

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

**Livingston S20-25-5C Surface**

Sincerely,  
**Meghan Jacobs**

## Legal Notice

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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 **Livingston S20-25-5C** 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 22 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> 3904864		<b>Quote #:</b>		<b>Sales Order #:</b> 0905754726					
<b>Customer:</b> EXTRACTION OIL & GAS -				<b>Customer Rep:</b> Extraction Rep							
<b>Well Name:</b> LIVINGSTON			<b>Well #:</b> S20-25-5C			<b>API/UWI #:</b> 05-014-20800-00					
<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-1204FEL											
<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>		1650ft		<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	1652		0	
Casing		9.625	8.921	36			0	1650		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			1650		Top Plug	9.625		HES		
Float Shoe	9.625					Bottom Plug	9.625		HES		
Float Collar	9.625					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	SWIFTCCEM (TM) SYSTEM	525	sack	13.5	1.74		5	9.2
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	20:00:00	USER				Crew notified at 20:00
Event	2	Event	Pre-Convoy safety meeting	6/14/2019	21:30:00	USER				All personnel present. Discuss driving hazards.
Event	3	Crew Leave Yard	Crew Leave Yard	6/14/2019	21:45:00	USER				Crew leave yard for location.
Event	4	Arrive At Loc	Arrive At Loc	6/14/2019	23:00:00	USER				Rig Tripping out Dp when crew arrived.
Event	5	Assessment Of Location Safety Meeting	assessment of location	6/14/2019	23:15:00	USER				
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig up Safety Meeting	6/14/2019	23:30:00	USER				All personnel present. JSA signed.
Event	7	Rig-Up Equipment	Rig-Up Equipment	6/14/2019	23:40:00	USER				Rig up pump and lines.
Event	8	Start Job	Start Job	6/15/2019	06:57:24	COM4	0.00	8.31	0.00	Start HES pumping unit.
Event	9	Test Lines	Test Lines	6/15/2019	06:59:27	COM4	0.00	8.36	30.00	Test lines 3500psi
Event	10	Pump Spacer 1	Pump Spacer 1	6/15/2019	07:03:34	COM4	0.00	8.35	22.00	Pump 10bbls red dye at 2bpm 60psi
Event	11	Pump Cement	Pump Cement	6/15/2019	07:08:17	COM4	5.40	9.93	180.00	Pumped 185bbls cement at 8bpm 420psi at 13.5ppg, 1.74yld, 9.2gal/sk. Weight verified using pressurized mud scale.
Event	12	Drop Top Plug	Drop Top Plug	6/15/2019	07:34:17	COM4	0.00	16.27	0.00	Drop plug, witnessed by company man.
Event	13	Pump Displacement	Pump Displacement	6/15/2019	07:34:20	COM4	0.00	16.21	0.00	Pump displacement 8bpm 280psi
Event	14	Slow Rate	Slow Rate	6/15/2019	07:49:38	USER	3.90	8.30	557.00	Slow rate prior to bump.
Event	15	Bump Plug	Bump Plug	6/15/2019	07:53:46	COM4	0.00	8.32	1005.00	Bump plug 120bbls away 520 to 1050psi
Event	16	Check Floats	Check Floats	6/15/2019	07:55:28	USER	0.00	8.33	269.00	Check floats. 1/2bbl returned. 22bbls cement to surface.
Event	17	End Job	End Job	6/15/2019	07:55:51	COM4	0.00	8.29	21.00	End HES pumping unit.

Event	18	Pre-Rig Down Safety Meeting	Rig Down Lines	6/15/2019	08:15:00	USER	All personnel present. JSA signed.
Event	19	Rig-Down Equipment	Rig-Down Equipment	6/15/2019	08:30:00	USER	Rig down pumps and lines.
Event	20	Event	Pre-Convoy safety meeting	6/15/2019	09:30:00	USER	All personnel present. Discuss driving hazards.
Event	21	Depart Location	Depart Location	6/15/2019	10:00:00	USER	Crew leave location.



## 3.0 Attachments

### 3.1 Livingston S20-25-5C Surface – Job Chart

