

**EP WELLS DAILY OPERATIONS REPORT**

Report 14

11/17/2017

Company PERMIAN  
 Well Type Development  
 Well UNIVERSITY 19 PW UNIT 1404H  
 Wellbore UNIVERSITY 19 PW UNIT 1404H  
 WBS No/API No 30266568 / 4230133215.00

**Event Summary**

Event Type	Completion only	Event Start Date	10/31/2017	Days on Location	14.00
Objective	Install Completion	Original Spud Date	06/17/2017		
Est. Days	65.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

**Well Status**

Supervisor	John Bevans	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	WW Horton	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,800.10 / 2,772.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	3.62/15.07	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	1,934,185/5,029,301.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.38	LOT/FIT EMW(ppg)	
Daily Cost	285,031	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:  
 18 JSA's  
 10 safework permits  
 72 EE's

**HSE Drills**

Drills/Tests	Date	Days Since Last	JSA's/Toolbox Talks	Days Since Last Drill
Last Derrick Inspection			18	
Last BOP function test			13	
Last BOP Test				
Next BOP Test				

**Operations Summary**

24 Hour Summary  
 frac stge 20,21,22 and 23  
 Update Since Report Time  
 4 stages perf'd and frac'd  
 24 Hour Forecast  
 continue perf and frac operations.

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	5.50	FRAC	WLT			0		Wait on adjacent well operations.
5:30	0.83	FRAC	WLT			0		Prime and pressure test frac. Test failed due leaking end cap.
6:20	2.28	FRAC	WLF			1		Have to wait on WLine to pooh & LD lubricator off of the 1403H well. due to safety facture of Line of Fire. & change out seals in 4" end cap. Prime and pressure test frac.
8:37	1.67	FRAC	FRT			0		Stage 21 Summary University 19 PW Unit 1404H Interval 17239 - 17375 Open Well Pressure 3,905 psi Max Treating Pressure 9,182 psi Max Slurry Rate 55.5 bpm Average Treating Pressure 8,378 psi Average Slurry Rate 46.0 bpm Breakdown Pressure 8,690 psi Breakdown Rate 9.8 bpm Breakdown Volume 336 gal Avg HHP 9,446 hp Final ISIP 5,015 psi Frac Gradient 0.864 psi/ft Pad Volume 756 gal Main Body Volume 166,236 gal Flush Volume 27,510 gal 100 MAZ Sand Pumped 96,500 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 323,700 lbs Proppant in Formation 420,200 lbs Avg Proppant Concentration 2.63 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,067 bbls Load to Recover w/o Acid 4,067 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,878 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 109 bbls pump down rate 9.0 bpm Max pump down pressure 5,600 psi Fluid Temp 72.0 ?F Total Pump Time 1:43 hr:min Pumps Lost During Job 0 Treatment Start Time 8:35 0:00 0:00 Treatment End Time 10:18 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then a 3.0 PPA, 3.5 PPA step and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug.  Time for Prop on Perfs 17.0 minutes Time between Stages (TBF) 4:15 Hours/min
10:17	0.08	FRAC	FWL			0		Shut in well w/ 4890 psi. Handover from Frac to WL. Wait on other pad ops.
10:22	0.18	FRAC	FWL			0		Remove night cap. PU tools. Stab lubricator. Fill lubricator.
10:33	0.08	FRAC	FWL			0		Pressure test lubricator to 8000 psi. Good test
10:38	0.90	FRAC	WLT			0		WL Start perf University 1404H Stage 22 Tie into liner top at 10966 ft Initial WHP 4750 psi  Pumpdown Pressures 3bpm 4600 6bpm 4700 psi 9bpm 5000 psi

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								9bpm 5300 psi 9bpm psi  Max Pressure 5500 psi Total Fluid to recover 105 bbls  Plug set @ 17219 Plus 5' Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 2028 lbs Post-set Tension 1711 lbs  Pre-Perf Pressure 4900 psi  Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing  17194' - 17195' 6 shots 17149' - 17150' 6 shots 17104' - 17105' 6 shots 17059' - 17060' 6 shots  Post-Perf Pressure 4900 psi WL POOH 11:32
11:32	0.92	FRAC	WLT			0		POOH with Wireline.
12:27	0.13	FRAC	WLT			0		Bump up. Grease CRN valve. Shut in well with 4300 psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves.
12:35	0.40	FRAC	WLF			0		Handover from WL to frac. Wait on other pad ops.
12:59	0.22	FRAC	WLF			0		Prime and pressure test frac.
13:12	1.48	FRAC	FRT			0		Stage 22 Summary University 19 PW Unit 1404H Interval 17059 - 17195 Open Well Pressure 4,385 psi Max Treating Pressure 9,220 psi Max Slurry Rate 60.4 bpm Average Treating Pressure 8,377 psi Average Slurry Rate 50.7 bpm Breakdown Pressure 8,156 psi Breakdown Rate 11.9 bpm Breakdown Volume 420 gal Avg HHP 10,410 hp Final ISIP 5,340 psi Frac Gradient 0.892 psi/ft Pad Volume 714 gal Main Body Volume 162,624 gal Flush Volume 27,510 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 97,220 lbs 100 M Sand Pumped 322,840 lbs Proppant in Formation 420,060 lbs Avg Proppant Concentration 3.27 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,977 bbls Load to Recover w/o Acid 3,977 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,792 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 105 bbls pump down rate 9.0 bpm Max pump down pressure 5,500 psi Fluid Temp 72.0 ?F Total Pump Time 1:30 hr:min

