

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Tuesday, August 01, 2017

**HFE #8 Surface**

Sincerely,  
**Julia Nichols**

## 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	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 **HFE #8** 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 25 barrels of cement ere 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]**

**HALLIBURTON**

*Cementing Job Summary*

*The Road to Excellence Starts with Safety*

Sold To #: 369404		Ship To #: 3800434		Quote #:		Sales Order #: 0904185903				
Customer: EXTRACTION OIL & GAS -				Customer Rep: Shawn McIntyre						
Well Name: HFE		Well #: 8		API/UWI #: 05-123-44771-00						
Field: WATTENBERG		City (SAP): MEAD		County/Parish: WELD		State: COLORADO				
Legal Description: SW SW-22-4N-88W-1125FSL-1075FWL										
Contractor: UNKNOWN				Rig/Platform Name/Num: WORKOVER RIG						
Job BOM: 7521 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srvc Supervisor: Bradley Hinkle						
<b>Job</b>										
Formation Name										
Formation Depth (MD)		Top			Bottom					
Form Type					BHST					
Job depth MD		1579ft			Job Depth TVD		1579ft			
Water Depth					Wk Ht Above Floor					
Perforation Depth (MD)		From			To					
<b>Well Data</b>										
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	1544	0	0
Open Hole Section			13.5				0	1580	0	0
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625					Top Plug	9.625	1	HES	
Float Shoe	9.625	1		1544		Bottom Plug	9.625		HES	
Float Collar	9.625	1		1501		SSR plug set	9.625		HES	
Insert Float	9.625					Plug Container	9.625	1	HES	
Stage Tool	9.625					Centralizers	9.625		HES	
<b>Fluid Data</b>										
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	Red Dye Water	10	bbl	8.33			3		
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	Primary Cement	SWIFTCEM	550	sack	13.5	1.74		7.5	9.2	

**HALLIBURTON**

*Cementing Job Summary*

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Displacement	Fresh Water	116	bbl	8.33			10	
Cement Left In Pipe		Amount	42 ft		Reason			Shoe Joint	
Mix Water:		pH 6	Mix Water Chloride:		0 ppm		Mix Water Temperature:		
Cement Temperature:		## °F °C	Plug Displaced by:		## lb/gal kg/m <sup>3</sup> XXXX		Disp. Temperature:		
Plug Bumped?		Yes	Bump Pressure:		411 psi		Floats Held?		
Cement Returns:		25 bbl	Returns Density:		## lb/gal kg/m <sup>3</sup>		Returns Temperature:		
Comment 25 bbls cement to surface.									

