

EP WELLS DAILY OPERATIONS REPORT

Report 17

11/20/2017

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	17.00
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	Mike Johnson	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/%)	10.47/43.61	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	2,669,490/5,029,301.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.53	LOT/FIT EMW(ppg)	
Daily Cost	225,200	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 GOAL ZERO DAYS PS BARRIER EVENT PS barrier bowtie review			TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)	
Safety Comments:							
14 JSA's							
10 safework permits							
72 EE's							

HSE Drills

Drills/Tests	Date	Days Since Last		
Last Derrick Inspection			JSA's/Toolbox Talks	14
Last BOP function test			Days Since Last Drill	16
Last BOP Test				
Next BOP Test				

Operations Summary

24 Hour Summary
Frac 31,32& 33
Update Since Report Time
33 fracs complete
24 Hour Forecast
conyinue 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	1.67	FRAC	FRT			0		<p>Frac stage 31</p> <p>Stage 31 Summary University 19 PW Unit 1404H</p> <p>Interval 15439 - 15575</p> <p>Open Well Pressure 4,290 psi</p> <p>Max Treating Pressure 9,266 psi</p> <p>Max Slurry Rate 60.8 bpm</p> <p>Average Treating Pressure 8,602 psi</p> <p>Average Slurry Rate 51.8 bpm</p> <p>Breakdown Pressure 6,302 psi</p> <p>Breakdown Rate 6.2 bpm</p> <p>Breakdown Volume 252 gal</p> <p>Avg HHP 10,921 hp</p> <p>Final ISIP 5,119 psi</p> <p>Frac Gradient 0.873 psi/ft</p> <p>Pad Volume 840 gal</p> <p>Main Body Volume 158,634 gal</p> <p>Flush Volume 26,376 gal</p> <p>100 M AZ Sand Pumped 0 lbs</p> <p>100 M Brown Sand Pumped 139,620 lbs</p> <p>100 M Sand Pumped 283,320 lbs</p> <p>Proppant in Formation 422,940 lbs</p> <p>Avg Proppant Concentration 3.37 lb/gal</p> <p>Max Proppant Concentration 4.00 lb/gal</p> <p>Load to Recover (incl. pumpdown) 3,859 bbls</p> <p>Load to Recover w/o Acid 3,859 bbls</p> <p>15% HCL Spearhead 0 gal</p> <p>Slickwater Fluid Pumped 3,697 bbls</p> <p>20# Linear Fluid Pumped 80 bbls</p> <p>20# Crosslink Fluid Pumped 0 bbls</p> <p>Pump down volume 82 bbls</p> <p>pump down rate 10.0 bpm</p> <p>Max pump down pressure 6,319 psi</p> <p>Fluid Temp 72.0 ?F</p> <p>Total Pump Time 1:24 hr:min</p> <p>Pumps Lost During Job 0</p> <p>Treatment Start Time 0:11 0:00 0:00</p> <p>Treatment End Time 1:35 0:00 0:00</p> <p>Diverter Slurry bbls</p> <p>-Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a 3.0 PPA, 3.5 PPA, and a 4.0 PPA step.</p> <p>- Ran two 40 bbl shots of gel with a 20 bbl spacer.</p> <p>- Ran NO 15% HCl this stage</p> <p>- This stage utilized a ball in seat plug.</p> <p>Time for Prop on Perfs 16.0 minutes</p> <p>Time between Stages (TBF) 1:03 Hours/min</p> <p>Stage 31 Summary University 19 PW Unit 1404H</p> <p>Interval 15439 - 15575</p> <p>Open Well Pressure 4,290 psi</p> <p>Max Treating Pressure 9,266 psi</p> <p>Max Slurry Rate 60.8 bpm</p> <p>Average Treating Pressure 8,602 psi</p> <p>Average Slurry Rate 51.8 bpm</p> <p>Breakdown Pressure 6,302 psi</p> <p>Breakdown Rate 6.2 bpm</p> <p>Breakdown Volume 252 gal</p> <p>Avg HHP 10,921 hp</p> <p>Final ISIP 5,119 psi</p> <p>Frac Gradient 0.873 psi/ft</p> <p>Pad Volume 840 gal</p> <p>Main Body Volume 158,634 gal</p> <p>Flush Volume 26,376 gal</p> <p>100 M AZ Sand Pumped 0 lbs</p> <p>100 M Brown Sand Pumped 139,620 lbs</p>

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								100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 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, 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) 1:03 Hours/min Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575 Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,697 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 82 bbls pump down rate 10.0 bpm Max pump down pressure 6,319 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 0:11 0:00 0:00 Treatment End Time 1:35 0:00 0:00 Diverter Slurry bbls -Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA then a

