

## EP WELLS DAILY OPERATIONS REPORT

Report 36

07/16/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1504H
Wellbore	UNIVERSITY 19 PW UNIT 1504H
WBS No/API No	30265014 / 4230133171.00

## Event Summary

Event Type	Completion only	Event Start Date	04/28/2017	Days on Location	35.00
Objective	Install Completion	Original Spud Date	02/02/2017		
Est. Days	25.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

## Well Status

Supervisor	Bruce Smiley, Jeff Pontell	Measured Depth(ft)	
Engineer	Joddie Carlile	TVD(ft)	
Other Supervisor	Mike Reber	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,761.75 / 2,736.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	24.00/100.00	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	1,801,288/4,757,442.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	0.38	LOT/FIT EMW(ppg)	
Daily Cost	88,485	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 <b>GOAL ZERO DAYS</b> <b>PS BARRIER EVENT</b> <b>PS barrier bowtie review</b>			TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)	
Safety Comments:							
312 man hours							
46 drive hours							

## 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	34

## Operations Summary

24 Hour Summary
RIH tag TOF at 19543', burn over x4, POOH, BD BHA #5, wait on hip tripper, MU BHA #6 3.75" 2.75 spiral grapple, RIH engage fish at 19,544', POOH weighing heavy 54K
Update Since Report Time
Continue POOH with BHA #6
24 Hour Forecast
Bump up, BD tools and retrieve fish, evaluate fish recovery, establish injection rate with clean water from frac tanks, evaluate, RD CT package

## EP WELLS DAILY OPERATIONS REPORT

Report 36

07/16/2017

Well UNIVERSITY 19 PW UNIT 1504H  
Wellbore UNIVERSITY 19 PW UNIT 1504H

## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	1.92	WOR	OPO			1		<p>00:20 17,500' current depth, RIH 19.2K, .6 bpm / 3,980 CP / 3,826 WH, 51 ft/min</p> <p>00:57 Weight check 19,300', PU 47.1K (1,440 psi hyd), .6 bpm / 3,980 CP / 3,815 WH - SD / set baseline pump rates in preparation for wash over ops as follows .6 / 3,947 psi CP 1.0 / 4,080 psi CP 2.0 / 4,955 psi CP 3.0 / 6,250 psi CP</p> <p>01:00 Reduce rate to 2.0 bpm / 5,110 psi CP, RIH 14.6K - 15.1K / RIH at 10 ft/min - Set trips to 6,500 psi</p> <p>01:17 19,540' current depth, RIH weight 13.3K to 13.8K, 5,055 psi CP, 2.0 bpm</p> <p>FIRST TAG AND WASHOVER</p> <p>01:18 TAG fish at 19,543' / Pressure increased from 5,055 psi CP to 5,275 psi CP - Set 1,500# down, 5,154 psi max CP (motor differential 100 psi) - WOS (shoe) varied while washing down to stop from 13.9K to 16.0K</p> <p>01:45 Soft tag at 19,557', psi increased from 5,121 psi to 5,340 psi, 13.8K, 2200# down - Expected tag at the 2.625" stop 1.8' inside the top extension was 19,558'</p> <p>01:55 POOH to 19,480', PU 46.9K to 47.5K, 2.0 bpm / 5,033 ps CP</p> <p>NOTE / SUMMARY: 1st washover indicated top of fish at 19,543' by 220 psi motor differential, fish should tag at 2.625" stop at 19,558' it tagged at 19,557' at this point pressure increased to 5,340 psi, 13.8K with 2,200# down, after PU off fish the 5,340 psi pressure dumped at 19,547' as the washpipe started coming off the 2.75" OD of the guns</p>
1:55	0.58	WOR	OPO			1		<p>SECOND TAG AND WASHOVER</p> <p>02:02 RIH from 19,480', RIH weight 11.3K to 12.7K / 10 ftm / 2.0 bpm / 5,000 psi CP - slow to 5 ft/min / 13.0K to 13.6K weight</p> <p>02:12 Tag, very minimal indication of top of fish at 19,543', pressure increased from 5,066 psi to 5,088 psi, RIH weight 13.6K to 14.0K - soft tag at same place, 19,557', pressure increased from 5,099 psi to 5,308 psi - string weight 12,293K with 1,700# WOS (shoe) - stack 500# more down, 2,200# total, no weight back - FLAG at 19,557' on 2-3/8" CT with orange paint, what appears to be 15.7' of fish swallowed</p> <p>02:23 POOH to 19,450', pressure at 5,329 psi CP, PU 48K (1,550 psi hydraulic psi / 30.1) - after PU to 19,550', pressure dropped to 5,225 psi CP - after PU to 19,545', pressure dropped to 5,055 psi CP as burn shoe pulled of TOF</p> <p>NOTE / SUMMARY: 2nd washover had very subtle indication of fish at 19,543' with 20 psi increase in CP, no obvious signature as fish was washed over by weight, fish tagged the 2.625" stop that is</p>

