

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Monday, June 10, 2019

### **LIVINGSTON S19-25-9N Surface**

Job Date: Monday, June 10, 2019

Sincerely,  
**Tyler Hill**

## Legal Notice

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### Disclaimer:

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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 S19-25-9N** 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 23 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> 3883777		<b>Quote #:</b>		<b>Sales Order #:</b> 0905754722					
<b>Customer:</b> EXTRACTION OIL & GAS -					<b>Customer Rep:</b> PAUL JEVNEY						
<b>Well Name:</b> LIVINGSTON			<b>Well #:</b> S19-25-9N			<b>API/UWI #:</b> 05-014-20746-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> BROOMFIELD		<b>County/Parish:</b> BROOMFIELD			<b>State:</b> COLORADO				
<b>Legal Description:</b> NW SE-7-1S-68W-2331FSL-1384FEL											
<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>Srvc Supervisor:</b> Nikolaus Kornafel						
<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>		1628ft			<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>	
Casing		9.625	8.921	36			0	1628		0	
Open Hole Section			13.5				0	1630		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	1		1628		Top Plug	9.625	1	HES		
Float Shoe	9.625						9.625				
Float Collar	9.625	1		1585			9.625				
Insert Float	9.625					Plug Container	9.625	1	HES		
Stage Tool	9.625					Centralizers	9.625				
<b>Fluid Data</b>											
<b>Stage/Plug #:</b> 1											
<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			4	420

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	SwiftCem	SWIFTCEM (TM) SYSTEM	525	sack	13.5	1.74	9.2	7	4830

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Fresh Water	123	bbl	8.33				

<b>Cement Left In Pipe</b>	<b>Amount</b>	45 ft	<b>Reason</b>	<b>Shoe Joint</b>	
<b>Mix Water:</b>	pH 7	<b>Mix Water Chloride:</b>	0 ppm	<b>Mix Water Temperature:</b>	69 °F
<b>Cement Temperature:</b>	N/A	<b>Plug Displaced by:</b>	8.33 lb/gal	<b>Disp. Temperature:</b>	69 °F
<b>Plug Bumped?</b>	Yes	<b>Bump Pressure:</b>	1000 psi	<b>Floats Held?</b>	Yes
<b>Cement Returns:</b>	23 bbl	<b>Returns Density:</b>	N/A	<b>Returns Temperature:</b>	N/A

**Comment** PUMPED 10 BBLS OF RED DYE SPACER FOLLOWED BY 163 BBLS OF LEAD CEMENT. DROPPED THE TOP PLUG AND DISPLACED WITH 123 BBLS OF FRESH WATER. CHECKED FLOATS FLOATS HELD, 1 BBLS BACK TO THE TRUCK. 23 BBLS OF CEMENT TO SURFACE

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	6/10/2019	02:00:00	USER					CREW CALLED OUT AT 02:00, REQUESTED ON LOCATION 06:30. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660 10867431, AND PUMP 11512092.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/10/2019	04:45:00	USER					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	6/10/2019	05:00:00	USER					STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	6/10/2019	05:30:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625" 36 LB/FT @ 1,630. TOTAL DEPTH 1,635', 13.5" HOLE, SHOE TRAC- 45','. PUMP FRESH WATER DISPLACEMENT 123 BBLS. CASING LANDED @ 05:30 06/10/2019. RIG CIRCULATED BOTTOMS UP.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/10/2019	05:35:00	USER					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH

											LOCATION, RIG UP, AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	6/10/2019	05:40:00	USER					CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/10/2019	06:30:00	USER	8.34	0.00	1.00	0.00	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS.
Event	8	Start Job	Start Job	6/10/2019	06:31:23	COM5	8.34	0.00	-1.00	0.00	BEGIN RECORDING JOB DATA.
Event	9	Test Lines	Test Lines	6/10/2019	06:33:47	COM5	8.34	0.00	7.00	1.90	PRESSURE TESTED IRON TO 3,000 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 900 PSI, 5TH GEAR STALL OUT @ 2,100 PSI.
Event	10	Pump Spacer 1	Pump Spacer 1	6/10/2019	06:37:04	COM5	8.32	0.00	13.00	0.00	PUMPED 10 BBLS OF WATER SPACER WITH RED DYE.
Event	11	Pump Cement	Pump Cement	6/10/2019	06:44:32	COM5	8.32	0.00	10.00	0.00	PUMPED 525 SKS OF SWIFCEM LEAD CEMENT @ 13.5 LB/GAL, 1.74 FT3/SK, 9.2 GAL/SK. 163 BBLS, TOP OF CEMENT @ SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 7 BBLS/MIN @ 230 PSI.
Event	12	Check Weight	Check Weight	6/10/2019	06:44:57	COM5	10.44	3.00	31.00	0.70	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Check Weight	Check Weight	6/10/2019	06:52:09	COM5	13.66	8.10	200.00	31.80	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.

Event	14	Check Weight	Check Weight	6/10/2019	07:05:15	COM5	14.09	6.30	41.00	134.70	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	15	Check Weight	Check Weight	6/10/2019	07:17:46	COM5	13.42	7.00	158.00	195.20	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	16	Shutdown	Shutdown	6/10/2019	07:25:27	COM5	13.76	0.00	52.00	248.10	SHUTDOWN TO WASH LINES.
Event	17	Drop Top Plug	Drop Top Plug	6/10/2019	07:26:45	COM5	43.42	0.00	13.00	248.10	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	18	Pump Displacement	Pump Displacement	6/10/2019	07:26:48	COM5	43.53	0.00	13.00	248.10	BEGIN CALCULATED DISPLACEMENT OF 123 BBLs WITH FRESH WATER.
Event	19	Bump Plug	Bump Plug	6/10/2019	07:47:05	COM5	8.04	0.00	958.00	120.30	BUMPED PLUG AND BROUGHT PRESSURE TO 1,000 PSI AND HELD FOR 2 MINUTES
Event	20	End Job	End Job	6/10/2019	07:48:50	COM5	8.02	0.00	7.00	120.30	CHECKED FLOATS, FLOATS HELD, 1 BBL BACK TO THE TRUCK. STOP RECORDING JOB DATA. 23 BBLs OF CEMENT TO SURFACE.
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/10/2019	07:50:00	USER	8.02	0.00	5.00	0.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	22	Rig-Down Completed	Rig-Down Completed	6/10/2019	09:00:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	23	Safety Meeting - Departing Location	Safety Meeting - Departing Location	6/10/2019	09:30:00	USER					CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.

## 3.0 Attachments

### 3.1 EXTRACTION LIVINGSTON S19-25-9N SURFACE-Custom Results.png

