

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

VT LDS 3-16-18 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 **VT LDS 3-16-18** 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 56bbbls of cement 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 [Ft. Lupton]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 369404	Ship To #: 3786957	Quote #:	Sales Order #: 0904877725							
Customer: EXTRACTION OIL & GAS -		Customer Rep: Sean McIntyre								
Well Name: VT-LDS	Well #: 3-16-18	API/UWI #: 05-123-44417-00								
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO							
Legal Description: SW NW-15-5N-65W-1892FNL-578FWL										
Contractor: Shawn McIntyre		Rig/Platform Name/Num: Cartel 11								
Job BOM: 7521 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA/HX38199		Srv Supervisor: Thomas Haas								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	1601ft	Job Depth TVD	1601							
Water Depth		Wk Ht Above Floor	4							
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	1600	0	1600
Casing	0	9.625	8.921	36	8 RD	J-55	0	1601	0	1601
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625					Top Plug	9.625	1	HES	
Float Shoe	9.625			1601		Bottom Plug	9.625			
Float Collar	9.625			1559		SSR plug set	9.625			
Insert Float	9.625					Plug Container	9.625	1	HES	
Stage Tool	9.625					Centralizers	9.625			
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	50	bbl	8.33				2100	
Stage/Plug #: 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	
2	SwiftCem	SWIFTCM (TM) SYSTEM	675	sack	13.5	1.74	9.2	5	6210	
9.20 Gal			FRESH WATER							

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Cementing Job Summary

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	121	bbl	8.33				5082
Cement Left In Pipe		Amount	42 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:			<300 ppm		Mix Water Temperature:	
Cement Temperature:		N/A	Plug Displaced by:			8.33 lb/gal F.W.		Disp. Temperature:	
Plug Bumped?		Yes	Bump Pressure:			450 psi		Floats Held?	
Cement Returns:		N/A	Returns Density:			N/A		Returns Temperature:	
Comment Pumped calculated displacement, plug bumped final circulating pressure of 450 PSI, held 5 min casing test. Released pressure back to truck, floats held 1 bbl back. 56 bbl cement back to surface.									

