

EP WELLS DAILY OPERATIONS REPORT

Report 15

11/27/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 D 0904H
Wellbore	UNIVERSITY 19 D 0904H
WBS No/API No	30266560 / 4230133226.00

Event Summary

Event Type	Completion only	Event Start Date	10/31/2017	Days on Location	15.00
Objective	Install Completion	Original Spud Date	06/19/2017		
Est. Days	65.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

Well Status

Supervisor	Andrew Veroba	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	M. Hank Persaud	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,799.10 / 2,771.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	1.25/5.81	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	382,751/3,746,244.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.10	LOT/FIT EMW(ppg)	
Daily Cost	15,549	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:							

HSE Drills

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

Operations Summary

24 Hour Summary
Update Since Report Time
24 Hour Forecast

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.55	FRAC	FRT			0		<p>Stage 5 Summary University 19 D 0904H</p> <p>Interval 17581 - 17717</p> <p>Open Well Pressure 4,170 psi</p> <p>Max Treating Pressure 9,376 psi</p> <p>Max Slurry Rate 57.9 bpm</p> <p>Average Treating Pressure 8,818 psi</p> <p>Average Slurry Rate 48.2 bpm</p> <p>Breakdown Pressure 8,351 psi</p> <p>Breakdown Rate 7.3 bpm</p> <p>Breakdown Volume 365 gal</p> <p>Avg HHP 10,417 hp</p> <p>Final ISIP 5,666 psi</p> <p>Frac Gradient 0.920 psi/ft</p> <p>Pad Volume 1,840 gal</p> <p>Main Body Volume 204,221 gal</p> <p>Flush Volume 27,636 gal</p> <p>100 M AZ Sand Pumped 0 lbs</p> <p>100 M Brown Sand Pumped 381,900 lbs</p> <p>100 M Sand Pumped 46,660 lbs</p> <p>Proppant in Formation 428,560 lbs</p> <p>Avg Proppant Concentration 2.54 lb/gal</p> <p>Max Proppant Concentration 3.50 lb/gal</p> <p>Load to Recover (incl. pumpdown) 4,972 bbls</p> <p>Load to Recover w/o Acid 4,961 bbls</p> <p>15% HCL Spearhead 500 gal</p> <p>Slickwater Fluid Pumped 4,771 bbls</p> <p>20# Linear Fluid Pumped 80 bbls</p> <p>20# Crosslink Fluid Pumped 0 bbls</p> <p>Pump down volume 110 bbls</p> <p>pump down rate 9.0 bpm</p> <p>Max pump down pressure 5,800 psi</p> <p>Fluid Temp 72.0 ?F</p> <p>Total Pump Time 1:54 hr:min</p> <p>Pumps Lost During Job 0</p> <p>Treatment Start Time 22:37 0:00 0:00</p> <p>Treatment End Time 0:31 0:00 0:00</p> <p>Diverter Slurry bbls</p> <p>- Proppant was pumped with a ramp of 0.50 - 2.50 PPA, then steps of 2.50 PPA, 3.00 PPA, 3.5 PPA.</p> <p>- Ran 500 gal of 15% HCl</p> <p>- Ran 2 - 40 bbl shots of gel followed by a 20 bbl spacer.</p> <p>- Ran a ball in place plug.</p> <p>Time for Prop on Perfs 24.0 minutes</p> <p>Time between Stages (TBF) 1:50 Hours/min</p>
0:33	0.33	FRAC	FWL			0		WOCO.
0:53	0.30	FRAC	FWL			0		<p>Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools.</p> <p>Stab lubricator. Fill lubricator.</p> <p>Pressure test lubricator to 7000 psi</p>
1:11	2.02	FRAC	WLT			0		<p>Open well with 4900 psi. RIH.</p> <p>"Stage #6 Plug and Perf</p> <p>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 @ 10990'. Bring on pumps at 11250'. Pump down as follows:</p> <p>3 bpm @ 4200 psi</p> <p>6 bpm @ 4500 psi</p> <p>9 bpm @ 4800 psi</p> <p>10 bpm @ 5400 psi</p> <p>Max: 10 bpm. Max: 5800 psi.</p> <p>Set plug @ 17561'</p> <p>Perforate as follows:</p> <p>17532' - 17533'</p>

