

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1406H
Wellbore	UNIVERSITY 19 PW UNIT 1406H
WBS No/API No	4230133213 / 4230133213.00

Event Summary

Event Type	Completion only	Event Start Date	09/03/2017	Days on Location	14.00
Objective	Install Completion	Original Spud Date	04/30/2017		
Est. Days	31.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

Well Status

Supervisor	Tommy Hurdle	Measured Depth(ft)	
Engineer	Alex Villegas	TVD(ft)	
Other Supervisor	Nick Morrison	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,793.00 / 2,767.00	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	933,624/4,377,702.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.21	LOT/FIT EMW(ppg)	
Daily Cost	297,961	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	13

Operations Summary

24 Hour Summary
Frac stages 8 thru 11 WL stages 8 thru 12
Update Since Report Time
POOH with plug and perf stage 9
24 Hour Forecast
Continue Perf and Frac operations

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Well UNIVERSITY 19 PW UNIT 1406H
Wellbore UNIVERSITY 19 PW UNIT 1406H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.70	FRAC	WLT			0		"Stage #8 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 @ . Bring on pumps at 11400'. Pump down as follows: 3 bpm @ 4740 psi 6 bpm @ 5200 psi 9 bpm @ 5700 psi 12 bpm @ psi Max:9 bpm. Max: 6300 psi Set plug @ 18298 ft Perforate as follows: 18276' - 18277' 18232' - 18233' 18188' - 18189' 18144' - 18145' Stabilized pressure after perforating: 5364 psi Pump down volume: 120 bbl"
0:42	0.80	FRAC	WLT			0		POOH
1:30	0.37	FRAC	OPO			0		Wait at 200 ft for frac
1:52	0.10	FRAC	WLF			0		Shut in well with 4750 psi Break lubricator. All shots fired. MU night cap. LD tools and lub. Secure crown and wing valves. Grease LMV Handover from WL to frac.
1:58	0.40	FRAC	WLF			0		Other pad operations
2:22	0.45	FRAC	FRP			0		Fueling frac equipment
2:49	0.05	FRAC	FRP			0		Prime up equalize to 5000 psi. Open well with 4462 psi.
2:52	1.85	FRAC	FRT			0		Stage 8 Summary University 19 PW Unit 1406H Interval 18144 - 18277 Open Well Pressure 4,462 psi Max Treating Pressure 9,350 psi Max Slurry Rate 58.3 bpm Average Treating Pressure 8,998 psi Average Slurry Rate 45.4 bpm Breakdown Pressure 7,451 psi Breakdown Rate 7.0 bpm Breakdown Volume 344 gal Avg HHP 10,012 hp Final ISIP 5,352 psi Frac Gradient 0.890 psi/ft Pad Volume 1,084 gal Main Body Volume 181,302 gal Flush Volume 28,308 gal 100 M AZ Sand Pumped 48,260 lbs 100 M Brown Sand Pumped 141,000 lbs 100 M Sand Pumped 231,360 lbs Proppant in Formation 420,620 lbs Avg Proppant Concentration 2.98 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,439 bbls Load to Recover w/o Acid 4,434 bbls 15% HCL Spearhead 198 gal Slickwater Fluid Pumped 4,232 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 122 bbls pump down rate 9.0 bpm Max pump down pressure 6,300 psi Fluid Temp 72.0 ?F Total Pump Time 1:51 hr:min Pumps Lost During Job 0