## EP WELLS DAILY OPERATIONS REPORT

Report 36

07/16/2017

Well UNIVERSITY 19 PW UNIT 1504H  
Wellbore UNIVERSITY 19 PW UNIT 1504H

## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								15.7' from the bottom of the burn shoe at 19,557', exact same place, as the BHA #5 was POOH, the pressure decreased 274 psi as predicted when the burn shoe pulled off the fish.
2:30	0.92	WOR	OPO			1		<p>THIRD TAG AND WASHOVER</p> <p>Reduce rate from 2.0 bpm to .75 bpm, RIH weight 12.6K to 13.4K, 4,024 psi CP / 3,750 psi WH, RIH at 11 ft/min</p> <p>02:41 Reduce RIH speed to 5 ft/min, .75 bpm / 4,090 psi CP, RIH weight 13.5K to 13.9K</p> <p>02:44 SD at 19,543', no strong indication of TOF, FLAG pipe at 19,543' with red paint, continue RIH with .75 bpm / 4,124 psi CP / 3,782 psi WH, RIH weight 12.9K to 13.5K</p> <p>02:47 Tag, as expected, at 19,557', 11.8K, 1,200# down, pressure increased to 4,365 psi. - as previously seen, as POOH and off fish, pressure dropped down in stages to 4,068', 297 psi decrease, PU weight 48.4K (1,510 psi hydraulic 30.1# / psi)</p> <p>03:19 POOH to 19,318' (POOH higher than normal as STEP supervisor and STEP engineer reviewed cycle points), PU 49K, .75 bpm / 4,000 psi CP / 3,700 psi WH</p> <p>NOTE / SUMMARY: 3rd washover very similiar to 2nd, no clear indication of TOF, fish tagged at 19,557' at 2.625' ID stop for third time, as BHA #5 pulled off fish, pressure dropped off as expected and as the previous 3 times, PU 48.4K</p>
3:25	0.33	WOR	OPO			1		<p>FOURTH TAG AND WASHOVER</p> <p>Increase rate to 2.5 bpm / RIH weight 14.4K to 15.1K / 5,549 psi CP / 3,926 psi WH, slow to 5 ft/min, at 19,543' no pressure signal or weight increase,</p> <p>03:37 Tag TOF on 2.625" stop at 19,557' (fourth tag at this depth, as expected), pressure increased from 5,670 psi to 5,812' at 19,557', pressure decreased as POOH and BHA #5 pulled off TOF at 19,543'</p> <p>NOTE / SUMMARY: 4th washover very similiar to previous 3, no clear indication of TOF, fish tagged at 19,557' at 2.625' ID stop for fourth time, as BHA #5 pulled off fish, pressure dropped off as expected and as the previous 3 times.</p> <p>03:45 POOH from 19,557' PU weight 48.7K, reduce rate to .6 bpm, POOH at 50 ft/min</p>
3:45	3.25	WOR	OPO			1		<p>05:00 16,750' current depth, PU 46K, .75 bpm / 4,000 psi CP / 3,700 psi WH, 50 ft/min</p> <p>06:45 11,550' approximate depth, PU 43K, .75 bpm / 3,900 psi CP / 3,600 psi WH, 30 ft/min through curve</p>
7:00	2.42	WOR	OPO			1		<p>POOH 95 ft/min except in curve at 30 ft/min, at following depths:</p> <ul style="list-style-type: none"> <li>- 12200 ft CTM, 42k lbf, Circ P 3900 psi, WHP 3800 psi, .75 bbl/min</li> <li>- 11200 ft CTM, 40k lbf, Circ P 3900 psi, WHP 3800 psi, .75 bbl/min</li> <li>- 8700 ft CTM, 28k lbf, Circ P 4000 psi, WHP 3900 psi, .75 bbl/min</li> <li>- 6000 ft CTM, 15k lbf, Circ P 3900 psi, WHP 3800 psi, .75 bbl/min</li> <li>- 3000 ft CTM, 4k lbf, Circ P 3800 psi, WHP 3800 psi, .75 bbl/min</li> <li>- 2000 ft CTM, 0k lbf, Circ P 4100 psi, WHP 3900 psi, .75 bbl/min</li> </ul>
9:25	1.08	WOR	OPO			1		<p>Bump up, shut in, bleed off stack. ND bottom lubricator section from quad BOPs, swing over and break down tools. All tattle tails in washpipe extensions gone, top 5" section of rope socket broken off and in venturi basket (appear to have backed off threads). Wear on outside of washover extensions. Prep to MU next toolstring.</p>
10:30	0.73	WOR	OPO			1		<p>Measure and drift all tools, MU BHA #5 as follows:</p>