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								17491' - 17492' 17446' - 17447' 17401' - 17402' Stabilized pressure after perforating: 4450 psi Pump down volume: 123 bbl" POOH Shut in well with 4700 psi. Bleed off.
3:12	0.20	FRAC	WLF			0		Break lubricator. All shots fired. MU night cap. LD tools. Secure crown and wing valves. Handover from WL to Frac.
3:24	3.35	FRAC	WLF			0		WOCO.
6:45	1.88	FRAC	FRT			0		<p>Stage 6 Summary University 19 D 0904H</p> <p>Interval 17401 - 17537</p> <p>Open Well Pressure 4,335 psi</p> <p>Max Treating Pressure 9,384 psi</p> <p>Max Slurry Rate 60.0 bpm</p> <p>Average Treating Pressure 8,944 psi</p> <p>Average Slurry Rate 52.1 bpm</p> <p>Breakdown Pressure 6,059 psi</p> <p>Breakdown Rate 4.2 bpm</p> <p>Breakdown Volume 210 gal</p> <p>Avg HHP 11,421 hp</p> <p>Final ISIP 5,691 psi</p> <p>Frac Gradient 0.922 psi/ft</p> <p>Pad Volume 3,360 gal</p> <p>Main Body Volume 224,318 gal</p> <p>Flush Volume 27,762 gal</p> <p>100 MAZ Sand Pumped 0 lbs</p> <p>100 M Brown Sand Pumped 376,560 lbs</p> <p>100 M Sand Pumped 47,460 lbs</p> <p>Proppant in Formation 424,020 lbs</p> <p>Avg Proppant Concentration 2.27 lb/gal</p> <p>Max Proppant Concentration 2.50 lb/gal</p> <p>Load to Recover (incl. pumpdown) 5,464 bbls</p> <p>Load to Recover w/o Acid 5,452 bbls</p> <p>15% HCL Spearhead 500 gal</p> <p>Slickwater Fluid Pumped 5,249 bbls</p> <p>20# Linear Fluid Pumped 80 bbls</p> <p>20# Crosslink Fluid Pumped 0 bbls</p> <p>Pump down volume 123 bbls</p> <p>pump down rate 10.0 bpm</p> <p>Max pump down pressure 5,800 psi</p> <p>Fluid Temp 72.0 ?F</p> <p>Total Pump Time 1:53 hr:min</p> <p>Pumps Lost During Job 0</p> <p>Treatment Start Time 6:45 0:00 0:00</p> <p>Treatment End Time 8:38 0:00 0:00</p> <p>Diverter Slurry bbls</p> <p>- Proppant was pumped with a ramp of 0.50 - 2.50 PPA, then a step of 2.50 PPA.</p> <p>- Ran 500 gal of 15% HCl</p> <p>- Ran 2 shots of gel with a 20 bbl spacer.</p> <p>- A ball in place plug was utilized.</p> <p>Time for Prop on Perfs 21.0 minutes</p> <p>Time between Stages (TBF) 0:57 Hours/min</p>
8:38	0.00	FRAC	FWL			0		Wait on concurrent operations.
9:00	0.18	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 8kpsi. Open well with 4630 psi. RIH to 200'. Conduct switch checks.
9:11	1.90	FRAC	WLT			0		Stage 7 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 ball-in-place frac plug. Tie into liner top @ 10,990'. Bring