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Well UNIVERSITY 19 PW UNIT 1406H
Wellbore UNIVERSITY 19 PW UNIT 1406H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Treatment Start Time 2:52 0:00 0:00 Treatment End Time 4:43 0:00 1:51 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then in steps of 3.0 PPA, 3.5 PPA and 4 PPA - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Ran one 200 gal shot of 15% HCl - Ran ball in place plug Time for Prop on Perfs 22.0 minutes Time between Stages (TBF) 0:59 Hours/min
4:43	0.20	FRAC	OPO			0		Other pad operations
4:55	0.32	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 4900 psi. RIH.
5:14	0.82	FRAC	WLT			0		"Stage #9 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 @ 11069. Bring on pumps at 11400'. Pump down as follows: 3 bpm @ 4900 psi 6 bpm @ 5500 psi 9 bpm @ 6230 psi 12 bpm @ psi Max:9 bpm. Max: 6700 psi Set plug @ 18124 ft Perforate as follows: 18100' - 18101' 18056' - 18057' 18012' - 18013' 17967' - 17968' Stabilized pressure after perforating: 5700 psi Pump down volume: 120 bbl"
6:03	0.95	FRAC	WLT			0		POOH. Held pause at 1000'.
7:00	0.67	FRAC	WLT			0		Bump up and SIW @ 4820 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 P/U next set of guns for next run. Greased UMW & Wing valve - grease time 10 min. Encountered issue opening Tool trap. hand pump wouldn't build up pressure. Changed out pump. HO to Frac
7:40		FRAC	WLT			0		Other Pad Ops
8:05	0.05	FRAC	FRP			0		Equalize and open well @ 4523 psi.
8:08	1.95	FRAC	FRT			0		Stage 9 Summary University 19 PW Unit 1406H Interval 17967 - 18101 Open Well Pressure 4,523 psi Max Treating Pressure 9,283 psi Max Slurry Rate 50.2 bpm Average Treating Pressure 8,952 psi Average Slurry Rate 41.4 bpm Breakdown Pressure 7,300 psi Breakdown Rate 8.0 bpm Breakdown Volume 210 gal Avg HHP 9,084 hp Final ISIP 5,292 psi Frac Gradient 0.885 psi/ft Pad Volume 1,092 gal Main Body Volume 174,443 gal Flush Volume 28,056 gal 100 MAZ Sand Pumped 6,000 lbs 100 M Brown Sand Pumped 371,500 lbs

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Well UNIVERSITY 19 PW UNIT 1406H
Wellbore UNIVERSITY 19 PW UNIT 1406H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								100 M Sand Pumped 42,540 lbs Proppant in Formation 420,040 lbs Avg Proppant Concentration 3.02 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,273 bbls Load to Recover w/o Acid 4,269 bbls 15% HCL Spearhead 185 gal Slickwater Fluid Pumped 4,069 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 120 bbls pump down rate 9.0 bpm Max pump down pressure 6,700 psi Fluid Temp 72.0 ?F Total Pump Time 1:57 hr:min Pumps Lost During Job 0 Treatment Start Time 8:08 0:00 0:00 Treatment End Time 10:05 0:00 1:57 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then in steps of 3.0 PPA, 3.5 PPA and 4 PPA - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Ran one 200 gal shot of 15% HCl - Ran ball in place plug Time for Prop on Perfs 20.0 minutes Time between Stages (TBF) 1:13 Hours/min
10:05	0.03	FRAC	FWL			0		SIW @ 5167 psi. Bleed off pressure and HO to WL. Held pause to discuss AAR on frac stage.
10:07	0.30	FRAC	FWL			0		Other Pad Ops
10:25	0.25	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4980 psi. RIH to 200' conduct checks.
10:40	0.92	FRAC	WLT			0		"Stage #10 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 @11069. Bring on pumps at 11600'. Pump down as follows: 3bpm @ 4725psi @11600 6bpm @ 4885psi @11700 10bpm @ 5330psi @11800 10bpm w/ 6395psi Set plug @ 17947ft Perforate as follows: 17922' - 17923' 17881' - 17882' 17835' - 17836' 17791' - 17792' Stabilized pressure after perf: 4900psi Pump down volume: 125bbl"
11:35	0.98	FRAC	WLT			0		POOH. Waiting @ 1000' for frac. Held pause to discuss COW.
12:34	0.18	FRAC	WLF			0		Bump up and SIW @ 4790 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 P/U next set of guns for next run. Greased Crown & Hyd valve - grease time 10 min. HO to Frac
12:45	0.25	FRAC	OPO			0		Other Pad Ops.
13:00	0.43	FRAC	FRP			0		Finish fueling frac fleet. Prime and equalize. Open well @

