

EP WELLS DAILY OPERATIONS REPORT

Report 27

10/12/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1407H
Wellbore	UNIVERSITY 19 PW UNIT 1407H
WBS No/API No	30266571 / 4230133203

Event Summary

Event Type	Completion only	Event Start Date	09/03/2017	Days on Location	27.00
Objective	Install Completion	Original Spud Date	05/11/2017		
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	Ben Dickinson	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,792.70 / 2,766.70	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	2,042,699/4,701,640.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.43	LOT/FIT EMW(ppg)	
Daily Cost	19,308	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	26

Operations Summary

24 Hour Summary
Frac Stages:
WL Stages:
Update Since Report Time
24 Hour Forecast
Cont. Frac Ops

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	1.17	FRAC	SVC			0		WL rehead and clean up work area. Extreme FB reconfigure 3" iron on 1407H for WL sheave. FMC grease Zipper manifold.
1:10	4.42	FRAC	OPO			0		WL rehead complete. Standby for other pad operations.
5:35	0.33	FRAC	WLT			0		Valve team line out valves to test FB 3" iron. Begin pressure test. Low 200 psi, 5 min High 9500 psi, 5 min TEST GOOD.
5:55	0.33	FRAC	WLT			0		Valve team line out valves for WL operations on the 1407.
6:15	0.25	FRAC	WLT			0		Crane checked anti-two block - test good. Pickup WL bridle and and lubricator. Set lubricator in stand.
6:30	0.50	FRAC	WLT			0		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.
7:00	0.67	FRAC	WLT			0		Re-Gen WL truck.
7:40	0.50	FRAC	WLT			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4250 psi. RIH to 200' conduct checks.
8:10	0.92	FRAC	WLT			0		"Stage #26 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 @11122. Bring on pumps at 11600'. Pump down as follows: 3bpm @ 4235psi @11600 6bpm @ 4520psi @11700 10bpm @ 5235psi @11800 10bpm w/ 6440psi @ Set plug @ 15954ft Perforate as follows: 15930' - 15931' 15885' - 15886' 15841' - 15842' 15796' - 15797' Stabilized pressure after perf: 5130psi Pump down volume: 93bbl"
9:05	1.05	FRAC	WLT			0		POOH. Held pause at 1000' to come off the well.
10:08	0.37	FRAC	WLF			0		Bump up and SIW @ 4920 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 and Hyd valve - grease time 10 min. HO to Frac
10:30	0.25	FRAC	WLF			0		Other Pad Ops
10:45	0.28	FRAC	FRP			0		Prime up and pressure test to 9500 psi. Test Good. Open well @ 4168 psi.
11:02	2.08	FRAC	FRT			0		Stage 26 Summary University 19 PW Unit 1407H Interval 15796 - 15931 Open Well Pressure 4,168 psi Max Treating Pressure 9,560 psi Max Slurry Rate 53.6 bpm Average Treating Pressure 9,122 psi Average Slurry Rate 40.5 bpm Breakdown Pressure 5,121 psi Breakdown Rate 8.0 bpm Breakdown Volume 84 gal Avg HHP 9,055 hp Final ISIP 5,269 psi Frac Gradient 0.928 psi/ft Pad Volume 798 gal Main Body Volume 182,826 gal

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Flush Volume 26,712 gal 100 M AZ Sand Pumped 184,980 lbs 100 M Brown Sand Pumped 0 lbs 100 M Sand Pumped 234,320 lbs Proppant in Formation 419,300 lbs Avg Proppant Concentration 2.81 lb/gal Max Proppant Concentration 3.50 lb/gal Load to Recover 4,446 bbls Load to Recover w/o Acid 4,440 bbls 15% HCL Spearhead 252 gal Slickwater Fluid Pumped 4,267 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 93 bbls pump down rate 10.0 bpm Max pump down pressure 6,440 psi Fluid Temp 72.0 ?F Total Pump Time 2:03 hr:min Pumps Lost During Job 0 Treatment Start Time 11:04 0:00 0:00 Treatment End Time 13:07 0:00 2:03 Diverter Slurry bbls -Pumped sand in a 0.50 PPA -3.00 PPA ramp, 3.00 PPA hold, 3.50 step. -Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Pumped one 200 gal shot of acid. - Ran a ball in place plug. Time for Prop on Perfs 19.0 minutes
13:07	0.13	FRAC	FWL			0		SIW @ 4917 psi. Bleed off pressure and HO to WL. Held pause to discuss AAR on frac stage.
13:15	0.33	FRAC	FWL			0		Other Pad Ops
13:35	0.33	FRAC	FWL			0		Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4460 psi. RIH to 200' conduct checks.
13:55	0.92	FRAC	WLT			0		"Stage #27 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 @11122. Bring on pumps at 11600'. Pump down as follows: 3bpm @ 4385psi @11600 6bpm @ 4679psi @11700 10bpm @ 5105psi @11800 10bpm w/ 6450psi Set plug @ 15776ft Perforate as follows: 15748.5' - 15749.5' 15705' - 15706' 15659.5' - 15660.5' 15615.5' - 15616.5' Stabilized pressure after perf: 5045psi Pump down volume: 84bbl"
14:50	1.08	FRAC	WLT			0		POOH to 1000'. Held pause to discuss coming off the well.
15:55	0.25	FRAC	WLF			0		Bump up and SIW @ 4200 psi. Bled off pressure and break lubricator/BOP's. Lowered Perf guns out of lubricator and confirmed all shots fired. Drop ball, N/U nightcap and close crown valve. L/D perf guns and P/U next set of guns for next run. Greased LMV - grease time 5 min. HO to Frac
16:10	0.25	FRAC	WLF			0		Other Pad Ops

