost During Job 0 Treatment Start Time 7:33 0:00 0:00 Treatment End Time 9:06 0:00 1:33 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-4.0PPA, then a 4.0PPA hold. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps run prior to flush.
9:05	0.25	FRAC	WLT			0		WAIT ON ADJ. WELL OPER.
9:20	0.33	FRAC	WLT			0		Handover from frac to WL. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. PT lubricator to 8000psi Open well with 4500psi.
9:40	1.00	FRAC	WLT			0		"Stage #35 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @10881. Bring on pumps at 11350'. Pump down as follows: 3bpm @ 4000psi @11350 6bpm @ 4300psi @11430 10bpm @ 5300psi @11500 bpm @ psi @ bpm @ psi @ 10bpm w/ 6303psi @  Set plug @ 14448ft Perforate as follows: 14424' - 14425' 14379' - 14380' 14335' - 14336' 14290' - 14291' Stabilized pressure after perf: 4515psi Pump down volume: 69bbl"
10:40	1.08	FRAC	WLT			0		POOH Shut in well with 3975psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
11:45	4.25	FRAC	WLT			0		CHANGE FLOW TUBES AND REHEAD , MAINTENANCE ON PUMP TRUCKS AND BLENDER
16:00	0.42	FRAC	WLT			0		WAIT ON ADJ. OPER.
16:25	0.68	FRAC	FRT			0		PRIME UP, PRESSURE TEST LINES TO 9800 PSI. BLEED OFF TO 4800 PSI. OPEN WELL AT 3420 PSI. FRAC STAGE 35 Stage 35 Summary University 19 PW Unit 1504H Interval 14290 - 14425 Open Well Pressure 3,420 psi Max Treating Pressure 9,290 psi Max Slurry Rate 59.0 bpm Average Treating Pressure 8,739 psi Average Slurry Rate 51.6 bpm Breakdown Pressure 6,950 psi Breakdown Rate 9.7 bpm Breakdown Volume 14,952 gal Avg HHP 11,052 hp Final ISIP 5,645 psi Frac Gradient 0.921 psi/ft Pad Volume 16,548 gal Main Body Volume 220,626 gal Flush Volume 45,528 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 419,480 lbs

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Proppant in Formation 419,480 lbs Avg Proppant Concentration 2.77 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 5,322 bbls Load to Recover w/o Acid 5,310 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 5,161 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 69 bbls pump down rate 10.0 bpm Max pump down pressure 6,303 psi Fluid Temp 72.0 ?F Total Pump Time 2:09 hr:min Pumps Lost During Job 0 Treatment Start Time 16:24 17:30 0:00 Treatment End Time 17:06 18:57 2:09 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-4.0PPA, then 3.0 PPA, 3.5 PPA and 4.0 PPA steps. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps run prior to flush. -We shut down for 24 minutes due to lightning. -A mixture of white and AZ brown sand were run.
17:06	4.90	FRAC	FWL			0		Shut in well on LM. Grease UM. Shut in UM and open LM. See pressure on zipper manifold. Pressure slowly climbing to well pressure. Notify field supt and engineer. Wait on frac to complete 2503.
22:00	2.00	FRAC	FWL			0		***** Begin NPT on Oil States (WOE) ***** UM valve will not hold pressure. Replace valve. Cycle and shut in well w/ LM Cameron valve. Bleed off all pressure on tree. Shut in tree and have frac monitor for pressure build up. LM valve holding. No pressure build up observed.
<b>Total</b>	<b>24.00</b>							

NPT Summary

Start Date/Time	Responsible Company	NPT Code	Failure MD (ft)	Ops Code	Type*	Equipment Type	Net time (hr)	Gross time (hr)	Severity	Status
08/28/2017 22:00	OIL STATES ENERGY SERVICES LLC	Wellhead (Surface)		FWL	EN	Wellhead Surface	0.00	0.00		OPEN
<b>Description:</b> UM valve will not hold pressure.						<b>Title:</b> WOE				
<b>Total</b>							<b>0.00</b>	<b>0.00</b>		