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								<p>3.0 PPA, 3.5 PPA, and a 4.0 PPA step.</p> <p>- Ran two 40 bbl shots of gel with a 20 bbl spacer.</p> <p>- Ran NO 15% HCl this stage</p> <p>- This stage utilized a ball in seat plug.</p> <p>Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 1:03 Hours/min</p> <p>Stage 31 Summary University 19 PW Unit 1404H Interval 15439 - 15575</p> <p>Open Well Pressure 4,290 psi Max Treating Pressure 9,266 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 8,602 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 6,302 psi Breakdown Rate 6.2 bpm Breakdown Volume 252 gal Avg HHP 10,921 hp Final ISIP 5,119 psi Frac Gradient 0.873 psi/ft Pad Volume 840 gal Main Body Volume 158,634 gal Flush Volume 26,376 gal 100 M AZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 139,620 lbs 100 M Sand Pumped 283,320 lbs Proppant in Formation 422,940 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,859 bbls Load to Recover w/o Acid 3,859</p>
1:40	2.33	FRAC	WLT			0		<p>Perf stage 32</p> <p>1:50 Handover from frac to WL.</p> <p>2:00 Pick up lubricator. Remove night cap. PU tools.</p> <p>2:10 Stab lubricator. Fill lubricator.</p> <p>2:15 PT lubricator to 8000psi</p> <p>2:20 Open well with 4550psi.</p> <p>2:50 "Stage #32 Plug and Perf</p> <p>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 @10966'. Pump down as follows:</p> <p>3bpm @ 3923psi11600 6bpm @ 4234psi11700 9bpm @ 4733psi11800 10bpm @ 5147psi bpm @ psi 10bpm @ 5399psi</p> <p>Set plug @ 15419ft</p> <p>Perforate as follows:</p> <p>15394' - 15395' 15349' - 15350' 15304' - 15305' 15259' - 15260'</p> <p>Stabilized pressure after perf: 4264psi Pump down volume: 69bbl"</p> <p>2114 POOH</p> <p>0 Shut in well with 4500psi. Bleed off.</p> <p>16 Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves.</p> <p>20 Handover from WL to frac.</p>
4:00	2.32	FRAC	FRT			0		<p>prime up and equalize Frac stage 32</p> <p>05:30- 06:00 Safety meeting, go over jsa's and permits, discuss 12 LSR's, L&H, ERP's, good communication and LFI,UNCAAP(7steps) and expectations.</p>

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Break out into groups dicuss detailed station hazards. HO with with night shift. Stage 32 Summary University 19 PW Unit 1404H Interval 15259 - 15395 Open Well Pressure 4,479 psi Max Treating Pressure 9,220 psi Max Slurry Rate 61.1 bpm Average Treating Pressure 8,483 psi Average Slurry Rate 51.8 bpm Breakdown Pressure 7,399 psi Breakdown Rate 8.5 bpm Breakdown Volume 336 gal Avg HHP 10,770 hp Final ISIP 5,529 psi Frac Gradient 0.908 psi/ft Pad Volume 840 gal Main Body Volume 159,516 gal Flush Volume 26,292 gal 100 M AZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 419,360 lbs Proppant in Formation 419,360 lbs Avg Proppant Concentration 3.31 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,867 bbls Load to Recover w/o Acid 3,867 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,718 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 5,399 psi Fluid Temp 72.0 ?F Total Pump Time 1:24 hr:min Pumps Lost During Job 0 Treatment Start Time 4:56 0:00 0:00 Treatment End Time 6:20 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, 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 13.0 minutes Time between Stages (TBF) 1:08 Hours/min Shut in well w/ 5218 psi. Handover from Frac to WL. Wait on other pad ops.
6:19	1.68	FRAC	FWL			0		Waiting on other pad opps.
8:00	0.53	FRAC	FWL			0		Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi. Good test
8:32	2.17	FRAC	WLT			0		WL Start perf University 1404H Stage 33 Tie into liner top at 10966 ft Initial WHP 4600 psi Pumpdown Pressures 3bpm 4100 6bpm 4500 psi 9bpm 5000 psi 9bpm 6000 psi 9bpm psi Max Pressure 6100 psi Total Fluid to recover 67 bbls Plug set @ 15239