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								<p>on pumps at 11,500'. Pump down as follows: 3bpm @ 4640 psi 6bpm @ 5090 psi 9bpm @ 5240 psi</p> <p>Set plug @ 17,381ft Perforate as follows: 17,356' – 17,357' 17,311' – 17,312' 17,266' – 17,227' 17,221' – 17,222'</p> <p>Stabilized pressure after perf: 5018 psi Pump down volume: 105 bbl POOH to 1000'. Conduct Pause. Pull to 200' and wait on frac.</p>
11:05	0.15	FRAC	WLF			0		Bump up and SIW @ 4500 psi. Bled off pressure and break lubricator/BOP's. Lowered Perf guns out of lubricator and confirmed all shots fired. N/U nightcap and close crown valve. L/D perf guns and setting tool. Greased crown valve. HO to Frac.
11:14	2.85	FRAC	WLF			0		Wait on concurrent operations.
14:05	0.92	FRAC	WLF			0		Wireline tools laid down for re-head. Coincide with wireline truck repair (see 903 report), frac pump maintenance and blender densitometer repair.
15:00	1.25	FRAC	FRP			1		START NPT NOW Normal frac pump maintenance complete. Undergoing blender densitometer repair.
16:15	1.25	FRAC	FRP			0		END NPT NOW Prime pumps for Pressure test. On test noted fluid bypassing bleed down lines. Grease four isolation valves and retest to 9500 psi. Test good.
17:30	0.50	FRAC	FRT			0		<p>START NPT NOW</p> <p>17:45 with 400bbl acid and 8000 lbs sand in well washout developed in chick between missile and zipper manifold.</p> <ul style="list-style-type: none"> - Shut down pumps - Shut in well - Held Pause to discuss forward actions.
18:00	1.00	FRAC	FRT			0		<p>Flush well</p> <p>Open well w/ 6400 psi.</p> <p>5 bpm @ 7000 psi, 6 bpm @ 7000 psi, 9.5 bpm @ 7500 psi, and 10.7 bpm @ 7500 psi.</p> <p>Flushed acid and all sand into well. 506 flush + 50 bbls = 556 bbls - final pumping pressure 10.7 bpm @ 6500 psi.</p> <p>Shut in well with 5500 psi.</p>
19:00	0.50	FRAC	FRT			0		WOCO.
19:30	1.83	FRAC	FRT			0		<p>Stage 7 Summary University 19 D 0904H</p> <p>Interval 17221 - 17357</p> <p>Open Well Pressure 4,054 psi</p> <p>Max Treating Pressure 9,219 psi</p> <p>Max Slurry Rate 59.8 bpm</p> <p>Average Treating Pressure 8,797 psi</p> <p>Average Slurry Rate 51.3 bpm</p> <p>Breakdown Pressure 8,826 psi</p> <p>Breakdown Rate 5.1 bpm</p> <p>Breakdown Volume 378 gal</p> <p>Avg HHP 11,061 hp</p> <p>Final ISIP 5,738 psi</p> <p>Frac Gradient 0.926 psi/ft</p> <p>Pad Volume 7,308 gal</p> <p>Main Body Volume 227,095 gal</p> <p>Flush Volume 50,904 gal</p> <p>100 MAZ Sand Pumped 0 lbs</p> <p>100 M Brown Sand Pumped 329,040 lbs</p> <p>100 M Sand Pumped 95,660 lbs</p> <p>Proppant in Formation 424,700 lbs</p> <p>Avg Proppant Concentration 2.63 lb/gal</p> <p>Max Proppant Concentration 3.50 lb/gal</p>

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Load to Recover (incl. pumpdown) 5,516 bbls Load to Recover w/o Acid 5,507 bbls 15% HCL Spearhead 400 gal Slickwater Fluid Pumped 5,318 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 1:52 hr:min Pumps Lost During Job 0 Treatment Start Time 17:35 19:36 0:00 Treatment End Time 17:47 21:16 0:00 Diverter Slurry bbls - Proppant was pumped with a ramp of 0.50 - 2.50 PPA, then steps of 2.50 PPA, 3.00 PPA, 3.50 PPA. - Ran 400 gal of 15% HCl - Ran 2 shots of gel with a 20 bbl spacer. - A ball in place plug was utilized. - 7600 lbs into the ramp we had to shut down due a wash out on the iron. The ramp was restarted when we resumed the stage. Pumpdown pumps were used to flush the wellbore prior to resuming the stage. Time for Prop on Perfs 20.0 minutes Time between Stages (TBF) 3:55 Hours/min
21:20	0.28	FRAC	FWL			0		WOCO.
21:37	0.27	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 7000 psi
21:53		FRAC	FWL			0		
Total	21.52							

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
11/27/2017 15:00	KEANE FRAC TX LLC	Stimulation		FRP	EN	Frac Blender	2.50	2.50	1	OPEN
Description: Blender densitometer reading erratic and inconsistent. Coincide with wireline re-head, wireline truck repair and pump maintenance.						Title: FRAC- Blender Densitometer Erratic				
11/27/2017 17:30	KEANE FRAC TX LLC	Stimulation		FRT	EN	Frac - Other Equipment	3.83	3.83		OPEN
Description: At 17:45 with 400bbl acid and 8000 lbs sand in well washout developed in chick between missile and zipper manifold. - Shut down pumps - Shut in well - Held Pause to discuss forward actions. Conditions: 9000 psi, 36.4 bbl/min, 0.75 ppg.						Title: Washout on frac iron.				
Total							6.33	6.33		