

**EP WELLS DAILY OPERATIONS REPORT**

Report 56

08/31/2017

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	55.00
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	Tony Steel	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	Tina Grega	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/%)	4.58/19.10	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	5,344,094/4,757,442.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	1.12	LOT/FIT EMW(ppg)	
Daily Cost	387,575	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:						
Man hours 1186						

**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			54

**Operations Summary**

<b>24 Hour Summary</b>
Frac stage 44, Perf and frac stages 45,46,47,48
Update Since Report Time
<b>24 Hour Forecast</b>
Rig out frac crew

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.07	FRAC	WLT			0		POOH
0:04	0.35	FRAC	WLF			0		.Shut in well with 4144 psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools. Secure crown and wing valves. Handover from WL to frac
0:25	1.65	FRAC	FRT			0		Stage 44 Summary University 19 PW Unit 1504H Interval 12688 - 12823 Open Well Pressure 4,014 psi Max Treating Pressure 9,253 psi Max Slurry Rate 60.6 bpm Average Treating Pressure 8,773 psi Average Slurry Rate 56.5 bpm Breakdown Pressure 6,938 psi Breakdown Rate 10.3 bpm Breakdown Volume 13,524 gal Avg HHP 12,149 hp Final ISIP 5,602 psi Frac Gradient 0.918 psi/ft Pad Volume 15,456 gal Main Body Volume 177,114 gal Flush Volume 24,444 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 418,580 lbs Proppant in Formation 418,580 lbs Avg Proppant Concentration 3.22 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,245 bbls Load to Recover w/o Acid 4,233 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,125 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 28 bbls pump down rate 11.5 bpm Max pump down pressure 5,216 psi Fluid Temp 72.0 ?F Total Pump Time 1:39 hr:min Pumps Lost During Job 1 Treatment Start Time 0:25 0:00 0:00 Treatment End Time 2:04 0:00 1:39 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-3.0PPA, then 0.5PPA steps from 3.0- 4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush.
2:04	0.30	FRAC	FWL			0		Handover from frac to WL. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. PT lubricator to 8000 psi Open well with 4800 psi.
2:22	1.88	FRAC	WLT			0		Stage #45 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 11500'. Pump down as follows: 3 bpm @ 4400psi @11600 6 bpm @ 4500psi @11700 11.5 bpm @ 5700 psi @11800  11.5 bpm w/ 5700 psi  Set plug @ 12,668' ft Perforate as follows: 12,644' - 12,645' 12,599' - 12,600'

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								12,555' - 12,556' 12,510' - 12,511' Stabilized pressure after perf: 4490 psi Pump down volume: 25 bbls
4:15	0.25	FRAC	FRT			0		Shut in well with 4504 psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools. Secure crown and wing valves. Handover from WL to frac
4:30	0.02	FRAC	FRT			1		****NPT KEANE WIRELINE**** Wireline truck will not regen . Wait on mechanic.
4:31	0.57	FRAC	FRT			2		****NPT KEANE FRAC**** Shut down frac at 699 bbls into stage #45. High pressure leak on missile between lateral and 4 foot stock. Rubber insert was replaced , pressure tested and continue with stage. **** END NPT****
5:05	2.25	FRAC	FRT			1		Stage 45 Summary University 19 PW Unit 1504H Interval 12510 - 12645 Open Well Pressure 4,317 psi Max Treating Pressure 9,372 psi Max Slurry Rate 61.8 bpm Average Treating Pressure 8,616 psi Average Slurry Rate 57.4 bpm Breakdown Pressure 6,930 psi Breakdown Rate 10.5 bpm Breakdown Volume 13,566 gal Avg HHP 12,122 hp Final ISIP 5,530 psi Frac Gradient 0.911 psi/ft Pad Volume 26,460 gal Main Body Volume 223,230 gal Flush Volume 24,276 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 419,940 lbs Proppant in Formation 419,940 lbs Avg Proppant Concentration 2.93 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 5,340 bbls Load to Recover w/o Acid 5,328 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 5,223 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 25 bbls pump down rate 11.5 bpm Max pump down pressure 5,862 psi Fluid Temp 72.0 ?F Total Pump Time 2:01 hr:min Pumps Lost During Job 0 Treatment Start Time 4:11 5:49 0:00 Treatment End Time 4:42 7:19 2:01 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-2.5PPA, then 0.5PPA steps from 2.5-4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush. -At the start of the sand ramp, a small drip was noticed on a lateral on the missile. The leak was repaired and the stage was resumed.
7:20	1.75	FRAC	FWL			1		**** NPT KEANE WIRELINE **** WIRELINE TRUCK RE-GEN
9:05	1.30	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi Open well with 4600 psi. RIH. NOTE: AT 250' CHECKED COMPUTER AND WARRIOR SYSTEM COULD NOT GET IT TO WORK, TROUBLE SHOOT AND REPAIR , RIH TO LINER TOP

