

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

United States of America, COLORADO

MLD 5 Surface

Job Date: Wednesday, August 09, 2017

Sincerely,

Fort Lupton District Cement

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. Accordingly, HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

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	Job Charts.....	10
3.1	Job Chart.....	10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **MLD 5** 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.

22 bbls of cement 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 #: 3800232		Quote #:		Sales Order #: 0904219738					
Customer: EXTRACTION OIL & GAS -				Customer Rep: Sean Macentire							
Well Name: MLD			Well #: 5		API/UWI #: 05-123-44821-00						
Field: WATTENBERG		City (SAP): MEAD		County/Parish: WELD			State: COLORADO				
Legal Description: NW NW-22-4N-68W-804FNL-688FWL											
Contractor: UNKNOWN				Rig/Platform Name/Num: WORKOVER RIG							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srvc Supervisor: Nicholas Peterson							
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST						
Job depth MD		1580ft			Job Depth TVD			1580			
Water Depth					Wk Ht Above Floor			6'			
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	
Casing	0	9.625	8.921	36	8 RD	J-55	0	1579	0	0	
Open Hole Section			13.5				0	1580	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625	1	HES	1579		Top Plug	9.625	1	HES		
Float Shoe	9.625	1	HES	1536		Bottom Plug					
Float Collar						SSR plug set					
Insert Float						Plug Container	9.625	1	HES		
Stage Tool						Centralizers					
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	Fresh Water Spacer	Fresh Water Spacer			30	bbl	8.33		42	5	1,260

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	Red Dye	Red Dye Spacer	10	bbl	8.33		42	5	420
3	Cement	SWIFTCEM (TM) SYSTEM	550	sack	13.5	1.74	9,2	6	5,060
9.20 Gal		FRESH WATER							
4	Displacement	Fresh Water	118	bbl	8.33		42	6	4,956
Cement Left In Pipe									
Amount		43 ft			Reason			Shoe Joint	
Mix Water: pH 7.0		Mix Water Chloride: 0 ppm			Mix Water Temperature: 70 °F				
Cement Temperature: ## °F		Plug Displaced by: 8.33 lb/gal			Disp. Temperature: 70 °F				
Plug Bumped? Yes		Bump Pressure: 510 psi			Floats Held? Yes				
Cement Returns: 22 bbLS		Returns Density: 13.5 lb/gal			Returns Temperature: ## °F				
Comment: Pumped 30 bbls fresh water, 10 bbls red dye, 170.44 cement. 118 bbls fresh water displacement, cement to surface 96 bbls away 22 bbls back to surface. Bumped plug @ calculated pressured up to 1,500 psi for 5 min casing pressure test. Floats held got 1 bbl back.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Arrive At Loc	Arrive At Loc	8/9/2017	03:00:00	USER				E
Event	2	Call Out	Call Out	8/9/2017	11:00:00	USER				CREW CALLED OUT AT 11:00, REQUESTED ON LOCATION 15:00. CREW PICKED UP CEMENT, 100 LBS OF SUGAR, TOP PLUG, AND 2 LBS RED DYE FROM FT. LUPTON, CO. BULK 660, E-08, 10866493, AND PUMP 12645760. CREW WAS ON LOCATION FROM PREVIOUS JOB.
Event	3	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/9/2017	14:00:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	4	Rig-Up Equipment	Rig-Up Equipment	8/9/2017	14:15:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
Event	5	Rig-Up Completed	Rig-Up Complete	8/9/2017	14:45:00	USER				
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/9/2017	15:30:00	USER	8.39	0.00	27.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	7	Start Job	Start Job	8/9/2017	15:48:52	COM5	8.33	2.70	40.00	BEGIN RECORDING JOB DATA.

Event	8	Pressure Test	Pressure Test	8/9/2017	15:50:36	USER	8.35	0.00	46.00	PRESSURE TESTED IRON TO 2500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1381 PSI, 5TH GEAR STALL OUT @ 1784 PSI.
Event	9	Pump Spacer 1	Pump Spacer 1	8/9/2017	15:58:26	COM5	8.40	1.10	52.00	PUMPED 30 BBLS FRESH WATER FOLLOWED BY 10 BBLS RED DYE. PUMP RATE 3 BBLS/MIN @ 170 PSI.
Event	10	Pump Cement	Pump Cement	8/9/2017	16:09:10	COM5	13.82	5.00	196.00	PUMP 550 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.74 FT3/SK, 9.2 GAL/SK 170440 BBLS. DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	11	Shutdown	Shutdown	8/9/2017	16:39:12	USER	13.42	4.20	130.00	
Event	12	Drop Top Plug	Drop Top Plug	8/9/2017	16:41:36	COM5	6.48	0.00	17.00	PLUG LEFT CONTAINER, VERIFIED BY COMPANY REP.
Event	13	Pump Displacement	Pump Displacement	8/9/2017	16:42:15	COM5	3.56	0.00	17.00	BEGIN CALCULATED DISPLACEMENT OF 118 BBLS WITH FRESH WATER. CEMENT TO SURFACE @ 96 BBLS INTO DISPLACEMENT, 22 BBLS OF CEMENT TO SURFACE.
Event	14	Bump Plug	Bump Plug	8/9/2017	17:05:23	COM5	8.39	0.00	1360.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED UP TO 1500 PSI FOR 5 MIN CASING PRESSURE TEST.
Event	15	Check Floats	Check Floats	8/9/2017	17:12:14	USER	8.39	0.00	805.00	FLOATS HELD GOT 1 BBL BACK.
Event	16	End Job	End Job	8/9/2017	17:14:00	COM5				STOP RECORDING JOB DATA.
Event	17	Pre-Rig Down Safety	Pre-Rig Down Safety	8/9/2017	18:01:09	USER				DISCUSSED POSSIBLE

		Meeting	Meeting				
Event	18	Rig-Down Equipment	Rig-Down Equipment	8/9/2017	18:03:13	USER	HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
							RIG DOWN BULK AND MIXING EQUIPMENT.
Event	19	Crew Leave Location	Crew Leave Location	8/9/2017	18:03:33	USER	THANK YOU FOR USING HALLIBURTON NICK PETERSON AND CREW. BULK TRUCKS LEFT TO GET RELOADED.

3.0 Job Charts

3.1 Job Chart

