

EP WELLS DAILY OPERATIONS REPORT

Report 19

12/01/2017

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	19.00
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/%)	0/0	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	1,399,753/3,746,244.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.37	LOT/FIT EMW(ppg)	
Daily Cost	208,193	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:							
Total hours: 1072							

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	18

Operations Summary

24 Hour Summary
Frac stages 16-18
Update Since Report Time
Frac stage 19
24 Hour Forecast
Frac stages 19-21

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	1.92	FRAC	WLT			0		Open well with 5100 psi. RIH. "Stage #16 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 @ 10990'. Bring on pumps at 11550'. Pump down as follows: 3 bpm @ 4400 psi 6 bpm @ 4800 psi 10 bpm @ 5600 psi Max: 10 bpm. Max: 6300 psi. Set plug @ 15806' Perforate as follows: 15781' - 15782' 15736' - 15737' 15691' - 15692' 15646' - 15647' Stabilized pressure after perforating: 4850 psi Pump down volume: 78 bbl" POOH Shut in well with 4800 psi. Bleed off.
1:55	0.10	FRAC	WLF			0		Break lubricator. All shots fired. MU night cap. LD tools. Secure crown and wing valves. Handover from WL to Frac.
2:01	2.98	FRAC	WLF			0		WOCO.
5:00	0.25	FRAC	FRP			0		Frac prep.
5:15	1.85	FRAC	FRT			0		Stage 16 Summary University 19 D 0904H Interval 15646 - 15782 Open Well Pressure 4,406 psi Max Treating Pressure 9,240 psi Max Slurry Rate 56.5 bpm Average Treating Pressure 8,731 psi Average Slurry Rate 47.5 bpm Breakdown Pressure 8,298 psi Breakdown Rate 9.5 bpm Breakdown Volume 462 gal Avg HHP 10,165 hp Final ISIP 5,641 psi Frac Gradient 0.918 psi/ft Pad Volume 1,554 gal Main Body Volume 204,168 gal Flush Volume 26,586 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 284,140 lbs 100 M Sand Pumped 142,000 lbs Proppant in Formation 426,140 lbs Avg Proppant Concentration 2.53 lb/gal Max Proppant Concentration 3.50 lb/gal Load to Recover (incl. pumpdown) 4,939 bbls Load to Recover w/o Acid 4,932 bbls 15% HCL Spearhead 300 gal Slickwater Fluid Pumped 4,774 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 78 bbls pump down rate 10.0 bpm Max pump down pressure 6,311 psi Fluid Temp 72.0 ?F Total Pump Time 1:49 hr:min Pumps Lost During Job 0 Treatment Start Time 5:17 0:00 0:00 Treatment End Time 7:06 0:00 0:00 Diverter Slurry bbls - Proppant was pumped with a ramp of 0.50 - 2.50 PPA, then steps

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								of 2.50 PPA, 3.00 PPA, 3.50 PPA. - Ran 300 gal of 15% HCl - Ran 2 shots of gel with a 20 bbl spacer. - A ball in place plug was utilized. Time for Prop on Perfs 19.0 minutes Time between Stages (TBF) 1:24 Hours/min
7:06	0.47	FRAC	FWL			0		SIW and wait on concurrent operations.
7:34	0.22	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 8kpsi.
7:47	1.95	FRAC	WLT			0		Open well with 4950 psi and RIH. Conduct 200' gun checks. Stage 17 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 on pumps at 11,450'. Pump down as follows: 3bpm @ 4690 psi 6bpm @ 5000 psi 10bpm @ 5850 psi Max pressure = 6300 psi Set plug @ 15,627ft Perforate as follows: 15,601' – 15,602' 15,556' – 15,557' 15,511' – 15,512' 15,466' – 15,467' Stabilized pressure after perf: 5260 psi Pump down volume: 81 bbl POOH to 1000'. Conduct Pause. Wait at 200' for frac.
9:44	0.22	FRAC	GRS			0		Bump up tools and grease UMW.
9:57	0.20	FRAC	WLF			0		SIW @ 4600 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. Grease LMV. HO to Frac.
10:09	3.00	FRAC	WLF			0		Wait on concurrent operations.
13:09	0.10	FRAC	FRP			0		Verify sand available for frac. Prime pumps and equalize.
13:15	1.68	FRAC	FRT			0		Stage 17 Summary University 19 D 0904H Interval 15466 - 15602 Open Well Pressure 4,340 psi Max Treating Pressure 9,227 psi Max Slurry Rate 58.0 bpm Average Treating Pressure 8,835 psi Average Slurry Rate 51.6 bpm Breakdown Pressure 7,160 psi Breakdown Rate 8.0 bpm Breakdown Volume 336 gal Avg HHP 11,174 hp Final ISIP 5,581 psi Frac Gradient 0.913 psi/ft Pad Volume 1,134 gal Main Body Volume 205,554 gal Flush Volume 26,460 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 375,000 lbs 100 M Sand Pumped 47,280 lbs Proppant in Formation 422,280 lbs Avg Proppant Concentration 2.48 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,975 bbls Load to Recover w/o Acid 4,968 bbls 15% HCL Spearhead 300 gal