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Wellbore UNIVERSITY 19 PW UNIT 1504H ST01

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
10:23	0.82	FRAC	WLT			0		"Stage #46 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 11500'. Pump down as follows: 3 bpm @ 4500 psi 6 bpm @ 4700 psi11550 9 bpm @ 5000 psi11600 Max:9 bpm. Max: 5716 psi12514  Set plug @ 12490 ft Perforate as follows: 12466' - 12467' 12420' - 12421' 12380' - 12381' ' - 1' Stabilized pressure after perforating: 4400 psi Pump down volume: 19 bbl" POOH
11:12	0.23	FRAC	WLF			0		Shut in well with 4500 psi. 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.
11:26	2.07	FRAC	FRT			0		Stage 46 Summary University 19 PW Unit 1504H Interval 12332 - 12467 Open Well Pressure 4,382 psi Max Treating Pressure 9,438 psi Max Slurry Rate 60.3 bpm Average Treating Pressure 8,747 psi Average Slurry Rate 50.8 bpm Breakdown Pressure 7,187 psi Breakdown Rate 9.3 bpm Breakdown Volume 13,188 gal Avg HHP 10,891 hp Final ISIP 5,448 psi Frac Gradient 0.904 psi/ft Pad Volume 14,322 gal Main Body Volume 180,600 gal Flush Volume 25,746 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 419,900 lbs Proppant in Formation 419,900 lbs Avg Proppant Concentration 3.15 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,319 bbls Load to Recover w/o Acid 4,307 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,208 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 19 bbls pump down rate 10.0 bpm Max pump down pressure 6,949 psi Fluid Temp 72.0 ?F Total Pump Time 1:49 hr:min Pumps Lost During Job 0 Treatment Start Time 11:38 0:00 0:00 Treatment End Time 13:27 0:00 1:49 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-2.5PPA, then 0.5PPA steps from 2.5-4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush.
13:30	0.22	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
13:43	1.77	FRAC	WLT			0		Open well with 4800 psi. RIH. "Stage #47 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 11500'. Pump down as follows: 3 bpm @ 4500 psi 6 bpm @ 4700 psi11550 10 bpm @ 5000 psi11600 Max:10 bpm. Max: 5543 psi12353  Set plug @ 12312 ft Perforate as follows: 12288' - 12289' 12243' - 12244' 12199' - 12200' ' - 1' Stabilized pressure after perforating: 4430 psi Pump down volume: 15 bbl" POOH  NOTE: GUNS GOT STUCK DIRECTLY BELOW BOTTOM MASTER, -4' ON DEPTH, WORK GUNS FREE AND SECURE WELL. CONTACT ENGINEER AND NOTIFY FIELD SUPTS. DECISION MADE TO CONDUCT NEGATIVE TEST ON BOTTOM MASTER
15:29	0.15	FRAC	WLF			0		Shut in well with 4500 psi. 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.
15:38	0.45	FRAC	FRT			0		FINISH INSTALLING PUMP INTO FRAC LINE, PRESSURE TEST SURFACE LINES
16:05	1.75	FRAC	FRT			0		Stage 47 Summary University 19 PW Unit 1504H Interval 12154 - 12289 Open Well Pressure 4,328 psi Max Treating Pressure 9,049 psi Max Slurry Rate 59.9 bpm Average Treating Pressure 8,430 psi Average Slurry Rate 56.1 bpm Breakdown Pressure 7,960 psi Breakdown Rate 9.4 bpm Breakdown Volume 13,230 gal Avg HHP 11,591 hp Final ISIP 5,336 psi Frac Gradient 0.895 psi/ft Pad Volume 18,732 gal Main Body Volume 180,726 gal Flush Volume 24,276 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 424,880 lbs Proppant in Formation 424,880 lbs Avg Proppant Concentration 3.24 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,318 bbls Load to Recover w/o Acid 4,306 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,211 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 15 bbls pump down rate 10.0 bpm Max pump down pressure 5,543 psi Fluid Temp 72.0 ?F Total Pump Time 1:45 hr:min Pumps Lost During Job 0 Treatment Start Time 16:05 0:00 0:00 Treatment End Time 17:50 0:00 1:45