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Well UNIVERSITY 19 PW UNIT 1406H
Wellbore UNIVERSITY 19 PW UNIT 1406H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
13:26	1.97	FRAC	FRT			0		Stage 10 Summary University 19 PW Unit 1406H Interval 17791 - 17924 Open Well Pressure 4,534 psi Max Treating Pressure 9,353 psi Max Slurry Rate 47.3 bpm Average Treating Pressure 8,969 psi Average Slurry Rate 40.8 bpm Breakdown Pressure 5,652 psi Breakdown Rate 8.0 bpm Breakdown Volume 168 gal Avg HHP 8,969 hp Final ISIP 5,247 psi Frac Gradient 0.881 psi/ft Pad Volume 1,260 gal Main Body Volume 174,149 gal Flush Volume 28,014 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 420,220 lbs 100 M Sand Pumped 0 lbs Proppant in Formation 420,220 lbs Avg Proppant Concentration 3.02 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,271 bbls Load to Recover w/o Acid 4,267 bbls 15% HCL Spearhead 185 gal Slickwater Fluid Pumped 4,062 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 125 bbls pump down rate 10.0 bpm Max pump down pressure 6,395 psi Fluid Temp 72.0 ?F Total Pump Time 1:58 hr:min Pumps Lost During Job 1 Treatment Start Time 13:26 0:00 0:00 Treatment End Time 15:24 0:00 1:58 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 3.0 PPA, then in steps of 3.0 PPA, 3.5 PPA and 4 PPA - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Ran one 150 gal shot of 15% HCL - Ran ball in place plug - Pump 10068 was taken off line during the stage for fluid end maintenance Time for Prop on Perfs 19.0 minutes Time between Stages (TBF) 0:50 Hours/min
15:24	0.02	FRAC	FWL			0		SIW @ 5250 psi. Held pause to discuss AAR for stage.
15:25	0.25	FRAC	OPO			0		Other Pad Ops.
15:40	1.00	FRAC	FWL			0		Conduct pump maintenance, Re-head and grease zipper
16:40	0.25	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4730 psi. RIH to 200' conduct checks.
16:55	0.83	FRAC	WLT			0		"Stage #11 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 @11069. Bring on pumps at 11700'. Pump down as follows: 3bpm @ 4650psi @11700 6bpm @ 4850psi @11800 10bpm @ 5200psi @11850

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Well UNIVERSITY 19 PW UNIT 1406H
Wellbore UNIVERSITY 19 PW UNIT 1406H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								10bpm w/ 6271psi Set plug @ 17771ft Perforate as follows: 17747' - 17748' 17703' - 17704' 17659' - 17660' 17615' - 17616' Stabilized pressure after perf: 5200psi Pump down volume: 120bbl" 1730 - Held Pre-Tower Safety Meeting. Covered focus areas - SSE, Barrier Ownership, Hands Free and DROPS. After pre-tower crews held respective TBT for their areas. Then conducted their handovers.
17:45	2.00	FRAC	WLT			0		POOH. Held pause at 1000' from surface.
19:45	0.18	FRAC	WLF			0		Bump up and SIW @ 5160 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 P/U next set of guns for next run. Greased LMV valve - grease time 10 min. HO to Frac
19:56	0.23	FRAC	WLF			0		Other Pad Ops.
20:10	0.07	FRAC	FRT			0		Align valves prime up equalize to 5000 psi.
20:14	1.60	FRAC	FRT			0		Stage 11 Summary University 19 PW Unit 1406H Interval 17615 - 17748 Open Well Pressure 4,290 psi Max Treating Pressure 9,326 psi Max Slurry Rate 57.3 bpm Average Treating Pressure 8,984 psi Average Slurry Rate 48.6 bpm Breakdown Pressure 8,168 psi Breakdown Rate 15.1 bpm Breakdown Volume 244 gal Avg HHP 10,702 hp Final ISIP 5,368 psi Frac Gradient 0.892 psi/ft Pad Volume 441 gal Main Body Volume 164,627 gal Flush Volume 27,888 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 110,180 lbs 100 M Sand Pumped 310,640 lbs Proppant in Formation 420,820 lbs Avg Proppant Concentration 3.24 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,040 bbls Load to Recover w/o Acid 4,040 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,840 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 120 bbls pump down rate 10.0 bpm Max pump down pressure 6,271 psi Fluid Temp 72.0 ?F Total Pump Time 1:32 hr:min Pumps Lost During Job 0 Treatment Start Time 20:18 0:00 0:00 Treatment End Time 21:50 0:00 1:32 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 3.5 PPA, then in steps of 3.5 PPA and 4.0 PPA - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Did not run 15% HCL this stage

