

# HALLIBURTON

iCem<sup>®</sup> Service

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

Date: Tuesday, March 05, 2019

### **MT FED HEATH 8W-20-13 Surface**

Job Date: Thursday, February 14, 2019

Sincerely,  
**Tyler Hill**

## 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. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. 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	MT FED HEATH 8W-20-13 Surface.png .....	9

## 1.0 Cementing Job Summary

---

### 1.1 Executive Summary

---

Halliburton appreciates the opportunity to perform the cementing services on the **MT FED HEATH 8W-20-13** 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 32 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 #: 3691211	Quote #:	Sales Order #: 0905488455
Customer: EXTRACTION OIL & GAS -		Customer Rep: Mike Torres	
Well Name: MT FED HEATH		Well #: 8W-20-13	API/UWI #: 05-123-42173-00
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO
Legal Description: NE NW-9-5N-65W-1020FNL-1753FWL			
Contractor:		Rig/Platform Name/Num: Cartel 41	
Job BOM: 7521 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Kendall Broom - H194727	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	1588ft		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	0	9.625	8.921	36	8 RD	J-55	0	1588	0	0
Open Hole Section			13.5				0	1588	0	0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625			1588	Top Plug	9.625	1	HES
Float Shoe	9.625				Bottom Plug	9.625		HES
Float Collar	9.625				SSR plug set	9.625		HES
Insert Float	9.625				Plug Container	9.625	1	HES
Stage Tool	9.625				Centralizers	9.625		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	Red Dye Spacer	Red Dye Spacer	10	bbl	8.33					

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	SWIFTCEM (TM) SYSTEM	560	sack	13.5	1.74		5	9.2	
9.20 Gal		<b>FRESH WATER</b>								
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	Fresh Water	Fresh Water	120	bbl	8.33					
Cement Left In Pipe		Amount	41 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride: 0 ppm			Mix Water Temperature:		71 °F °C		
Plug Bumped?		Yes					Floats Held?		Yes	
Cement Returns:		32 bbl								
Comment										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	2/14/2019	00:30:00	USER				Called out the crew to be on location by 0600
Event	2	Depart Shop for Location	Depart shop forLocation	2/14/2019	04:00:00	USER				Held a safety huddle before leaving for location
Event	3	Arrive At Loc	Arrive At Loc	2/14/2019	05:00:00	USER				Held a Hazard Hunt before spotting in the trucks
Event	4	Safety Meeting	Safety Meeting	2/14/2019	14:30:00	USER				Held a safety meeting with the rig crew to discuss the operation and safety.
Event	5	Rig-up Lines	Rig-up Lines	2/14/2019	15:00:00	USER				Held a safety meeting before rigging up lines
Event	6	Start Job	Start Job	2/14/2019	15:47:23	COM5	0.00	8.53	47.00	Filled lines with 2 bbls water
Event	7	Pump Spacer 1	Pump Spacer 1	2/14/2019	15:49:31	COM5	0.00	0.18	14.00	Pumped 10 bbls water spacer
Event	8	Pump Spacer 2	Pump Spacer 2	2/14/2019	15:52:15	COM5	5.80	8.57	120.00	Pumped 10 bbls water spacer with red dye
Event	9	Pump Cement	Pump Cement	2/14/2019	15:55:21	COM5	0.00	8.55	58.00	Pumped 173 bbls Swiftcem. 560 sks, 13.5#, 1.74 yield, 9.2 gal/sks. Pumpe at 7 bpm and 230 psi.
Event	10	Shutdown	Shutdown	2/14/2019	16:21:53	COM5	0.00	10.68	44.00	Shut down and washed up on the cement head.
Event	11	Drop Top Plug	Drop Top Plug	2/14/2019	16:25:06	COM5	0.00	17.34	9.00	Dropped plug preloaded and witnessed by the company man
Event	12	Pump Displacement	Pump Displacement	2/14/2019	16:25:11	COM5	0.00	17.33	9.00	Pumped 120 bbls

										displacement. Got all the red dye back and 32 bbls cement back to surface.
Event	13	Bump Plug	Bump Plug	2/14/2019	16:48:10	COM5	0.00	8.35	1088.00	Bumped the plug at 500 psi and kicked out at 1000 psi. Held the pressure and it climbed to 1200 psi. Checked floats and got 1.5 bbls back on the truck. Floats held.
Event	14	End Job	End Job	2/14/2019	16:49:05	COM5	0.00	8.34	1184.00	
Event	15	Rig Down Lines	Rig Down Lines	2/14/2019	17:00:00	USER				Held a safety meeting before rigging down lines
Event	16	Depart Location	Depart Location	2/14/2019	18:00:00	USER				Held a safety huddle before leaving location

3.0 Attachments

3.1 MT FED HEATH 8W-20-13 Surface.png

