

EP WELLS DAILY OPERATIONS REPORT

Report 17

06/04/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1503H
Wellbore	UNIVERSITY 19 PW UNIT 1503H
WBS No/API No	30265013 / 4230133170

Event Summary

Event Type	Completion only	Event Start Date	04/28/2017	Days on Location	16.00
Objective	Install Completion	Original Spud Date	01/29/2017		
Est. Days	25.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

Well Status

Supervisor	Nick Morrison	Measured Depth(ft)	
Engineer	Justin Midgley	TVD(ft)	
Other Supervisor	Tommy Hurdle	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,761.85 / 2,736.20	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	1,370,161/4,184,415.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.33	LOT/FIT EMW(ppg)	
Daily Cost	222,461	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)	6

Safety Comments:

Total People - 96
Total Hours Worked - 1207
Total Hours driven - 200

Gaol Zero Day 10

Drills

Drill Category	Drill Type	Detection (sec)	Complete (sec)	Crew drilled	Pass / Fail	PIC	Comments
HSE Drills	Man-down Drill	243.00	420.00	Day	Pass	Nick Morrison	
HSE Drills	Man-down Drill	255.00	395.00	Night	Pass	Tommy Hurdle	

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	15

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Operations Summary

24 Hour Summary
Perf & Frac Stg 13, 14, 15. Perf Stg 16
Update Since Report Time
24 Hour Forecast
Continue Frac Ops

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	1.65	FRAC	FRT			0		Stage 13 Summary University 19 PW Unit 1503H Interval 17166 - 17301 Open Well Pressure 4,163 psi Max Treating Pressure 9,281 psi Max Slurry Rate 60.4 bpm Average Treating Pressure 8,886 psi Average Slurry Rate 52.0 bpm Breakdown Pressure 5,768 psi Breakdown Rate 10.0 bpm Breakdown Volume 18,984 gal Avg HHP 11,325 hp Final ISIP 5,171 psi Frac Gradient 0.881 psi/ft Pad Volume 19,824 gal Main Body Volume 198,450 gal Flush Volume 34,398 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 416,220 lbs Proppant in Formation 416,220 lbs Avg Proppant Concentration 2.90 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,725 bbls Load to Recover w/o Acid 4,713 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,633 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 137 bbls pump down rate 12.1 bpm Max pump down pressure 6,204 psi Fluid Temp 72.0 ?F Total Pump Time 1:54 hr:min Pumps Lost During Job 0 Treatment Start Time 23:45 0:00 0:00 Treatment End Time 1:39 0:00 0:00 Diverter Slurry bbls Ramp schedule from 0.5-3.0 PPA. All proppant placed.
1:39	0.02	FRAC	FRT			0		SIW @ 5075 psi. Bleed off pressure and HO to WL
1:40	0.25	FRAC	FWL			0		Other Well Ops
1:55	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 4700 psi
2:15	0.92	FRAC	WLT			0		"Stage #14 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 @10950. Bring on pumps at 11300'. Pump down as follows: 3bpm @ 4300psi @11300 6bpm @ 4700psi @11400 9bpm @ 4950psi @11500 12bpm w/ 5330psi @11700 12bpm w/ 6250psi @ Set plug @ 17143ft - Move Up 3' Perforate as follows: 17122' - 17123' 17077' - 17078' 17033' - 17034' 16988' - 16989' Stabilized pressure after perf: 4475psi Pump down volume: 161bbl"
3:10	0.67	FRAC	WLT			0		POOH to 200'
3:50	0.97	FRAC	OPO			0		Wait at 200' for frac to finish