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Pumps Lost During Job 0 Treatment Start Time 13:12 0:00 0:00 Treatment End Time 14:42 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then a 3.0 PPA, 3.5 PPA step and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug.  Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 0:47 Hours/min
14:41	0.30	FRAC	FWL			0		Shut in well w/ 5073 psi. Handover from Frac to WL. Wait on other pad ops.
14:59	0.20	FRAC	FWL			0		Remove night cap. PU tools. Stab lubricator. Fill lubricator.
15:11	0.07	FRAC	FWL			0		Pressure test lubricator to 8000 psi. Good test
15:15	0.50	FRAC	WLT			0		Begin pump down , Pump truck stopped pumping, PU to Vertical w/ Wireline
15:45	1.33	FRAC	WLT			1		Wait till frac finishing frac stage to pump down plug & perf run while , pump truck for pump down is repair
17:05	1.92	FRAC	WLT			0		1720 "Stage #23 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Boss Hog composite ball-drop frac plug. Tie into liner top @11061'. Pump down as follows: 3bpm @ 4500psi11600 6bpm @ 4700psi11700 9bpm @ 5000psi11800 bpm @ psi bpm @ psi 9bpm @ 5350psi  Set plug @ 17039ft Perforate as follows: 17014' - 17015' 16969' - 16970' 16924' - 16925' 16879' - 16880' Stabilized pressure after perf: 4980psi Pump down volume: 84bbl" 2114 POOH 0 Shut in well with 4500psi. Bleed off. 16 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 20 Handover from WL to frac.
19:00	2.58	FRAC	WLT			0		Prime up pumps, pressure test lines open well 4580 psi. frac stage 23 Stage 23 Summary University 19 PW Unit 1404H Interval 16879 - 17015 Open Well Pressure 4,380 psi Max Treating Pressure 9,259 psi Max Slurry Rate 61.8 bpm Average Treating Pressure 8,462 psi Average Slurry Rate 53.4 bpm Breakdown Pressure 7,648 psi Breakdown Rate 8.0 bpm Breakdown Volume 252 gal Avg HHP 11,075 hp Final ISIP 5,103 psi Frac Gradient 0.871 psi/ft Pad Volume 1,680 gal Main Body Volume 174,174 gal Flush Volume 27,300 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 112,780 lbs 100 M Sand Pumped 310,120 lbs

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Proppant in Formation 422,900 lbs Avg Proppant Concentration 2.98 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,231 bbls Load to Recover w/o Acid 4,231 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 4,067 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 84 bbls pump down rate 9.0 bpm Max pump down pressure 5,450 psi Fluid Temp 72.0 ?F Total Pump Time 1:31 hr:min Pumps Lost During Job 0 Treatment Start Time 20:04 0:00 0:00 Treatment End Time 21:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then a 3.0 PPA, 3.5 PPA step and a 4.0 PPA step. - Ran two 40 bbl shots of gel with a 20 bbl spacer. - Ran NO 15% HCl this stage - This stage utilized a ball in seat plug. -While staging to 4.0 PPA operator error caused proppant to be cut, the error was corrected and we started proppant at 2.0 PPA, then 2.5 PPA, 3.0 PPA, 3.5 PPA, and 4.0 PPA steps -No pump down charge applied since frac pumped down wireline due to pump down pump being repaired  Time for Prop on Perfs 20.0 minutes Time between Stages (TBF) 3:16 Hours/min
21:35	2.42	FRAC	WLT			0		Run in hole to Perf stage 24 pumpiong down at report end.
<b>Total</b>	<b>24.00</b>							

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	1.75	FRAC	FRT			0	Perf stage 24 as follows. 22:00 Handover from frac to WL. 2300 Pick up lubricator. Remove night cap. PU tools. 2310 Stab lubricator. Fill lubricator. 2315 PT lubricator to 8000psi 2320 Open well with 4500psi. 1720 "Stage #24 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Boss Hog composite ball-drop frac plug. Tie into liner top @10996'. Pump down as follows: 3bpm @ 4374psi11600 6bpm @ 4730psi11700 10bpm @ 5185psi11800 bpm @ psi bpm @ psi 10bpm @ 6037psi  Set plug @ 16859ft Perforate as follows: 16834' - 16835' 16789' - 16790' 16744' - 16745' 16699' - 16700' Stabilized pressure after perf: 4815psi Pump down volume: 95bbl" 2114 POOH 0 Shut in well with 4450psi. Bleed off.

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							16 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. 20 Handover from WL to frac.
1:45		FRAC	FRT			0	Frac stage 24

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
11/17/2017 06:20	OIL STATES ENERGY SERVICES LLC	Stimulation		WLF	EN	Frac Wellhead	2.28	2.28	1	OPEN
<b>Description:</b> Leaking end cap on Oil States Goat head						<b>Title:</b> Leaking end cap				
11/17/2017 15:45	KEANE FRAC TX LLC	Perforation		WLT	EN	Frac Pump	1.33	1.33	1	OPEN
<b>Description:</b> Pump down truck for Wireline pump quit pumping						<b>Title:</b> Pump down truck failure				
<b>Total</b>							<b>3.62</b>	<b>3.62</b>		