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Well UNIVERSITY 19 PW UNIT 1406H
Wellbore UNIVERSITY 19 PW UNIT 1406H

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								- Ran ball in place plug
								Time for Prop on Perfs 19.0 minutes Time between Stages (TBF) 0:31 Hours/min
21:50	0.15	FRAC	OPO			0		Other pad operations
21:59	0.30	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 5000 psi. RIH.
22:17	0.90	FRAC	WLT			0		"Stage #12 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 @ 11069. Bring on pumps at 11400'. Pump down as follows: 3 bpm @ 4800 psi 6 bpm @ 5200 psi 9 bpm @ 5500 psi 12 bpm @ psi Max:9 bpm. Max: 6000 psi Set plug @ 17595 ft Perforate as follows: 17571' - 17572' 17527' - 17528' 17483' - 17484' 17439' - 17440' Stabilized pressure after perforating: 5430 psi Pump down volume: 110 bbl"
23:11	0.73	FRAC	WLT			0		Pooh
23:55	0.08	FRAC	WLT			0		bump up grease UMW and wing valve 8 min
Total	23.58							

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	0.17	FRAC	FWL			0	Shut in well with 4650 psi Break lubricator. All shots fired. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
0:10	0.22	FRAC	FWL			0	Other Pad Operations
0:23	0.10	FRAC	FRP			0	Prime up equalize to 5000 psi.
0:29	1.72	FRAC	FRT			0	Stage 12 Summary University 19 PW Unit 1406H Interval 17439 - 17572 Open Well Pressure 4,401 psi Max Treating Pressure 9,431 psi Max Slurry Rate 54.7 bpm Average Treating Pressure 8,868 psi Average Slurry Rate 44.1 bpm Breakdown Pressure 8,173 psi Breakdown Rate 13.3 bpm Breakdown Volume 265 gal Avg HHP 9,585 hp Final ISIP 5,437 psi Frac Gradient 0.898 psi/ft Pad Volume 647 gal Main Body Volume 159,008 gal Flush Volume 27,762 gal 100 MAZ Sand Pumped 0 lbs 100 M Brown Sand Pumped 284,700 lbs

EP WELLS DAILY OPERATIONS REPORT

Report 14

10/22/2017

Well UNIVERSITY 19 PW UNIT 1406H
Wellbore UNIVERSITY 19 PW UNIT 1406H

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							100 M Sand Pumped 136,120 lbs Proppant in Formation 420,820 lbs Avg Proppant Concentration 3.46 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 3,896 bbls Load to Recover w/o Acid 3,896 bbls 15% HCL Spearhead 0 gal Slickwater Fluid Pumped 3,706 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 110 bbls pump down rate 9.0 bpm Max pump down pressure 6,000 psi Fluid Temp 72.0 ?F Total Pump Time 1:40 hr:min Pumps Lost During Job 1 Treatment Start Time 0:32 0:00 0:00 Treatment End Time 2:12 0:00 1:40 Diverter Slurry bbls - Proppant was pumped as a ramp from 0.50 PPA to 4.0 PPA, then a step of 4.0 PPA - Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Did not run 15% HCl this stage - Ran ball in place plug Time for Prop on Perfs 18.5 minutes Time between Stages (TBF) 0:37 Hours/min
2:12	0.22	FRAC	FWL			0	Other pad operations
2:25	0.32	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 4950 psi. RIH.
2:44	0.77	FRAC	WLT			0	"Stage #13 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 @ 11069. Bring on pumps at 11570'. Pump down as follows: 3 bpm @ 4800 psi 6 bpm @ 5200 psi 9 bpm @ 5600 psi 12 bpm @ psi Max:9 bpm. Max: 6000 psi Set plug @ 17419 ft Perforate as follows: 17395' - 17396' 17351' - 17352' 17307' - 17308' 17263' - 17264' Stabilized pressure after perforating: 5530 psi Pump down volume: 105 bbl"
3:30		FRAC				0	POOH