## EP WELLS DAILY OPERATIONS REPORT

Report 36

07/16/2017

Well UNIVERSITY 19 PW UNIT 1504H  
Wellbore UNIVERSITY 19 PW UNIT 1504H

## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								<p>Tool OD (") L (") ID (")</p> <p>Slip type connector 3.125 .96 1-3/8</p> <p>Dual BPV sub 2.875 1.42 N/A</p> <p>Accelerator 2.89 5.89 15/16</p> <p>Bidirectional jars 2.89 5.61 15/16</p> <p>Hydraulic disconnect 2.88 2.13 11/16</p> <p>Agitator 2.876 4.31 N/A</p> <p>Mechanical indexing tool 2.875 3.03 .9</p> <p>Crossover 3.076 1.09 1.375</p> <p>Overshot top sub 3.75 1.95 1.5</p> <p>Overshot extension #1 3.75 2.97 2.875</p> <p>Overshot extension #2 3.75 3.01 2.92</p> <p>Overshot extension #3 3.75 2.99 2.875</p> <p>Short catch overshot bowl 3.75 1.03 2.75</p> <p>Cutlip guide 3.75 0.16 3.122</p> <p>TOTAL BHA LENGTH 36.55'</p> <p>Note: bottom of grapple approx 3-4" from bottom of bowl.</p> <p>*** NOTE: MECHANICAL ORIENTER/INDEXING TOOL FAILED FUNCTION TEST. BACKUP MECHANICAL ORIENTER/INDEXING TOOL FAILED. DECIDE TO WAIT FOR BACKUP HIP TRIPPER (ON WAY FROM SOUTH LOUISIANA) INSTEAD OF RIH WITHOUT ROTATIONAL/ORIENTING CAPABILITY TO ATTEMPT TO PASS LT. ETA OF HIP TRIPPER IS APPROX 1630. HIP TRIPPER WAS MOBILIZED FROM BROUSSARD, LOUISIANA YESTERDAY AFTERNOON***</p>
11:14	6.52	WOR	OPO			1		Wait on delivery of hip tripper.
17:45	0.73	WOR	OPO			1		<p>Hip tripper AOL. Measure and drift all tools, MU revised BHA #5 as follows:</p> <p>Tool OD (") L (") ID (")</p> <p>Slip type connector 3.125 .96 1-3/8</p> <p>Dual BPV sub 2.875 1.42 N/A</p> <p>Accelerator 2.89 5.89 15/16</p> <p>Bidirectional jars 2.89 5.61 15/16</p> <p>Hydraulic disconnect 2.88 2.13 11/16</p> <p>Agitator 2.876 4.31 N/A</p> <p>Hip tripper 2.875 4.4 N/A</p> <p>AV sub 2.87 1.09 1</p> <p>Crossover 3.076 1.09 1.375</p> <p>Overshot top sub 3.75 1.95 1.5</p> <p>Overshot extension #1 3.75 2.97 2.875</p> <p>Overshot extension #2 3.75 3.01 2.92</p> <p>Overshot extension #3 3.75 2.99 2.875</p> <p>Overshot bowl w/ cutlip guide 3.75 .6 3.105</p> <p>Function test hip tripper, good test.</p> <p>TOTAL BHA LENGTH 38.42'</p>
18:29	0.52	WOR	OPO			1		Swing lubricator and tools to well, NU lubricator to quad BOPs, prepare to break circulation and pressure test.
19:00	5.00	WOR	OPO			1		<p>Open well</p> <p>Assemble valve team, 9 questions for safe lift, walk lines, roll pumps and break circulation to gas buster, close in choke manifold, pressure test 500 psi / low / 5 min, 8,000 psi / high / 10 min, good test, bleed to 3,800 psi, open (2) 7-1/16" 10K FV each 31 turns and confirm, RIH</p> <p>20:56 Weight check 6,000', PU 20K, RIH weight 3,000# / .75 bpm / 3,900 psi CP / 3,650 psi WH</p> <p>21:54 Weight check 10,600', PU 40K (1,250 psi hyd pressure), .75 bpm / 3,850 psi CP / 3,600 psi WH</p>

## EP WELLS DAILY OPERATIONS REPORT

Report 36

07/16/2017

Well UNIVERSITY 19 PW UNIT 1504H  
Wellbore UNIVERSITY 19 PW UNIT 1504H

## Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								22:06 Slow down at liner top 10,881 to 20 ft/m, no tag, continue RIH
								23:00 Weight check 13,000' / PU 46K (1,380 psi hyd), .75 bpm / 3,850 CP / 3,800 WH
								23:55 Weight check 16,000' / PU 48K / RIH 22K / .7 bpm / 3,900 CP / 3,800 WH
<b>Total</b>	<b>24.00</b>							