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								<p>Slickwater Fluid Pumped 4,807 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 81 bbls pump down rate 10.0 bpm Max pump down pressure 6,300 psi Fluid Temp 72.0 ?F Total Pump Time 1:41 hr:min Pumps Lost During Job 0 Treatment Start Time 13:15 0:00 0:00 Treatment End Time 14:56 0:00 0:00 Diverter Slurry bbls</p> <p>- Proppant was pumped with a ramp of 0.50 - 2.5 PPA, then steps of 2.5 PPA, 3.0 PPA, 3.5 PPA, and 4.0 PPA - Ran 300 gal of 15% HCl - Ran 2 shots of gel with a 20 bbl spacer. - A ball in place plug was utilized.</p> <p>Time for Prop on Perfs 17.0 minutes Time between Stages (TBF) 0:43 Hours/min</p>
14:56	0.30	FRAC	FWL			0		SIW and wait on concurrent operations. Wireline move from 903 well.
15:14	0.18	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab and fill lubricator. Pressure test PCE to 8kpsi.
15:25	1.85	FRAC	WLT			0		<p>Open well with 5250 psi and RIH. Conduct switch checks at 200'. Stage 18 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 on pumps at 11,380'. Pump down as follows: 3bpm @ 5050 psi 6bpm @ 5300 psi 10bpm @ 5550 psi Max pressure = 6300 psi</p> <p>Set plug @ 15,446ft Perforate as follows: 15,418' – 15,419' 15,376' – 15,377' 15,331' – 15,332' 15,286' – 15,287' Stabilized pressure after perf: 5369 psi Pump down volume: 72 bbl POOH.</p>
17:16	0.25	FRAC	WLF			0		Bump up and SIW @ 5000 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 wing and hydraulic valve. HO to Frac.
17:31	3.48	FRAC	WLF			0		Wait on concurrent operations.
21:00	1.00	FRAC	WLF			0		Frac prep.
22:00	1.75	FRAC	FRT			0		<p>Stage 18 Summary University 19 D 0904H Interval 15286 - 15422 Open Well Pressure 4,526 psi Max Treating Pressure 9,243 psi Max Slurry Rate 56.9 bpm Average Treating Pressure 8,876 psi Average Slurry Rate 50.0 bpm Breakdown Pressure 7,548 psi Breakdown Rate 9.5 bpm Breakdown Volume 244 gal Avg HHP 10,877 hp Final ISIP 5,973 psi</p>

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Frac Gradient 0.946 psi/ft Pad Volume 1,583 gal Main Body Volume 187,700 gal Flush Volume 26,334 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 420,960 lbs 100 M Sand Pumped 0 lbs Proppant in Formation 420,960 lbs Avg Proppant Concentration 2.75 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover (incl. pumpdown) 4,541 bbls Load to Recover w/o Acid 4,534 bbls 15% HCL Spearhead 300 gal Slickwater Fluid Pumped 4,382 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 72 bbls pump down rate 10.0 bpm Max pump down pressure 6,300 psi Fluid Temp 72.0 ?F Total Pump Time 1:41 hr:min Pumps Lost During Job 0 Treatment Start Time 22:02 0:00 0:00 Treatment End Time 23:43 0:00 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, 3.5 PPA. - Ran 300 gal of 15% HCl - Ran 2 shots of gel with a 20 bbl spacer. - A ball in place plug was utilized. Time for Prop on Perfs 17.0 minutes Time between Stages (TBF) 2:18 Hours/min
23:45	0.25	FRAC	FWL			0		WOCO.
Total	24.00							

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	0.17	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
0:10	1.78	FRAC	WLT			0	Open well with 5150 psi. RIH. "Stage #19 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 @ 10990'. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ 4400 psi 6 bpm @ 5000 psi 10 bpm @ 5100 psi Max:10 bpm. Max: 6350 psi. Set plug @ 15266' Perforate as follows: 15247' - 15248' 15196' - 15197' 15151' - 15152' 15106' - 15107' Stabilized pressure after perforating: 5320 psi Pump down volume: 54 bbl" POOH

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Wellbore UNIVERSITY 19 D 0904H

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							Shut in well with 4900 psi. Bleed off.
1:57	0.15	FRAC	WLF			0	Break lubricator. All shots fired. MU night cap. LD tools and stand lubricator. Secure crown and wing valves. Handover from WL to Frac.
2:06	2.32	FRAC	WLF			0	WOCO.
4:25		FRAC	FRT			0	Frac stage 19