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
4:48	0.47	FRAC	WLF			0		Bump up and SIW @ 4630. Bled off pressure and break lubricator. 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. Move WL BOP's to next well. Greased UMW & Wing valve - grease time 10 min.
5:16	0.37	FRAC	FRP			0		Prime up pump trucks. Equalize and open well @ 4700
5:38	1.90	FRAC	FRT			0		<p>Stage 14 Summary University 19 PW Unit 1503H</p> <p>Interval 16988 - 17123</p> <p>Open Well Pressure 4,339 psi</p> <p>Max Treating Pressure 9,355 psi</p> <p>Max Slurry Rate 60.8 bpm</p> <p>Average Treating Pressure 8,858 psi</p> <p>Average Slurry Rate 53.3 bpm</p> <p>Breakdown Pressure 4,960 psi</p> <p>Breakdown Rate 10.0 bpm</p> <p>Breakdown Volume 18,942 gal</p> <p>Avg HHP 11,572 hp</p> <p>Final ISIP 5,312 psi</p> <p>Frac Gradient 0.893 psi/ft</p> <p>Pad Volume 22,260 gal</p> <p>Main Body Volume 196,392 gal</p> <p>Flush Volume 34,440 gal</p> <p>30/50 AZ Sand Pumped 0 lbs</p> <p>100 Mesh Sand Pumped 401,360 lbs</p> <p>Proppant in Formation 401,360 lbs</p> <p>Avg Proppant Concentration 2.89 lb/gal</p> <p>Max Proppant Concentration 4.00 lb/gal</p> <p>Load to Recover 4,676 bbls</p> <p>Load to Recover w/o Acid 4,664 bbls</p> <p>15% HCL Spearhead 504 gal</p> <p>Slickwater Fluid Pumped 4,584 bbls</p> <p>20# Linear Fluid Pumped 80 bbls</p> <p>20# Crosslink Fluid Pumped 0 bbls</p> <p>Pump down volume 161 bbls</p> <p>pump down rate 12.4 bpm</p> <p>Max pump down pressure 6,250 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 5:39 0:00 0:00</p> <p>Treatment End Time 7:32 0:00 0:00</p> <p>Diverter Slurry bbls</p> <p>Ramp schedule from 0.5-3.0 PPA. All proppant placed.</p>
7:32	0.33	FRAC	FWL			0		Wait on other pad operations
7:52	0.32	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 8000 psi</p> <p>Open well with 4400 psi. RIH.</p>
8:11	1.03	FRAC	WLT			0		<p>"Stage #15 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 @ . Bring on pumps at 11300'.</p> <p>Pump down as follows:</p> <p>3 bpm @ 4700 psi</p> <p>6 bpm @ 4900 psi</p> <p>9 bpm @ 5200 psi</p> <p>12 bpm @ 5600 psi</p> <p>Max:12.1 bpm. Max: psi</p> <p>Set plug @ 16968 ft</p> <p>Perforate as follows:</p> <p>16944' - 16945'</p> <p>16899' - 16900'</p> <p>16855' - 16856'</p>

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								16811' - 16812' Stabilized pressure after perforating: 4570 psi Pump down volume: 143 bbl"
9:13	0.72	FRAC	WLT			0		POOH
9:56	0.70	FRAC	OPO			0		Wait at 200 ft for frac
10:38	0.13	FRAC	WLF			0		Bump up Shut in well with 4206 psi Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
10:46	0.48	FRAC	WLF			0		Other pad operations
11:15	1.97	FRAC	FRT			0		Stage 15 Summary University 19 PW Unit 1503H Interval 16810 - 16945 Open Well Pressure 4,344 psi Max Treating Pressure 9,260 psi Max Slurry Rate 58.9 bpm Average Treating Pressure 8,821 psi Average Slurry Rate 50.5 bpm Breakdown Pressure 5,777 psi Breakdown Rate 10.0 bpm Breakdown Volume 19,320 gal Avg HHP 10,918 hp Final ISIP 5,284 psi Frac Gradient 0.890 psi/ft Pad Volume 19,446 gal Main Body Volume 199,794 gal Flush Volume 34,818 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 413,380 lbs Proppant in Formation 413,380 lbs Avg Proppant Concentration 2.87 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,757 bbls Load to Recover w/o Acid 4,745 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,665 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 143 bbls pump down rate 12.2 bpm Max pump down pressure 6,100 psi Fluid Temp 72.0 ?F Total Pump Time 1:57 hr:min Pumps Lost During Job 0 Treatment Start Time 11:15 0:00 0:00 Treatment End Time 13:12 0:00 0:00 Diverter Slurry bbls Ramp schedule from 0.5-3.0 PPA. All proppant placed.
13:13	0.42	FRAC	FWL			0		Other pad operations
13:38	1.03	FRAC	SAF			0		Muster drill, all personal accounted for in 7 min. Recognition lunch for crew for start up operations
14:40	1.50	FRAC	FWL			0		Re-head WL change out grease tubes, grease valves. Pump maintenance. prime up pressure test frac lines.
16:10	1.00	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 9000 psi Open well with 4235 psi. RIH.
17:10	1.17	FRAC	WLT			0		"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 @ . Bring on pumps at 11251'. Pump down as follows: 3 bpm @ 4550 psi

