

# HALLIBURTON

iCem<sup>®</sup> Service

**EXTRACTION OIL & GAS**

**Livingston S20-25-4N Surface**

Sincerely,  
**Meghan Jacobs**

## Legal Notice

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Table of Contents

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1.0    Cementing Job Summary ..... 4

      1.1    Executive Summary .....4

2.0    Real-Time Job Summary ..... 7

      2.1    Job Event Log .....7

3.0    Attachments..... 9

      3.1    Livingston S20-25-4N Surface – Job Chart.....9

## 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 **Livingston S20-25-4N** cement **Surface** 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.

**Approximately 17 bbls of cement were returned 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*

<b>Sold To #:</b> 369404		<b>Ship To #:</b> 3904664		<b>Quote #:</b>		<b>Sales Order #:</b> 0905754288					
<b>Customer:</b> EXTRACTION OIL & GAS -						<b>Customer Rep:</b> Extraction Rep					
<b>Well Name:</b> LIVINGSTON				<b>Well #:</b> S20-25-4N		<b>API/UWI #:</b> 05-014-20799-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> BROOMFIELD		<b>County/Parish:</b> BROOMFIELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> NE SE-7-1S-68W-2330FSL-1222FEL											
<b>Contractor:</b>					<b>Rig/Platform Name/Num:</b> CARTEL 15						
<b>Job BOM:</b> 7521 7521											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HX38199					<b>Srv Supervisor:</b> Michael Herbig						
<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>		1648ft			<b>Job Depth TVD</b>						
<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>	
Open Hole Section			13.5				0	1653		0	
Casing		9.625	8.921	36			0	1648		0	
<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>		
Guide Shoe	9.625			1648		Top Plug	9.625		HES		
Float Shoe	9.625					Bottom Plug	9.625		HES		
Float Collar	9.625			1609		SSR plug set	9.625		HES		
Insert Float	9.625					Plug Container	9.625		HES		
Stage Tool	9.625					Centralizers	9.625		HES		
<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	Red Dye Spacer	Red Dye Spacer			10	bbl	8.33				

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	SwiftCem	SWIFTCEM (TM) SYSTEM	525	sack	13.5	1.74		5	9.2
9.20 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	Fresh Water	Fresh Water	120	bbl	8.33				
Cement Left In Pipe		Amount	ft	Reason			Shoe Joint		
Mix Water:		pH ##	Mix Water Chloride:## ppm			Mix Water Temperature:## °F °C			
Cement Temperature:		## °F °C	Plug Displaced by:## lb/gal kg/m3 XXXX			Disp. Temperature:## °F °C			
Plug Bumped?		Yes/No	Bump Pressure:#### psi MPa			Floats Held?Yes/No			
Cement Returns:		## bbl m3	Returns Density:## lb/gal kg/m3			Returns Temperature:## °F °C			
Comment									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Comments
Event	1	Check Floats	Call Out	6/14/2019	10:00:00	USER				Crw notified at 10:00
Event	2	Event	Pre-Convoy safety meeting	6/14/2019	11:15:00	USER				All personnel present. Discuss driving hazards.
Event	3	Crew Leave Yard	Crew Leave Yard	6/14/2019	11:30:00	USER				Crew leave yard for location.
Event	4	Arrive At Loc	Arrive At Loc	6/14/2019	12:30:00	USER				Rig Tripping out DP when crew arrived.
Event	5	Assessment Of Location Safety Meeting	assessment of location	6/14/2019	12:35:00	USER				FS 1653, FC 1609, OH 13.5, CSG 9.625 36#, MUD 8.3
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig up Safety Meeting	6/14/2019	13:00:00	USER				All personnel present. JSA signed.
Event	7	Rig-Up Equipment	Rig-Up Equipment	6/14/2019	13:15:00	USER				Rig up pump and lines.
Event	8	Start Job	Start Job	6/14/2019	17:39:55	COM4	0.00	8.18	-3.00	Start HES pumping unit.
Event	9	Test Lines	Test Lines	6/14/2019	17:42:17	COM4	0.00	8.30	61.00	Test lines 3500psi
Event	10	Pump Spacer 1	Pump Spacer 1	6/14/2019	17:47:58	COM4	0.00	8.37	12.00	Pump red dye 3.5bpm 100psi
Event	11	Pump Cement	Pump Cement	6/14/2019	17:50:23	COM4	5.50	8.32	213.00	Pump 165bbls cement at 8bpm 230psi at 13.5ppg, 1.74yld, 9.2gal/sk. Weight verified using pressurized mud scale.
Event	12	Shutdown	Shutdown, End cement	6/14/2019	18:13:16	USER	0.00	13.26	118.00	Shutdown, End cement
Event	13	Drop Plug	Drop Plug	6/14/2019	18:14:52	USER	0.00	1.48	-8.00	Drop top plug, witnessed by company man.
Event	14	Pump Displacement	Pump Displacement	6/14/2019	18:20:16	COM4	0.00	0.25	-2.00	Pump displacment 8bpm 200psi
Event	15	Slow Rate	Slow Rate	6/14/2019	18:34:00	USER	8.00	8.26	567.00	Slow rate prior to bump.
Event	16	Bump Plug	Bump Plug	6/14/2019	18:38:40	COM4	3.90	8.27	769.00	Bump plug 124bbls away 450 to 1050psi

Event	17	Check Floats	Check Floats	6/14/2019	18:40:02	USER	0.00	8.30	1023.00	Check floats. 1/2bbl returned. Rig received 17bbbls cement to surface.
Event	18	End Job	End Job	6/14/2019	18:40:28	COM4	0.00	8.27	26.00	End HES pumping unit.
Event	19	Pre-Rig Down Safety Meeting	Rig Down Lines	6/14/2019	19:00:00	USER				All personnel present. JSA signed.
Event	20	Rig-Down Equipment	Rig-Down Equipment	6/14/2019	19:15:00	USER				Rig down pump and lines.
Event	21	Event	Pre-Convoy safety meeting	6/14/2019	20:00:00	USER				All personnel present. Discuss driving hazards.
Event	22	Depart Location	Depart Location	6/14/2019	20:05:00	USER				Crew leave location.



## 3.0 Attachments

### 3.1 Livingston S20-25-4N Surface – Job Chart