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
16:25	0.13	FRAC	FRP			0		Prime up and equalize. Open well @ 4082 psi.
16:33	1.82	FRAC	FRT			0		Stage 27 Summary University 19 PW Unit 1407H Interval 15618 - 15753 Open Well Pressure 4,082 psi Max Treating Pressure 9,665 psi Max Slurry Rate 60.8 bpm Average Treating Pressure 9,116 psi Average Slurry Rate 45.7 bpm Breakdown Pressure 6,250 psi Breakdown Rate 8.0 bpm Breakdown Volume 126 gal Avg HHP 10,211 hp Final ISIP 5,555 psi Frac Gradient 0.955 psi/ft Pad Volume 3,738 gal Main Body Volume 181,398 gal Flush Volume 26,670 gal 100 M AZ Sand Pumped 143,240 lbs 100 M Brown Sand Pumped 20,000 lbs 100 M Sand Pumped 260,460 lbs Proppant in Formation 423,700 lbs Avg Proppant Concentration 2.91 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,403 bbls Load to Recover w/o Acid 4,397 bbls 15% HCL Spearhead 252 gal Slickwater Fluid Pumped 4,233 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 84 bbls pump down rate 10.0 bpm Max pump down pressure 6,450 psi Fluid Temp 72.0 ?F Total Pump Time 1:49 hr:min Pumps Lost During Job 0 Treatment Start Time 16:33 0:00 0:00 Treatment End Time 18:22 0:00 1:49 Diverter Slurry bbls -Pumped sand in a 0.50 PPA -3.00 PPA ramp,3.00 PPA hold,3.50, and a 4.0 PPA step. -Two 20# gel sweeps 40 bbls each were pumped prior to flush. - Pumped one 200 gal shot of acid. - Ran a ball in place plug. Time for Prop on Perfs 22.0 minutes
18:22	0.03	FRAC	FRT			0		Valve team shut UMV @ 5095 psi. End frac 1407 stage 27. Bleed off and line out valves.
18:24	0.60	FRAC	FWL			0		Frac HO to WL. Standby for other pad operations.
19:00	0.07	FRAC	FWL			0		WL MU new guns and plug. Valve team line out valves. Crane PU lube and PCE. Swing over and stab 1407.
19:04	0.05	FRAC	FWL			0		Send boost and pressure test. Low 1000 psi, High 8000 psi. TEST GOOD. Bleed back and equaize.
19:07	1.25	FRAC	FWL			0		Valve team open UMV @ 4900 psi. Start WL perf 1407H Stage 28. WL Start perf Stage 28 Tie into liner top at 11122 ft Initial WHP 4900 psi Pumpdown Pressures

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								3 bpm 4000 psi 6 bpm 4200 psi 9 bpm 4500 psi 10 bpm 6446 Max Pressure 6669 psi Total Fluid to recover 87 bbls Plug set @ 15598 ft Boss Hog Composite Frac Plug (BIP) Plug OD 3.65 in Pre-set Tension 1880 lbs Post-set Tension 1520 lbs Pre-Perf Pressure 5135 psi Perforation Summary: (4 count) 1' Keane Guns: 2.75" OD HSC at 6 spf @ 60 deg phasing 15574' - 15575' 6 shots 15529' - 15530' 6 shots 15483' - 15484' 6 shots 15440' - 15441' 6 shots Post-Perf Pressure 5330 psi
20:22	0.60	FRAC	FWL			0		WL POOH
20:58	0.12	FRAC	FWL			0		WL @ 6300 ft. Fire on frac. Secure WL and muster.
Total	21.08							