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Boss Hog Composite Frac Plug/ Ball in place plug Plug OD 3.65 in Pre-set Tension 1710 lbs Post-set Tension 1430 lbs Pre-Perf Pressure 5000 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 15214' - 15215' 6 shots 15169' - 15170' 6 shots 15124' - 15125' 6 shots 15079' - 15080' 6 shots Post-Perf Pressure 5014 psi WL POOH 9:22 Bump up. Grease UM/LM valve. Shut in well with 4600 psi. Bleed off. Break lubricator. All shots fired. MU night cap. Secure crown and wing valves. Handover from WL to frac. Wait on other pad ops.
10:42	1.38	FRAC	FRT			1		Prime & pressure test frac Stage 33 Summary University 19 PW Unit 1404H Interval 15079 - 15215 Open Well Pressure 4,440 psi Max Treating Pressure 9,292 psi Max Slurry Rate 61.4 bpm Average Treating Pressure 8,660 psi Average Slurry Rate 52.6 bpm Breakdown Pressure 8,736 psi Breakdown Rate 14.0 bpm Breakdown Volume 714 gal Avg HHP 11,165 hp Final ISIP 5,372 psi Frac Gradient 0.895 psi/ft Pad Volume 966 gal Main Body Volume 158,130 gal Flush Volume 26,208 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 83,500 lbs 100 M Sand Pumped 332,100 lbs Proppant in Formation 415,600 lbs Avg Proppant Concentration 3.37 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,832 bbls Load to Recover w/o Acid 3,832 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,685 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 67 bbls pump down rate 9.0 bpm Max pump down pressure 6,100 psi Fluid Temp 72.0 ?F Total Pump Time 1:23 hr:min Pumps Lost During Job 1 Treatment Start Time 10:42 0:00 0:00 Treatment End Time 12:05 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, 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. - lost pump q417 to communication issues

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Time for Prop on Perfs 16.0 minutes Time between Stages (TBF) 0:47 Hours/min Shut in well w/ 4670 psi. Handover from Frac to WL. Wait on other pad ops.
12:05	9.08	FRAC	FWL			1		Stab lubr. test to 8000 psi. unable to get tool to move down hole work tool , loose wght of tool, Hold pause meeting Lay down lubr. inspct tool string bart tool had parted. NPTWireline
21:10	2.83	FRAC	FWL			0		End NPT RIH to perf stage 34 0:00 Open well with 4300psi. 0:00 "Stage #34 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 @10966'. Pump down as follows: 3bpm @ 3737psi11600 6bpm @ 4338psi11700 9bpm @ 5328psi11800 10bpm @ psi bpm @ psi 9bpm @ 6590psi Set plug @ 15059ft Perforate as follows: 15031' - 15032' 14997' - 14998' 14960' - 14961' 14923' - 14924' Stabilized pressure after perf: 5052psi Pump down volume: 72bbl" 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.
Total	24.00							

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	1.58	FRAC	WLT			0	Frac stage 34 open well 4619 psi. Stage 34 Summary University 19 PW Unit 1404H Interval 14923 - 15035 Open Well Pressure 4,619 psi Max Treating Pressure 9,240 psi Max Slurry Rate 60.3 bpm Average Treating Pressure 8,108 psi Average Slurry Rate 55.3 bpm Breakdown Pressure 5,964 psi Breakdown Rate 7.0 bpm Breakdown Volume 252 gal Avg HHP 10,990 hp Final ISIP 5,281 psi Frac Gradient 0.887 psi/ft Pad Volume 1,680 gal Main Body Volume 154,896 gal Flush Volume 26,208 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 420,980 lbs Proppant in Formation 420,980 lbs Avg Proppant Concentration 3.51 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 3,760 bbls

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							Load to Recover w/o Acid 3,760 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,608 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 72 bbls pump down rate 9.0 bpm Max pump down pressure 6,590 psi Fluid Temp 72.0 ?F Total Pump Time 1:17 hr:min Pumps Lost During Job 0 Treatment Start Time 0:14 0:00 0:00 Treatment End Time 1:31 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, 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 14.0 minutes Time between Stages (TBF) 0:59 Hours/min
1:35	2.50	FRAC	WLT			0	Perf. stage 35 opening press. 4900 psi. 3:45 Handover from frac to WL. 4:05 Pick up lubricator. Remove night cap. PU tools. 4:15 Stab lubricator. Fill lubricator. 4:20 PT lubricator to 8000psi 0:00 Open well with 4900psi. 0:00 "Stage #35 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 @10966'. Pump down as follows: 3bpm @ 4253psi11600 6bpm @ 4614psi11700 9bpm @ 5265psi11800 10bpm @ 5629psi bpm @ psi 10bpm @ 5565psi Set plug @ 14899ft Perforate as follows: 14878' - 14879' 14833' - 14834' 14788' - 14789' 14743' - 14744' Stabilized pressure after perf: 4748psi Pump down volume: 59bbl" 2114 POOH 0 Shut in well with 4650psi. 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.
4:05		FRAC	WLT			0	Frac stage 35 opening press.

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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
11/20/2017 10:42	KEANE FRAC TX LLC	Perforation		FRT	EN	Elect W/line Perforating Equip	10.47	10.47	1	OPEN
Description: Wireline bart tool separated during pressure test.						Title: Wireline failure				
Total							10.47	10.47		