2.0 Real-Time Job Summary

2.1 Job Event Log

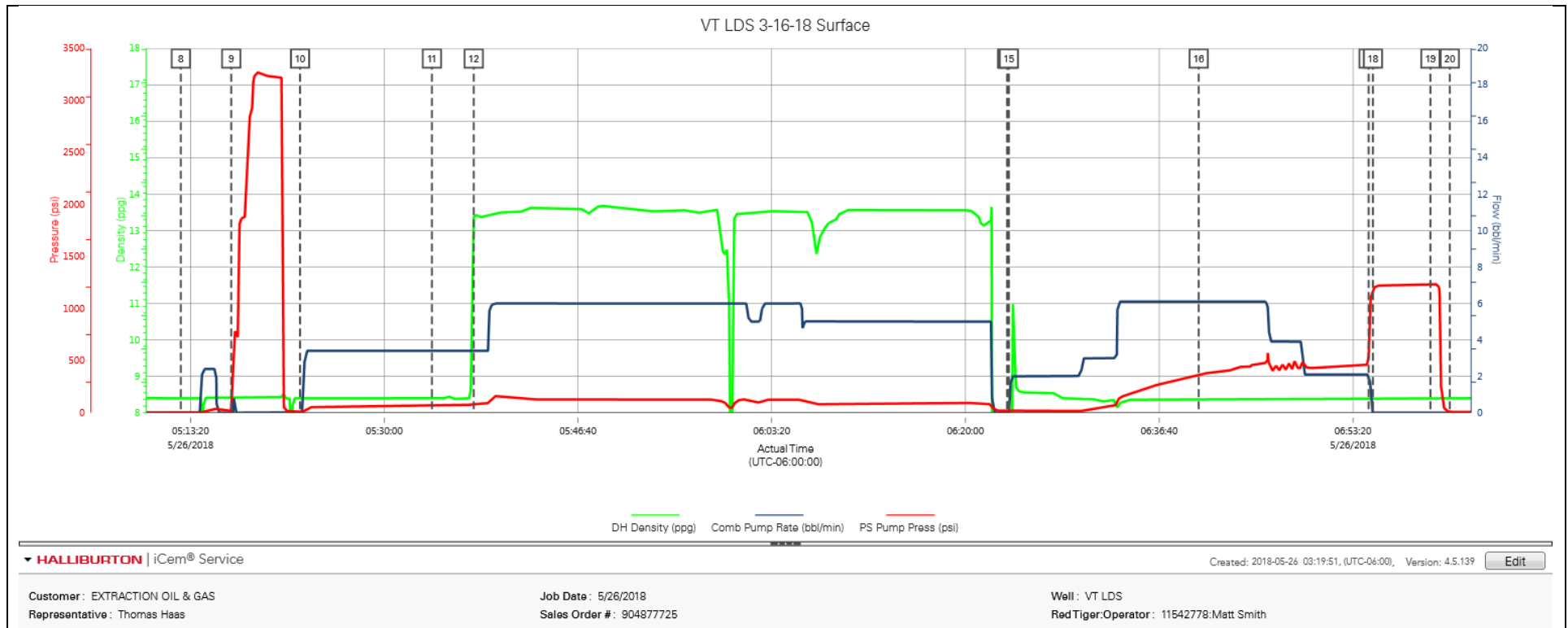
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	5/25/2018	06:00:00	USER				CREW CALLED OUT AT 06:00 5/26/2018, REQUESTED ON LOCATION 12:00 5/26/2018. CREW PICKED UP CEMENT, 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON,CO. BULK 660: 12350112/10866484 Bulk 660: 12154546/10991603 PUMP RED TIGER: 11542778
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/25/2018	10:15:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	5/25/2018	10:30:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	5/25/2018	11:45:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 36# 9.625" J-55 @ 1601', 42' SHOE JOINT, 13.5" OPEN HOLE, 9.0 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/26/2018	02:30:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	5/26/2018	02:45:00	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	5/26/2018	04:00:00	USER	8.55	0.00	5.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	5/26/2018	05:12:30	COM4	8.40	0.00	1.00	START JOB DATA RECORDING.
Event	9	Test Lines	Test Lines	5/26/2018	05:16:50	COM4	8.40	0.00	18.00	PRESSURE TESTED IRON TO 3150 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 800 PSI, 5TH GEAR STALL OUT @1880 PSI.
Event	10	Pump Spacer 1	Pump Spacer 1	5/26/2018	05:22:45	COM4	8.40	0.00	7.00	PUMP 40 BBL FRESH WATER SPACER.
Event	11	Pump Spacer 2	Pump Spacer 2	5/26/2018	05:34:06	COM4	8.40	3.40	73.00	PUMP 10 BBL RED DYE FRESH WATER SPACER.
Event	12	Pump Cement	Pump Cement	5/26/2018	05:37:42	COM4	13.39	3.40	87.00	PUMP 675 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.74

YIELD, 9.2 GAL/SK, 209 BBLs, TOL @ SURFACE, DENSITY
VERIFIED BY PRESSURIZED MUD SCALES.

Event	13	Shutdown	Shutdown	5/26/2018	06:23:35	COM4	0.27	0.00	17.00	SHUTDOWN TO DROP TOP PLUG.
Event	14	Drop Top Plug	Drop Top Plug	5/26/2018	06:23:40	COM4	0.27	0.00	16.00	PLUG LEFT CONTAINER.
Event	15	Pump Displacement	Pump Displacement	5/26/2018	06:23:44	COM4	0.27	0.00	16.00	BEGIN CALCULATED DISPLACEMENT OF 121 BBL.
Event	16	Other	Cement Returned To Surface	5/26/2018	06:40:04	COM4	8.38	6.10	366.00	CEMENT RETURNED TO SURFACE 65 BBL INTO DISPLACEMENT. 56 TOTAL BBL RETURNED TO SURFACE.
Event	17	Bump Plug	Bump Plug	5/26/2018	06:54:41	COM4	8.40	2.10	563.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 500 PSI OVER FINAL CIRCULATING PRESSURE OF 405 PSI.
Event	18	Shutdown	Pressure Test	5/26/2018	06:55:03	COM4	8.40	0.00	1190.00	SHUTDOWN FOR A 5 MIN. PRESSURE TEST.
Event	19	Check Floats	Check Floats	5/26/2018	07:00:00	USER	8.40	0.00	1233.00	RELEASE PRESSURE 1 BBL BACK TO TRUCK.
Event	20	End Job	End Job	5/26/2018	07:01:40	COM4	8.40	0.00	9.00	
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/26/2018	07:10:00	USER	6.56	0.00	4.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	22	Rig-Down Completed	Rig-Down Completed	5/26/2018	07:40:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/26/2018	07:45:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	24	Crew Leave Location	Crew Leave Location	5/26/2018	08:00:00	USER				THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.

3.0 Attachments

3.1 VT LDS 3-16-18 Surface – Job Chart with Events



3.2 VT LDS 3-16-18 Surface – Job Chart without Events