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Diverter Slurry bbls Proppant pumped as a ramp from 0.50 -3.00 PPA, then 0.5PPA steps from 3.00-4.00 PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush.
17:50	0.33	PREW	RUF			0		SECURE BOTTOM MASTER, BLEED OFF PRESSURE, CLOSE IN AND CONDUCT NEGATIVE TEST ON BOTTOM MASTER. HELP FOR 10 MINUTES NO PRESSURE GAIN SEEN ON DIGITAL GAUGE EQUALIZE WELL PRESSURE AND OPEN BOTTOM MASTER, CLOSE MIDDLE MASTER LINE UP TO HAND OVER TO WIRELINE
18:10	0.32	FRAC	WLT			0		HANDOVER TO WL
18:29	0.08	FRAC	WLT			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi Open well with 4700 psi. RIH.
18:34	1.68	FRAC	WLT			0		"Stage #48 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 11500'. Pump down as follows: 3 bpm @ 4500 psi 6 bpm @ 4700 psi 11550 10 bpm @ 5500 psi 11600 Max:10 bpm. Max: 5700 psi  Set plug @ 12134 ft Perforate as follows: 12110' - 12111' 12065' - 12066' 12021' - 12022' 11976' - 11977' Stabilized pressure after perforating: 4503 psi Pump down volume: 14 bbl" POOH
20:15	2.28	FRAC	FRT			0		Stage 48 Summary University 19 PW Unit 1504H Interval 11976 - 12111 Open Well Pressure 4,431 psi Max Treating Pressure 9,257 psi Max Slurry Rate 61.6 bpm Average Treating Pressure 8,695 psi Average Slurry Rate 57.6 bpm Breakdown Pressure 7,082 psi Breakdown Rate 10.8 bpm Breakdown Volume 14,112 gal Avg HHP 12,275 hp Final ISIP 5,561 psi Frac Gradient 0.914 psi/ft Pad Volume 13,524 gal Main Body Volume 174,384 gal Flush Volume 24,822 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 434,580 lbs Proppant in Formation 434,580 lbs Avg Proppant Concentration 3.30 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,166 bbls Load to Recover w/o Acid 4,154 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,140 bbls 20# Linear Fluid Pumped 0 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 14 bbls

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**Time Summary**

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								pump down rate 10.0 bpm Max pump down pressure 5,282 psi Fluid Temp 72.0 ?F Total Pump Time 2:00 hr:min Pumps Lost During Job 0 Treatment Start Time 20:32 0:00 0:00 Treatment End Time 22:32 0:00 2:00 Diverter Slurry bbls Proppant pumped as a ramp from 0.50 -3.00 PPA, then 0.5PPA steps from 3.00-4.00 PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced.
22:32	0.47	FRAC	ROF			0		Shut in both master valves and secure well. Commence Rig out safety meeting with all personel .
23:00	1.00	FRAC	ROF			0		Begin to Rig out frac crew and support equipment.
<b>Total</b>	<b>24.00</b>							

**06.00 Update**

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	6.00	FRAC	ROF			0	Begin to Rig out frac crew and support equipment.

**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
08/31/2017 04:30	KEANE FRAC LP	Wait On Equipment		FRT	EN	Elect W/L Surface Equipment	4.02	4.58	1	OPEN
<b>Description:</b> WL TRUCK NEEDS TO REGEN. WAITING						<b>Title:</b> WOE				
08/31/2017 04:31	KEANE FRAC LP	Stimulation		FRT	EN	Stimulation Surface Equipment	0.57	0.57	1	OPEN
<b>Description:</b> Shut down frac at 699 bbls into stage #45. High pressure leak on missile between lateral and 4 foot stock. Rubber insert was replaced , pressure tested and continue with stage.						<b>Title:</b> LEAKS				
<b>Total</b>							<b>4.58</b>	<b>5.15</b>		