## 2.0 Real-Time Job Summary

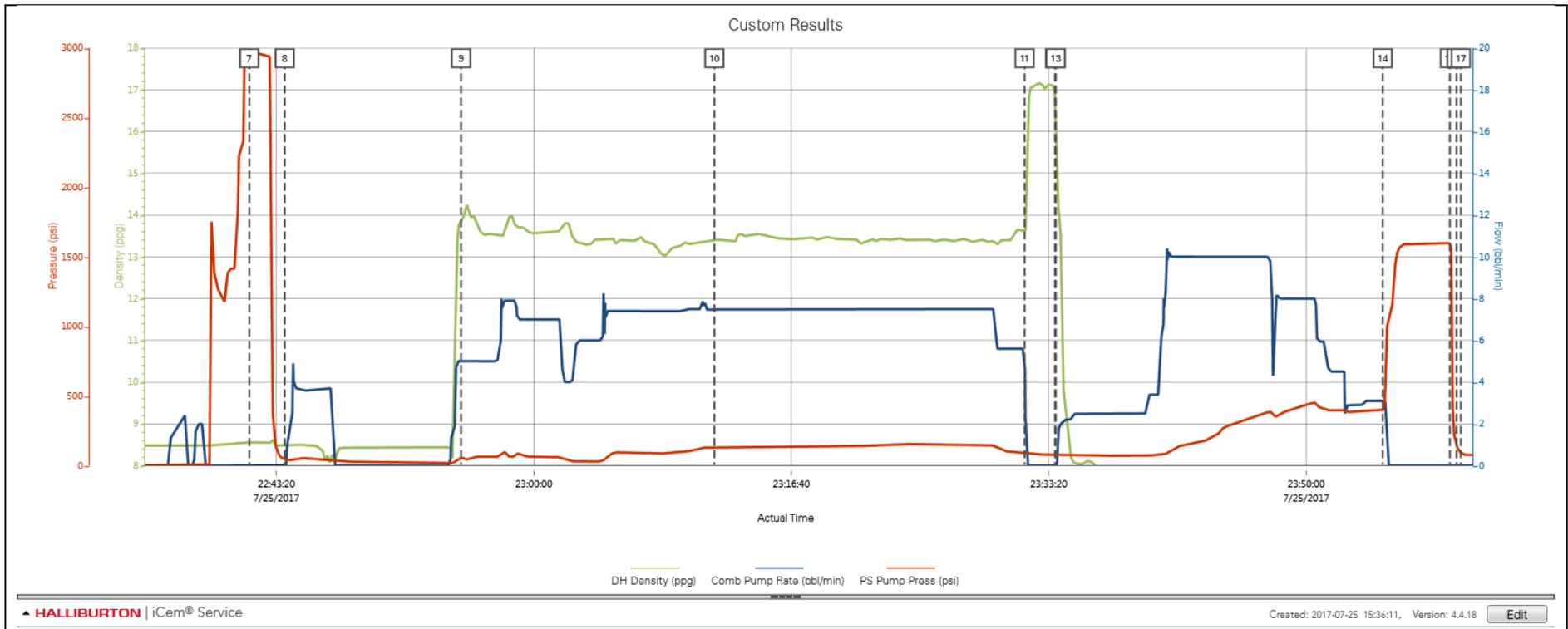
### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	7/25/2017	14:00:00	USER				Crew called for an on location of 2000. Crew was Bradley Hinkle, Prince Perez, Kendall Broom and Alaa Almallallah.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	7/25/2017	14:30:00	USER				Pre-journey safety meeting.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	7/25/2017	15:30:00	USER				Sign in, perform a site assessment and pre rig-up safety meeting.
Event	4	Other	Job Numbers	7/25/2017	16:05:16	USER				TD: 1580. TP: 1579. FC: 1536. 9.625" casing inside a 13.5" OH.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/25/2017	21:30:00	USER	8.46	0.00	-8.00	Pre-job safety meeting with HES personnel. Rig crew did not participate.
Event	6	Start Job	Start Job	7/25/2017	22:31:20	COM4	8.66	0.00	-4.00	
Event	7	Test Lines	Test Lines	7/25/2017	22:41:34	COM4	8.56	0.00	2982.00	Pressure test lines with a 500 PSI electronic kick-out test.
Event	8	Pump Spacer 1	Pump Spacer 1	7/25/2017	22:43:52	COM4	8.47	0.00	45.00	Pump 10 bbls red dye water.
Event	9	Pump Cement	Pump Cement	7/25/2017	22:55:17	COM4	13.90	5.00	59.00	Pump 170 bbls (550 sacks) SwiftCem mixed at 13.5 ppg. Density verified by pressurized scales.
Event	10	Check Weight	Check Weight	7/25/2017	23:11:41	COM4	13.42	7.50	127.00	Cement weighed at 13.5 ppg.
Event	11	Shutdown	Shutdown	7/25/2017	23:31:46	USER	13.61	5.60	99.00	
Event	12	Drop Top Plug	Drop Top Plug	7/25/2017	23:33:44	COM4	16.61	0.00	77.00	Top plug preloaded. Witnessed by customer.
Event	13	Pump Displacement	Pump Displacement	7/25/2017	23:33:47	COM4	16.00	0.00	77.00	Pump 116 bbls fresh water. Good returns throughout. 25 bbls cement to surface.
Event	14	Bump Plug	Bump Plug	7/25/2017	23:54:58	COM4	7.52	3.10	401.00	Bump plug at 411 PSI and increased 500 PSI over. Increased pressure to 1500 PSI for a 15 minute casing test.

Event	15	Check Floats	Check Floats	7/25/2017	23:59:18	USER	7.57	0.00	1599.00	Floats held. 1 bbl back.
Event	16	End Job	End Job	7/25/2017	23:59:44	COM4	7.52	0.00	145.00	
Event	17	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/26/2017	00:00:01	USER	7.53	0.00	91.00	Pre-rig down safety meeting.
Event	18	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/26/2017	00:30:00	USER				Pre-journey safety meeting.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

