

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Tuesday, August 01, 2017

HFE 5 Surface

Job Date: Friday, July 28, 2017

Sincerely,

Bryce Hinsch

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 **HFE 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.

Approximately 21 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 [Ft. Lupton]

The Road to Excellence Starts with Safety

Sold To #: 369404		Ship To #: 3800433		Quote #:		Sales Order #: 0904184944					
Customer: EXTRACTION OIL & GAS -				Customer Rep: Sean Macentire							
Well Name: HFE			Well #: 5		API/UWI #: 05-123-44772-00						
Field: WATTENBERG		City (SAP): MEAD		County/Parish: WELD		State: COLORADO					
Legal Description: SW SW-22-4N-68W-1125FSL-991FWL											
Contractor: UNKNOWN				Rig/Platform Name/Num: WORKOVER RIG							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Nicholas Peterson							
Job											
Formation Name											
Formation Depth (MD)		Top				Bottom					
Form Type						BHST					
Job depth MD		1,578'				Job Depth TVD					
Water Depth						Wk Ht Above Floor 5'					
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	1600	0	0	
Open Hole Section			13.5				0	1600	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625	1	HES	1578		Top Plug	9.625	1	HES		
Float Shoe	9.625	1	HES	1535		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	Water Spacer	Fresh WaterSpacer			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	
1	Red Dye Spacer	Red Dye Spacer	10	bbl	8.33		42	5	420	
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	SWIFTCEN (TM) SYSTEM	550	sack	13.5	1.74	9.2	5	5,060	
9.20 Gal		FRESH WATER								
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	Displacement	Fresh Water	118	bbl	8.33		42	6	4,956	
Cement Left In Pipe		Amount	42 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:			500 psi		Floats Held?		Yes
Cement Returns:		21 bbls	Returns Density:			13.5 lb/gal		Returns Temperature:		## °F
Comment: Pumped 30 bbls Fresh Water, 10 bbls Red Dye, 170.44 bbls of cement, 118 bbls of Displacement. Cement returns back @ 97 away, 21 bbls cement to surface. Bumped @ calculated volume 500 psi took up to 1,500 for 5 min casing pressure test.										

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		Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/27/2017	15:30:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event		Crew Leave Yard	Crew Leave Yard	7/27/2017	16:00:00	USER				STARTED JOURNEY MANAGEMENT.
Event		Arrive at Location from Service Center	Arrive at Location	7/27/2017	17:00:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; CASING- 9.625 36# @ 1,578', 13..5" HOLE 1,578' SHOE 43', FRESH WATER DISPLACEMENT, HALLIBURTON FLOATS AND, PLUGS. CASING LANDED @ 02:00 06/28/2017.
Event		Call Out	Call Out	7/27/2017	18:00:00	USER				CREW CALLED OUT AT 18:00, REQUESTED ON LOCATION AT 00:00. CREW PICKED UP CEMENT, 100 LBS OF SUGAR, CEMENT PLUG AND 2 LBS RED DYE FROM FT. LUPTON, CO. EQUIPMENT ON LOCATION BULK 660, E-2, 12649238, AND PUMP RT-4. PUMP WAS ON LOCATION FROM PREVIOUS JOB. BULK TRUCKS WENT BACK TO YARD TO RE- LOAD.
Event		Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/27/2017	22:15:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH

										LOCATION, RIG UP AND WEATHER.
Event		Rig-Up Equipment	Rig-Up Equipment	7/27/2017	22:30:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event		Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/28/2017	02:15:00	USER	8.41	0.00	26.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	1	Start Job	Start Job	7/28/2017	02:37:18	COM5	8.43	0.00	23.00	BEGIN RECORDING JOB DATA.
Event	2	Test Lines	Test Lines	7/28/2017	02:39:37	COM5	8.39	0.00	104.00	PRESSURE TESTED IRON TO 2500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1500 PSI, 5TH GEAR STALL OUT @ 1672 PSI.
Event	3	Pump Spacer 1	Pump Spacer 1	7/28/2017	02:44:26	COM5	8.38	0.00	76.00	PUMPED 30 BBLS FRESH WATER. PUMP RATE 5 BBLS/MIN @ 130 PSI.
Event	4	Pump Spacer 2	Pump Spacer 2	7/28/2017	02:50:45	COM5	8.37	5.00	163.00	PUMP 10 BBLS OF FRESH WATER WITH RED DYE. PUMP RATE 5 BBLS/MIN @ 130 PSI.
Event	5	Pump Cement	Pump Cement	7/28/2017	02:57:02	COM5	8.34	1.10	70.00	PUMP 550 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.74 FT3/SK, 9.2 GAL/SK 170.44 BBLS. HOT @ 1,578' TOC @ SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBBL/MIN @ 110 PSI.
Event	6	Shutdown	Shutdown	7/28/2017	03:30:55	COM5	16.89	0.00	86.00	
Event	7	Drop Top Plug	Drop Top Plug	7/28/2017	03:32:06	COM5	16.37	0.00	24.00	PLUG LEFT CONTAINER,

										VERIFIED BY COMPANY REP.
Event	8	Pump Displacement	Pump Displacement	7/28/2017	03:32:09	COM5	16.37	0.00	24.00	BEGIN CALCULATED DISPLACEMENT OF 118 BBLS WITH FRESH WATER. CEMENT TO SURFACE @ 97 BBLS INTO DISPLACEMENT, 21 BBLS OF CEMENT TO SURFACE.
Event	9	Bump Plug	Bump Plug	7/28/2017	03:55:22	COM5	8.30	3.00	581.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 540 PSI OVER BUMP TO 1500 PSI FOR 5 MIN CASING PRESSURE TEST.
Event	10	Check Floats	Check Floats	7/28/2017	04:02:11	USER	8.39	0.00	1548.00	RELEASED PRESSURE, FLOATS HELD, 1 BBL BACK.
Event	11	End Job	End Job	7/28/2017	04:03:13	COM5	8.31	0.00	134.00	STOP RECORDING JOB DATA.
Event		Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/28/2017	04:15:00	USER	8.34	2.00	49.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event		Rig-Down Completed	Rig-Down Completed	7/28/2017	04:30:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event		Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/28/2017	04:45:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event		Depart Location	Depart Location	7/28/2017	05:00:00	USER				THANK YOU FOR USING HALLIBURTON - NICK PETERSON AND CREW.

3.0 Attachments

3.1 Extraction HFE 5 Surface Job Chart