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Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								6 bpm @ 4800 psi 9 bpm @ 5120 psi 12 bpm @ 5720 psi Max:12.1 bpm. Max: 6250 psi Set plug @ 16790 ft Perforate as follows: 16768' - 16769' 16720' - 16721' 16675' - 16676' 16632' - 16633' Stabilized pressure after perforating: 4395 psi Pump down volume: 149 bbl"
18:20	0.60	FRAC	WLT			0		POOH
18:56	0.62	FRAC	WLT			0		Wait at 200' for frac
19:33	0.45	FRAC	WLF			0		Bump up and SIW @ 4310. Bled off pressure and break lubricator. 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. Move WL BOP's to next well. Greased UMV & LMV valve - grease time 8 min.
20:00	0.33	FRAC	WLF			0		Other Pad Ops
20:20	0.17	FRAC	SSD			0		***Held Man Down Drill. Muster to 2nd muster point.*** Total to for drill 6 minutes and 35 seconds. Held discussion with crew to review.
20:30	1.00	FRAC	SSD			0		Shutdown operations to hold recognition lunch for night crew on good start up.
21:30	0.28	FRAC	FRP			0		Prime up pump trucks. Open well @ 4305
21:47	1.47	FRAC	FRT			0		Starting pumping Stage 16 Frac
23:15	0.75	FRAC	FRT			0		***NPT LIGHTNING** Total Time 45 Minutes ***END NPT***
Total	24.00							

06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	0.42	FRAC	FRP			0	Changed out o-ring on the 1503H manifold. Prime up pump trucks and pressure test to 9800 psi. Test good. Equalize and open well at 4350 psi.
0:25	1.20	FRAC	FRT			0	Stage 16 Summary University 19 PW Unit 1503H Interval 16632 - 16767 Open Well Pressure 4,305 psi Max Treating Pressure 9,254 psi Max Slurry Rate 60.5 bpm Average Treating Pressure 8,580 psi Average Slurry Rate 57.0 bpm Breakdown Pressure 5,794 psi Breakdown Rate 10.0 bpm Breakdown Volume #VALUE! gal Avg HHP 11,987 hp Final ISIP 5,179 psi Frac Gradient 0.881 psi/ft Pad Volume 32,592 gal Main Body Volume 243,012 gal Flush Volume 35,364 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 410,240 lbs Proppant in Formation 410,240 lbs Avg Proppant Concentration 2.76 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 5,786 bbls Load to Recover w/o Acid 5,774 bbls

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06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							15% HCL Spearhead 504 gal Slickwater Fluid Pumped 5,694 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 149 bbls pump down rate 12.1 bpm Max pump down pressure 6,250 psi Fluid Temp 72.0 ?F Total Pump Time 2:25 hr:min Pumps Lost During Job 0 Treatment Start Time 21:47 22:35 0:25 Treatment End Time 22:26 23:15 1:31 Diverter Slurry bbls Ramp schedule from 0.5-3.0 PPA. All proppant placed. We did not observe the ball seat, so we shut down when acid reached perfs to make a decision on how to proceed. Opening pressure was 4305 psi and when we shut down to make a decision, the pressure was 5405 psi. OSR decided to continue on with the stage. During 3.5# stage, the decision was made to cut sand and flush the well in order to shut down for lightening. While equalizing to resume the stage, a small leak was noticed on the zipper manifold. The leak was fixed and we pressure tested before opening the well back up. After resuming, we stepped sand up in 0.5# increments until we reached 4# sand.
1:37	0.02	FRAC	FWL			0	SIW @ 4938 psi. Bleed off pressure and HO to WL
1:38	0.10	FRAC	FWL			0	Other Well Ops
1:44	0.35	FRAC	FWL			0	Pick up lubricator. Remove night cap. PU guns/plug. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 4700 psi.
2:05	0.92	FRAC	WLT			0	"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 frac plug. Tie into liner top @10950. Bring on pumps at 11200'. Pump down as follows: 3bpm @ 4476psi @11200 6bpm @ 4570psi @11250 9bpm @ 4877psi @11350 12bpm w/ 5255psi @11450 Max Rate 12bpm w/ 5785psi Set plug @ 16612ft Perforate as follows: 16588' - 16589' 16543' - 16544' 16499' - 16500' 16454' - 16455' Stabilized pressure after perf: 4485psi Pump down volume: 120bbl"
3:00	0.58	FRAC	WLT			0	POOH to 200'
3:35		FRAC	OPO			0	Wait at 200' for frac to finish

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
06/04/2017 23:15	SHELL	Wait On Weather		FRT	N		0.75	0.75		OPEN
Description: Lightning						Title: WOW				
Total							0.75	0.75		