

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Tuesday, August 01, 2017

HFE #4 Surface

Job Date: Tuesday, August 1, 2017

Sincerely,

Julia Nichols

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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 #4** 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 23 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 [Ft. Lupton]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404		Ship To #: 3800441		Quote #:		Sales Order #: 0904184627					
Customer: EXTRACTION OIL & GAS -				Customer Rep: Sean Macentire							
Well Name: HFE			Well #: 4		API/UWI #: 05-123-44774-00						
Field: WATTENBERG		City (SAP): MEAD		County/Parish: WELD		State: COLORADO					
Legal Description: SW SW-22-4N-88W-1126FSL-963FWL											
Contractor: UNKNOWN				Rig/Platform Name/Num: WORKOVER RIG							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199					Srcv Supervisor: Nicholas Peterson						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST						
Job depth MD		1600ft			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	Red Dye Spacer	Red Dye Spacer			30	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	Red Dye Spacer	Red Dye Spacer			10	bbl	8.33			5	1,260

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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/min	Total Mix Fluid Gal	
3	Cement	SWIFTCEM (TM) SYSTEM	550	sack	13.5	1.74	9.2	6	5,060	
9.20 Gal		FRESH WATER								
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	
4	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:		530 psi		Floats Held?			Yes
Cement Returns:		23 bbls	Returns Density:		13.2 lb/gal		Returns Temperature:			## °F °C
Comment: Pumped 30 bbls. Fresh water, 10 bbls. Red Dye Spacer, 170.44 bbls. Cement followed by 118 bbls Fresh water displacement, Got cement back to surface @ 95 away 23 bbls cement to surface.										

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	7/30/2017	10:30:00	USER	CREW CALLED OUT AT 10:30, REQUESTED ON LOCATION @ 13:30. CREW PICKED UP CEMENT, CEMENT PLUG AND 2 LBS RED DYE FROM FT. LUPTON, CO. EQUIPMENT ON LOCATION BULK 660, E-2, 12649238, AND PUMP RT-4.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/30/2017	12:00:00	USER	DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	7/30/2017	12:30:00	USER	STARTED JOURNEY MANAGEMENT. CREW WAS WAITING FOR JOB TO CALL ON PREVIOUS LOCATION.
Event	4	Arrive at Location from Service Center	Arrive at Location	7/30/2017	13:30:00	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 @ 16:30 06/30/2017.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/30/2017	15:00:00	USER	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	7/30/2017	15:30:00	USER	CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/30/2017	16:45:00	USER	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	7/30/2017	17:35:58	COM5	
Event	9	Pressure Test	Pressure Test	7/30/2017	17:38:55	USER	PRESSURE TESTED IRON TO 2500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1711 PSI, 5TH GEAR STALL OUT @ 1991 PSI.
Event	10	Pump Spacer 1	Pump Spacer 1	7/30/2017	17:43:29	COM5	PUMPED 30 BBLS FRESH WATER. PUMP RATE 5 BBLS/MIN 130 PSI.
Event	11	Pump Spacer 2	Pump Spacer 2	7/30/2017	17:49:16	USER	PUMP 10 BBLS OF FRESH WATER WITH RED DYE. PUMP RATE 6 BBLS/MIN @ 130 PSI.

Event	12	Pump Lead Cement	Pump Lead Cement	7/30/2017	17:58:50	COM5	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 @ 154 PSI.
Event	13	Drop Top Plug	Drop Top Plug	7/30/2017	18:36:21	USER	PLUG LEFT CONTAINER, VERIFIED BY COMPANY REP.
Event	14	Pump Displacement	Pump Displacement	7/30/2017	18:40:47	COM5	BEGIN CALCULATED DISPLACEMENT OF 118 BBLS WITH FRESH WATER. CEMENT TO SURFACE @ 95 BBLS INTO DISPLACEMENT, 23 BBLS OF CEMENT TO SURFACE.
Event	15	Bump Plug	Bump Plug	7/30/2017	19:06:38	USER	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 540 PSI OVER BUMP TO 1500 PSI FOR 5 MIN CASING PRESSURE TEST.
Event	16	Check Floats	Check Floats	7/30/2017	19:14:14	USER	RELEASED PRESSURE, FLOATS HELD, 1 BBL BACK.
Event	17	End Job	End Job	7/30/2017	19:15:08	USER	STOP RECORDING JOB DATA.
Event	18	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/30/2017	19:30:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	19	Rig-Down Completed	Rig-Down Completed	7/30/2017	20:00:00	USER	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	20	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/30/2017	20:15:00	USER	DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	21	Depart Location	Depart Location	7/30/2017	20:30:00	USER	THANK YOU FOR USING HALLIBURTON - NICK PETERSON AND CREW.

3.0 Attachments

3.1 Custom Results – Job Chart with Events

