

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Monday, August 06, 2018

VT-LDS C3-16-18 PRODUCTION

Job Date: Friday, July 13, 2018

Sincerely,

Julia Nichols

Legal Notice

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Table of Contents

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	Custom Results – Job Chart with Events	9
3.2	Custom Results – Job Chart without Events.....	10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **VT LDS C3-16-18** cement **Production** 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 43 barrels 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]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404		Ship To #: 3787028		Quote #:		Sales Order #: 0904984825				
Customer: EXTRACTION OIL & GAS				Customer Rep: Larry Siegel						
Well Name: VT-LDS			Well #: C3-16-18			API/UWI #: 05-123-44418-00				
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO				
Legal Description: SW NW-15-5N-85W-1895FNL-554FWL										
Contractor:				Rig/Platform Name/Num: Patterson 901						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srvc Supervisor: Prince Perez						
Job										
Formation Depth (MD)		Top	0'	Bottom		20,340'				
Job depth MD		20330ft		Job Depth TVD		8,970'				
				Wk Ht Above Floor		5'				
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
Casing	0	9.625	8.921	36		J-55	0	1557	0	1557
Casing	0	5.5	4.778	20	BTC	P-110	0	20330	0	6970
Open Hole Section			8.75				1557	8129	0	6970
Open Hole Section			8.5				8129	20340	0	6970
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5	1		20,330		Top Plug	5.5	1	ANTELOPE	
Float Shoe	5.5	1								
Float Collar	5.5	1		20,326						
						Plug Container	5.5	1	HES	
						Centralizers	5.5	300		
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	Spacer	Tuned Spacer III	50	bbl	11.5	3.73	23.4	4	1,761.2	
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	Cement	ELASTICEM (TM) SYSTEM	3,260	sack	13.2	1.57	7.53	8	24,547.8	

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Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	Displacement	Fresh Water	451.24	bbl	8.33					
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe		
Mix Water:		Ph 7	Mix Water Chloride:		0 ppm	Mix Water Temperature:		72 °F		
Cement Temperature:		89 °F	Plug Displaced by:		8.34 lb/gal	Disp. Temperature:		83 °F		
Plug Bumped?		Yes	Bump Pressure:		3,200 psi	Floats Held?		Yes		
Cement Returns:		43 bbl	Returns Density:		## lb/gal	Returns Temperature:		## °F		
Comment										
Pumped 50 bbls of Tuned Spacer III, 911.55 bbls of Elasticem, and 451bbls of freshwater Displacement. 43 bbls of cement back and 3 bbls back on the floats. Then pumped 60 bbls freshwater after the job to wash up the truck/stack.										

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>	PS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	7/13/2018	05:00:00	USER				CREW CALLED OUT AT 05:00, REQUESTED ON LOCATION 11:00. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660 10784082, 11527037, AND PUMP 11512092.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/13/2018	09:00:00	USER				CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Shop	Crew Leave Shop	7/13/2018	09:10:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/13/2018	10:10:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625" 36 LB/FT @ 1,557', 5.5" CASING: 20 LB/FT TOTAL 20,330', 8 3/4" FROM 1,557' TO 8,129' AND 8 1/2" FROM 8,129' TO 20,340', TD 20,340', 6' SHOE TRAC, TVD- 6,970'. PUMP FRESH WATER DISPLACEMENT. CASING LANDED @ 13:30 7/13/2018.
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	7/13/2018	10:20:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	7/13/2018	10:30:00	USER				RIG UP BULK AND MIXING EQUIPMENT.
Event	7	Rig-Up Completed	Rig-Up Completed	7/13/2018	13:00:00	USER				
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/13/2018	13:10:00	USER				MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	7/13/2018	14:49:16	COM4	3.10	0.00	1.00	BEGIN RECORDING JOB DATA.
Event	10	Test Lines	Test Lines	7/13/2018	14:56:21	COM4	8.32	0.00	4705.00	PRESSURE TESTED IRON TO 4,700 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 420 PSI, 5TH GEAR STALL OUT @ 1,890 PSI. 4,700 PRESSURE TEST KICKED OUT @ 4,570 PSI
Event	11	Pump Spacer 1	Pump Spacer 1	7/13/2018	15:01:01	COM4	11.32	2.60	237.00	PUMP 50 BBLS OF TUNED SPACER III @ 11.5 LB/GAL, 3.73 CUFT/SK, 23.4 GALL/SK. 10 GALS D-AIR, 25 GALS DUAL B, 25 GALS OF MUSOL A. 50 BBLS CALCULATED TO RETURN.

DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 4 BBLs/MIN @ 225 PSI.

PUMPED 3,260 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 FT3/SK, 7.53 GAL/SK. 911.55 BBLs, 43.43 BBLs OF CEMENT TO RETURN. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLs/MIN @ 650 PSI

Event	12	Pump Lead Cement	Pump Lead Cement	7/13/2018	15:12:08	COM4	13.33	7.40	727.00	
Event	13	Check Weight	Check Weight	7/13/2018	15:14:52	COM4	13.19	7.70	711.00	
Event	14	Shutdown	Shutdown	7/13/2018	15:34:56	COM4	14.77	0.00	51.00	SHUTDOWN DUE TO A LEAK ON THE FLEX HOSE ON THE RIG FLOOR.
Event	15	Check Weight	Check Weight	7/13/2018	15:48:31	COM4	13.43	8.10	652.00	
Event	16	Check Weight	Check Weight	7/13/2018	16:04:00	COM4	13.26	8.00	661.00	
Event	17	Shutdown	Shutdown	7/13/2018	17:17:31	COM4	2.10	0.00	6.00	SHUTDOWN TO WASH LINES.
Event	18	Drop Top Plug	Drop Top Plug	7/13/2018	17:19:38	COM4	8.17	0.00	9.00	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	19	Pump Displacement	Pump Displacement	7/13/2018	17:19:42	COM4	8.17	0.00	9.00	BEGIN CALCULATED DISPLACEMENT OF 451.24 BBLs WITH FRESH WATER. PUMP RATE 10 BPM @ 2,750 PSI
Event	20	Bump Plug	Bump Plug	7/13/2018	18:19:55	COM4	8.12	0.80	3195.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. 2,700 PSI PRESSURED 500 PSI OVER BUMP.
Event	21	Shift Tool - Lower	Shift Tool - Lower	7/13/2018	18:22:26	USER	8.11	4.10	3375.00	SHEARED @ 3,375 PSI
Event	22	Check Floats	Check Floats	7/13/2018	18:24:33	USER	8.08	0.00	2075.00	3 BBLs BACK.
Event	23	End Job	End Job	7/13/2018	18:26:32	COM4	8.09	0.00	-1.00	STOP RECORDING JOB DATA.
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	7/13/2018	18:30:00	USER	8.10	0.00	1.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	25	Rig-Down Equipment	Rig-Down Equipment	7/13/2018	18:40:00	USER	-0.12	0.00	-3.00	RIG DOWN BULK AND MIXING EQUIPMENT.
Event	26	Rig-Down Completed	Rig-Down Completed	7/13/2018	19:40:00	USER				
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/13/2018	19:50:00	USER				CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	28	Crew Leave Location	Crew Leave Location	7/13/2018	20:00:00	USER				THANK YOU FOR USING HALLIBURTON – PRINCE PEREZ AND CREW.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

