

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

### **HFE #6 Production**

Job Date: Saturday, August 26, 2017

Sincerely,

**Fort Lupton District Cement**

## Legal Notice

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **HFE 6** 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.

50 bbls of spacer to surface

5 bbls of wet shoe was pumped

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 #: 3800440		Quote #:		Sales Order #: 0904260579				
Customer: EXTRACTION OIL & GAS				Customer Rep: Jose Torres						
Well Name: HFE			Well #: 6		API/UWI #: 05-123-44775-00					
Field: WATTENBERG		City (SAP): MEAD		County/Parish: WELD		State: COLORADO				
Legal Description: SW SW-22-4N-68W-1125FSL-1019FWL										
Contractor: CYCLONE				Rig/Platform Name/Num: CYCLONE 37						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Nicholas Roles						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		11938ft		Job Depth TVD						
Water Depth				Wk Ht Above Floor						
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		9.625	8.921	36			0	1594	0	1594
Casing		5.5	4.778	20			0	11938	0	7230
Open Hole Section			8.5				1594	11960	1594	7230
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5		HES	
Float Shoe	5.5			11938		Bottom Plug	5.5		HES	
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.73		6		
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
149.34 lbm/bbl		BARITE, BULK (100003681)								

35 gal/bbl		<b>FRESH WATER</b>							
0.50 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem	ELASTICEM (TM) SYSTEM	1950	sack	13.2	1.57		8	7.53
7.53 Gal		<b>FRESH WATER</b>							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	265	bbl	8.33			10	
Cement Left In Pipe	Amount	0 ft			Reason			Wet Shoe	
<b>Comment</b> Got 50bbls cement 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)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	8/26/2017	07:00:00	USER					Called out by Service Coordinator for O/L at 1200
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	8/26/2017	10:15:00	USER					Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/26/2017	10:30:00	USER					Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	8/26/2017	11:30:00	USER					Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/26/2017	11:45:00	USER					Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	8/26/2017	12:30:00	USER					Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Start Job	Start Job	8/26/2017	13:43:16	COM4	8.43	0.00	73.00	38.70	TD-11960', TP-11938' 5.5" 20#, FC-11933', TVD-7230', SURF-1594' 9.625" 36#, MUD 9.6#
Event	8	Test Lines	Test Lines	8/26/2017	16:08:01	COM4	8.26	0.00	105.00	41.90	Pumped 5bbls fresh water to fill lines at 2bpm 110psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1480psi,

											proceeded to bring pressure to 5000psi, held well and no leaks.
Event	9	Pump Spacer 1	Pump Spacer 1	8/26/2017	16:14:00	COM4	8.37	0.00	5.00	0.00	Pumped 50bbls of 11.5# 3.78y 23.8g/s Tuned Spacer III with 25g Musol A, 25g Dual Spacer B and 10g D-air at 6bpm 246psi.
Event	10	Pump Cement	Pump Cement	8/26/2017	16:24:56	COM4	13.10	6.50	241.00	49.20	Pumped 1950sk or 545bbls of 13.2# 1.57y 7.53g/s Elasticem at 8bpm 540psi.
Event	11	Check Weight	Check weight	8/26/2017	16:26:54	COM4	13.18	8.10	409.00	15.80	Weight verified with pressurized mud scales.
Event	12	Check Weight	Check weight	8/26/2017	17:07:45	COM4	13.30	8.10	367.00	340.60	Weight verified with pressurized mud scales.
Event	13	Shutdown	Shutdown	8/26/2017	17:42:32	COM4	13.69	0.00	101.00	596.80	Rig blew air through lines to pits, followed with 5bbls fresh water through pumps.
Event	14	Drop Top Plug	Drop Top Plug	8/26/2017	17:49:43	COM4	8.44	0.00	3.00	605.30	Dropped by KLX tool hand, witnessed by company man and HES supervisor.
Event	15	Pump Displacement	Pump Displacement	8/26/2017	17:49:46	COM4	8.43	0.00	3.00	605.30	Pumped 265bbls fresh water at 10bpm-2500psi.
Event	16	Bump Plug	Bump Plug	8/26/2017	18:21:18	COM4	8.37	2.10	3099.00	269.40	Slowed down at 250bbls away to 5bpm, final circulating pressure-2401psi. Bump pressure-2850psi.
Event	17	Pressure Up Well	Pressure Up Well	8/26/2017	18:21:46	USER	8.38	4.70	2535.00	270.40	Pumped fresh water to burst at 3913psi, continued to pump 5bbls fresh water at 5bpm 2400psi for wet shoe.
Event	18	Check Floats	Check Floats	8/26/2017	18:22:35	USER	8.36	5.00	2421.00	274.50	Released pressure and got 2bbls back. Floats held.



Event	19	End Job	End Job	8/26/2017	18:23:48	COM4						Got 50bbbls Cement to surface.
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/26/2017	18:30:00	USER	8.35	0.00	8.00	275.20		Discussed rigging down hazards and procedure according to HMS.
Event	21	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/26/2017	19:45:00	USER						Pre journey management prior to departure.
Event	22	Depart Location Safety Meeting	Depart Safety Meeting	8/26/2017	20:00:00	USER						Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.

### 3.1 Job Chart