## 06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
0:00	1.92	WOR	OPO			1	<p>1ST TIME WASHOVER WITH 3.75" OVERSHOT</p> <p>Continue RIH to TOF</p> <ul style="list-style-type: none"> <li>- 17,000' / RIH weight 19.3K to 20K</li> <li>- 17,500' / RIH weight 18.9K to 20.2K</li> <li>- 18,000' / RIH weight 17.4K to 18.6K</li> <li>- 18,750' / RIH weight 15.8K to 17K</li> </ul> <p>01:07 Weight check 19,000' / PU 51.1K (1,570 psi hyd) / .8 bpm / 3,947 CP / 3,800 WH - set baseline pump rates / 1 bpm - 4,232 psi / 1.5 bpm</p> <ul style="list-style-type: none"> <li>- 4,748 psi / 2 bpm - 5,373 psi</li> <li>- set trips 5,500 psi</li> </ul> <p>Continue RIH to TOF</p> <ul style="list-style-type: none"> <li>-19,125' / RIH weight 15.2K to 16.0K</li> <li>-19,175' / RIH weight 14.7K to 14.9K</li> <li>-19,300' / RIH weight 14.4K to 15.6K</li> <li>-19,425' / RIH weight 12.2 to 13.8K</li> <li>-19,530' / RIH weight 11.3K to 12.4K</li> </ul> <p>01:36 19,543' / RIH weight 7,600# / pump pressure increased from 4,300 psi to 4,900 psi while pumping 1.0 bpm</p> <p>01:37 TAG FISH at 19,544', RIH weight dropped from 8,600K to 6,500K, start wash over fish working weight to 5,000# then recovering weight to 8,600#, RIH speeds during initial washover vary from low of .1 ft/min to 1.0 ft/min</p> <ul style="list-style-type: none"> <li>- Hlpp Tripper working well in first 2 feet, with pressure increasing at 1.0 bpm from 4,320 psi to 4,600 psi, Hipp Tripper hitting x6, very good action</li> </ul> <p>01:54 TAG AT TOP OF EXTENSIONS at 19,553', Shut down pump, stack 5,000# and recover weight back to 7,756#, slack off 2,000# additional to 6,000# and are not recovering any weight back at 19,553.5</p> <p>01:55 POOH off bottom at 12 ft/min, OVERPULL to 59K (8K overpull) then weight fell off to 51K, continue POOH with 1,600 psi hydraulic pressure to 19,500', with POOH weight varying between 50.7K to 52.5K</p>
