

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

Date: Monday, December 18, 2017

### **Launer #9 Production**

Job Date: Saturday, November 25, 2017

Sincerely,

**Justin Lansdale**

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Launer #9** 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.

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*

<b>Sold To #:</b> 369404		<b>Ship To #:</b> 3818060		<b>Quote #:</b>		<b>Sales Order #:</b> 0904457274				
<b>Customer:</b> EXTRACTION OIL & GAS				<b>Customer Rep:</b> Shayne Hackford						
<b>Well Name:</b> LAUNER			<b>Well #:</b> 9		<b>API/UWI #:</b> 05-123-45179-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> WINDSOR		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> SE SE-26-7N-67W-722FSL-396FEL										
<b>Contractor:</b> PATTERSON-UTI ENERGY				<b>Rig/Platform Name/Num:</b> PATTERSON 346						
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL OIL										
<b>Sales Person:</b> HALAMERICA\HX38199				<b>Srv Supervisor:</b> Luke Kosakewich						
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>						
<b>Form Type</b>				<b>BHST</b>						
<b>Job depth MD</b>		14538ft		<b>Job Depth TVD</b>		6980ft				
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>						
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>						
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Casing	0	9.625	8.921	36		J-55	0	1576	0	1576
Casing	0	5.5	4.778	20		P-110	0	14527	0	0
Open Hole Section			8.5				1576	14538	1576	6980
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
<b>Guide Shoe</b>						<b>Top Plug</b>	5.5	1	HES	
<b>Float Shoe</b>	5.5			14527		<b>Bottom Plug</b>				
<b>Float Collar</b>	5.5			14522		<b>SSR plug set</b>				
<b>Insert Float</b>						<b>Plug Container</b>	5.5	1	HES	
<b>Stage Tool</b>						<b>Centralizers</b>				
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III W/ Surfactants	50	bbl	11.5	3.73		5		

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		2350	sack	13.2	1.57		8	7.53
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		322.4	bbl	8.34			10	
Cement Left In Pipe		Amount	0ft			Reason			Wet Shoe	
<b>Comment</b> Full returns throughout the job. Got 60 bbls. of cement to surface. Floats held. Got 2 bbls. of fluid back to the truck. Pressured up to 3,900 psi. to burst the plug. Pumped a 5 bbl. wet shoe.										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	11/24/2017	20:00:00	USER	Crew was called out at 20:00 for an on location time of 02:00.
Event	2	Depart Location Safety Meeting	Depart Location Safety Meeting	11/24/2017	23:45:00	USER	Crew held a pre journey safety meeting and JSA.
Event	3	Depart Shop for Location	Depart Shop for Location	11/24/2017	23:50:00	USER	Started journey management with dispatch and left the yard.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	11/25/2017	01:00:00	USER	Crew performed a site assessment and hazard hunt on location. Checked in with the customer and discussed the job procedures, rig up and well bore schematics to calculate the job. The rig was running casing.
Event	5	Other	Other	11/25/2017	01:05:00	USER	Well bore: MD: 14,537.6', TP: 5.5" 20# set at 14,527', FC: 14,522', TVD: 6,980', SC: 9.625" 36# set at 1,565', OH: 8.5", Mud # 9.5, Water test: PH: 7.5, Chlorides: 0, Temp: 48 degrees.
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	11/25/2017	01:15:00	USER	The crew held a pre rig up safety meeting and JSA.
Event	7	Rig-Up Equipment	Rig-Up Equipment	11/25/2017	01:20:00	USER	The crew rigged up all lines, hoses and equipment for the job.
Event	8	Safety Meeting	Safety Meeting	11/25/2017	03:00:00	USER	All personnel on location held a pre job safety meeting and JSA.
Event	9	Start Job	Start Job	11/25/2017	04:06:19	COM4	Pumped 3 bbls. of fresh water to fill lines and establish circulation.
Event	10	Test Lines	Test Lines	11/25/2017	04:10:38	COM4	Pressure tested lines to 4,500 psi. with a 500 psi. electronic kick out test.
Event	11	Pump Spacer 1	Pump Spacer 1	11/25/2017	04:17:59	COM4	Pumped 50 bbls. of Tuned Spacer III with surfactants mixed at 11.5 ppg., Yield: 3.73

							ft3/sks, 23.4 gal/sks. Density was verified by pressurized scales.
Event	12	Pump Lead Cement	Pump Lead Cement	11/25/2017	04:30:29	COM4	Pumped 657 bbls. (2350 sks.) of Elasticem mixed at 13.2 ppg., Yield: 1.57 ft3/sks, 7.53 gal/sks. Density was verified by pressurized scales.
Event	13	Check Weight	Check weight	11/25/2017	04:32:46	COM4	Cement wieght up at 13.2 ppg.
Event	14	Shutdown	Shutdown	11/25/2017	06:05:57	COM4	Shutdown and the rig blew the iron down to the wash up pit.
Event	15	Clean Lines	Clean Lines	11/25/2017	06:13:26	COM4	Washed pumps and lines until clean.
Event	16	Drop Top Plug	Drop Top Plug	11/25/2017	06:17:53	COM4	Dropped the top plug, which was witnessed by the customer.
Event	17	Pump Displacement	Pump Displacement	11/25/2017	06:21:51	COM4	Pumped 322.4 bbls. of fresh water for displacement.
Event	18	Bump Plug	Bump Plug	11/25/2017	07:01:48	COM4	Bumped the plug 500 psi. over 2,650 psi. at 5 bpm. Finale pressure was 3,150 psi. Held pressure for 5 minutes . Got 60 bbls. of cement to surface.
Event	19	Pressure Up Well	Pressure Up Well	11/25/2017	07:03:07	COM4	Pressuerd up the well to 3,900 to burst the plug. Pumped 5 bbls.at 5 bpm. for a wet shoe.
Event	20	Other	Other	11/25/2017	07:05:12	COM4	Bled off pressuer to check floats. Floats held. Got 2 bbls. of fluid back to the truck.
Event	21	End Job	End Job	11/25/2017	07:07:05	COM4	Washed pumps and lines until clean.
Event	22	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	11/25/2017	07:10:00	USER	Halliburton cement crew held a pre rig down safety meeting and JSA.
Event	23	Rig-Down Equipment	Rig-Down Equipment	11/25/2017	07:15:00	USER	Rigged down all lines, hoses and equipment.
Event	24	Depart Location Safety Meeting	Depart Location Safety Meeting	11/25/2017	08:45:00	USER	Held a pre journey safety meeting with the crew.
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	11/25/2017	09:00:00	USER	Started journey management with dispatch and left location.





## 3.0 Attachments

### 3.1 Job Chart



