

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Livingston S19-25-3N Surface

Sincerely,
Meghan Jacobs

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 **Livingston S19-25-3N** 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 26 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

Sold To #: 369404		Ship To #: 3883775		Quote #:		Sales Order #: 0905752705					
Customer: EXTRACTION OIL & GAS -						Customer Rep: Extraction Rep					
Well Name: LIVINGSTON				Well #: S19-25-3N		API/UWI #: 05-014-20758-00					
Field: WATTENBERG		City (SAP): BROOMFIELD		County/Parish: BROOMFIELD		State: COLORADO					
Legal Description: NW SE-7-1S-68W-2332FSL-1492FEL											
Contractor:				Rig/Platform Name/Num: CARTEL 15							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Michael Herbig							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type					BHST						
Job depth MD		1619ft			Job Depth TVD						
Water Depth					Wk Ht Above Floor						
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	
Open Hole Section			13.5				0	1621		0	
Casing		9.625	8.921	36			0	1619		0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625			1621		Top Plug	9.625		HES		
Float Shoe	9.625					Bottom Plug	9.625		HES		
Float Collar	9.625			1578		SSR plug set	9.625		HES		
Insert Float	9.625					Plug Container	9.625		HES		
Stage Tool	9.625					Centralizers	9.625		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	Red Dye Spacer	Red Dye Spacer			10	bbl	8.33				

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	SwiftCem	SWIFTCM (TM) SYSTEM	550	sack	13.5	1.74		5	9.2
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /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)	DS Pump Press (psi)	DH Density (ppg)	Comments
Event	1	Call Out	Call Out	6/5/2019	10:00:00	USER				Crew called out at 10:00
Event	2	Event	Pre-Convoy safety meeting	6/5/2019	12:00:00	USER				All personnel present. Discuss driving hazards
Event	3	Crew Leave Yard	Crew Leave Yard	6/5/2019	12:30:00	USER				One elite, two 660's and one p/u leave yard for location.
Event	4	Arrive At Loc	Arrive At Loc	6/5/2019	14:00:00	USER				Rig Drilling when crew arrived.
Event	5	Assessment Of Location Safety Meeting	assessment of location	6/5/2019	14:15:00	USER				FS 1621, FC 1578, CSG 9.625 36# 1526, MUD 8.3 OH 13.5. WATERTEST temp 62 sulfates<200 Chlorides 0 ph 7
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig up Safety Meeting	6/5/2019	14:30:00	USER				All personnel present. JSA signed
Event	7	Rig-Up Equipment	Rig-Up Equipment	6/5/2019	15:00:00	USER				Rig up pump and lines
Event	8	Start Job	Start Job	6/5/2019	21:24:29	COM4	0.00	-5.00	8.53	Start HES pumping unit.
Event	9	Test Lines	Test Lines	6/5/2019	21:27:32	USER	0.80	45.00	8.38	Test lines 3500psi
Event	10	Pump Spacer 1	Pump Spacer 1	6/5/2019	21:38:08	USER	0.00	-1.00	8.37	Pump Red dye spacer at 3.5bpm 80psi
Event	11	Pump Lead Cement	Pump Lead Cement	6/5/2019	21:42:26	USER	3.50	87.00	9.00	Pump lead cement 7bpm 320psi
Event	12	Check Weight	Check Weight	6/5/2019	21:51:47	COM4	7.00	293.00	13.61	Check weight. Weight verified using pressurized mud scale.
Event	13	Shutdown	Shutdown, End cement	6/5/2019	22:08:16	USER	7.00	193.00	13.39	Shutdown, End cement
Event	14	Drop Top Plug	Drop Top Plug	6/5/2019	22:10:38	USER	0.00	4.00	0.03	Drop top plug, Witnessed by company man.

Event	15	Pump Displacement	Pump Displacement	6/5/2019	22:11:58	USER	1.70	5.00	0.03	Pump displacement 8bpm 200psi
Event	16	Slow Rate	Slow Rate	6/5/2019	22:25:25	USER	3.60	563.00	8.36	Slow rate 3 bpm prior to bump.
Event	17	Bump Plug	Bump Plug	6/5/2019	22:33:01	USER	3.00	532.00	8.38	Bump plug 119bbbls away. 450psi to 960psi
Event	18	Check Floats	Check Floats	6/5/2019	22:35:06	USER	0.00	870.00	8.39	Check floats. 1/2 bbl back. Received 10bbbls red dye spacer and 26bbbls cement to surface.
Event	19	End Job	End Job	6/5/2019	22:37:45	COM4	1.70	5.00	8.37	End HES pumping unit.
Event	20	Pre-Rig Down Safety Meeting	Rig Down Lines	6/5/2019	22:45:00	USER	0.00	-1.00	8.44	All personnel present. JSA signed
Event	21	Rig-Down Equipment	Rig-Down Equipment	6/5/2019	23:00:00	USER				Rig down pump and lines
Event	22	Event	Pre-Convoy safety meeting	6/5/2019	23:30:00	USER				All personnel present. Discuss driving hazards
Event	23	Depart Location	Depart Location	6/5/2019	23:45:00	USER				Crew leave location.

3.0 Attachments

3.1 Livingston S19-25-3N Surface – Job Chart