1:55	0.45	WOR	OPO			1	<p>2ND TIME WASHOVER WITH 3.75" OVERSHOT</p> <p>Bring pump on at 1.0 bpm / 4,276 psi CP / 3,800 psi WH, RIH from 19,500' at 15 ft/min, RIH weight 13.4K</p> <p>02:07 TAG at 19,551' with 5,000#, stack 3,000# additional, and SD pump, recover weight to 6,336# with no more weight recovery, continue slack off to 0# with final depth 19,555', recovering weight back to 513#, no additional recovery.</p> <p>02:12 POOH from 19,555' at 15 ft/min to 19,495', Pulled heavy at 55.4 max (1,710 psi hyd pressure),</p> <ul style="list-style-type: none"> <li>- Continue POOH 19,498# / 54.3K max / 1,703 psi hydraulic pressure, RIH with weights as follows</li> </ul>

## EP WELLS DAILY OPERATIONS REPORT

Report 36

07/16/2017

Well UNIVERSITY 19 PW UNIT 1504H  
Wellbore UNIVERSITY 19 PW UNIT 1504H

## 06.00 Update

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Description
							19,500' / 11.8K 19,525' / 7.2K to 10.7K 19,544' / 10.8 to 12.4K
2:22	0.13	WOR	OPO			1	3RD TIME WASHOVER WITH 3.75" OVERSHOT  Bring pump on at 1.0 bpm / 4,386 psi CP / 3,800 psi WH, TAG at 19,555' with 300# (10K down)  02:25 POOH, weight increased to 58K then dropped off to 54K, hydraulic pressure 1,730 psi, POOH weight is higher than ever been in this well, typical POOH weight is 49K - Continue POOH with 55.2K max (1,730 psi hyd pressure) at 18 ft/min  02:27 19,495' current depth, .7 bpm / 4,000 CP / 3,800 WH, POOH weight dropped from 54.0K to 52.0K with 1,717 hyd pressure, 2.75" grapple definitely appears to be dragging all or part of fish
2:30		WOR	OPO			1	POOH with BHA #6, 3.75" overshot with 2.75" spiral grapple, average POOH weights between 19,000' and 19,400' are 52.5K with 57.4K max at 19,045' (500' off bottom)  02:40 19,180' to 19,400' / Average POOH weights 52.6K with 53.3K max / 1,745 hyd psi 02:45 19,000' to 19,180' / Average POOH weights 53.8K with 57.4K max / 1,747 hyd psi 02:48 18,978' / POOH weight 55.5K / 1,745 hyd psi  04:30 16,280' current depth / POOH weight 48K to 49K / POOH at 30 ft/min