

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Launer 11 Production

Job Date: Tuesday, November 21, 2017

Sincerely,

Ryan Keeran

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Launer 11** cement production casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

50bbls of cement circulated to surface

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton Fort Lupton

The Road to Excellence Starts with Safety

Sold To #: 369404		Ship To #: 3818113		Quote #:		Sales Order #: 0904448351				
Customer: EXTRACTION OIL & GAS				Customer Rep: .						
Well Name: LAUNER			Well #: 11		API/UWI #: 05-123-45180-00					
Field: WATTENBERG		City (SAP): WINDSOR		County/Parish: WELD		State: COLORADO				
Legal Description: SE SE-26-7N-67W-676FSL-428FEL										
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 346						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Jordan Larue						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		14686ft		Job Depth TVD		7075				
Water Depth				Wk Ht Above Floor		4FT				
Perforation Depth (MD)		From		To						
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing	0	9.625	8.921	36		J-55	0	1557	0	1557
Casing	0	5.5	4.778	20		P-110	0	14682	0	7075
Open Hole Section			8.5				1557	14686	1557	7075
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			14808		Top Plug	5.5		HES	
Float Shoe	5.5					Bottom Plug	5.5		HES	
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.73		8		
149.34 lbm/bbl		BARITE, BULK (100003681)								
35 gal/bbl		FRESH WATER								

0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)							
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem	ELASTICEM (TM) SYSTEM	2355	sack	13.2	1.57		8	7.53
0.35 %		SCR-100 (100003749)							
7.50 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	325	bbl	8.34			9	
Cement Left In Pipe		Amount	5 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		400 ppm		Mix Water Temperature:		62 °F
Cement Temperature:		## °F °C	Plug Displaced by:		8.33 lb/gal kg/m3 XXXX		Disp. Temperature:		## °F °C
Plug Bumped?		Yes	Bump Pressure:		3000 psi MPa		Floats Held?		Yes 2BBL BACK
Cement Returns:		50 bbl	Returns Density:		13.2 lb/gal		Returns Temperature:		## °F °C
Comment 50 BBLS CMT AND 50 BBLS SPACER BACK									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	11/21/2017	10:30:00	USER				ON LOCATION TIME 1430
Event	2	Arrive At Loc	Arrive at location	11/21/2017	14:00:00	USER				RIG RUNNING CASING
Event	3	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	11/21/2017	14:15:00	USER				RIG RUNNING CASING
Event	4	Other	Water Test	11/21/2017	14:30:00	USER				ph 7, cl <200, temp 61°F, TANN PASS... RIG KEPT WATER HEATED
Event	5	Other	Well Info	11/21/2017	14:30:00	USER				TD 14686, TVD 7075, TP 14682, ST 5', PC 9.625 36 J55 1557', OH 8.5"
Event	6	Pre-Rig Up Safety Meeting	PRE RIG UP SAFETY MEETING	11/21/2017	14:33:00	USER				JSA COMPLETED- RIG HANDS SIGN JSA ON CEMENTING PROGRAM
Event	7	Rig-Up Equipment	RIG UP EQUIPMENT	11/21/2017	14:45:00	USER				NO ACCIDENTS OR INJURIES
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	11/21/2017	17:10:00	USER	0.00	8.03	0.00	JSA COMPLETED: ALL PERSONNEL SIGNED SIGN UP SHEET. REVIEW PUMP SCHEDULE AND WASH UP.
Event	9	Start Job	Start Job	11/21/2017	17:17:00	COM10	9394.00	8.26	0.00	
Event	10	Test Lines	Test Lines	11/21/2017	17:17:39	COM10	9316.00	8.25	0.00	9000 PSI HELD GOOD
Event	11	Pump Spacer 1	Pump Spacer 1	11/21/2017	17:25:20	COM10	149.00	11.51	2.40	50 BBLS SCALED @ 13.2# 8BPM AVG RATE

Event	12	Pump Cement	Pump Cement	11/21/2017	17:37:10	USER	292.00	13.50	4.00	2355 SACKS SCALED @ 13.2#
Event	13	Check Weight	Check Weight	11/21/2017	18:07:32	COM10	447.00	13.32	7.00	CMT MUD SCALED @ 13.2#
Event	14	Clean Lines	Clean Lines	11/21/2017	19:18:26	COM10	9.00	-0.29	0.00	
Event	15	Drop Top Plug	Drop Top Plug	11/21/2017	19:29:45	COM10	3.00	0.84	0.00	3RD PARTY LATCH DOWN STUFFED AND WENT
Event	16	Pump Displacement	Pump Displacement	11/21/2017	19:29:48	COM10	2.00	0.01	0.00	PUMPED 9BPM AVG... 50 BBLS CMT AND 50 BBLS SPACER BACK... BUMPED ON CALC 125.4 BBLS GONE... FINAL CIRC PSI @ 2600... BUMP 3000 PSI... 5BPM... TOOK TO 3700 PSI TO BURST PLUG... PUMPED 5BBL H2O AFTER BURST @ 5BPM 2600 PSI... CHECK FLOATS THEY HELD 2BBLS BACK
Event	17	Pause	BUMP PLUG	11/21/2017	20:05:00	USER	2299.00	7.90	0.00	FINAL CIRC 2600 BUMP TO 3000 PSI
Event	18	Pause	BURST PLUG	11/21/2017	20:07:48	USER	3086.00	7.81	0.00	3700 PSI PLUG BURST LIKE PLANNED
Event	19	Resume	PUMP 5BBL @ 5BPM PSI @ 2600	11/21/2017	20:09:25	USER	2531.00	7.89	5.10	
Event	20	Shutdown	END JOB	11/21/2017	20:13:15	USER	-4.00	7.75	0.00	JOB A SUCCESS
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	11/21/2017	20:15:00	USER	-3.00	7.79	0.00	DISCUSS HAZARDS
Event	22	Rig-Down Equipment	Rig-Down Equipment	11/21/2017	20:20:00	USER	117.00	7.65	2.20	NO ACCIDENTS OR INJURIES
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/21/2017	21:03:28	USER				HAD BULK RETURN TO YARD FOR NEXT HOLE IN

							8HRS
Event	24	Crew Leave Location	Crew Leave Location	11/21/2017	21:03:30	USER	BULK HEADING BACK TO YARD AND PUMP CREW STAYING RIGGED AND STAGED

3.0 Job Chart

3.1 Job Chart

