

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

United States of America

Date: Saturday, March 04, 2017

### **TC Mosier Hill 3-9-11**

Job Date: Thursday, February 16, 2017

Sincerely,

**Justin Lansdale**

## 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 **TC Mosier Hill 3-9-11** 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.

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 #: 3762927	Quote #:	Sales Order #: 0903838673
Customer: EXTRACTION OIL & GAS		Customer Rep: Hans Cary	
Well Name: TC MOISER HILL		Well #: 3-9-11	API/UWI #: 05-123-43742-00
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO
Legal Description: SE NE-8-5N-66W-2439FNL-1195FEL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 341	
Job BOM: 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Nicholas Roles	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	1587ft		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	1587		1587
Open Hole Section			13.5				0	1605		1605

**Tools and Accessories**

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			1587	Bottom Plug	9.625		HES
Float Collar	9.625			1545	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 Water Spacer	Red Dye Water Spacer	20	bbl	8.34			4		

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	550	sack	13.5	1.74		8	9.2	
94 lbm		<b>TYPE I / II CEMENT, BULK (101439798)</b>								
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	Displacement	Displacement	119	bbl	8.34			8		
Cement Left In Pipe		<b>Amount</b>	42 ft		<b>Reason</b>			<b>Shoe Joint</b>		
<b>Comment</b> Got 40bbbs 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	2/16/2017	17:00:00	USER	Crew call out for o/l at 2200
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/16/2017	20:30:00	USER	All crew aware of hazards and directions. All fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	2/16/2017	20:45:00	USER	Started journey management.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	2/16/2017	21:30:00	USER	Met with company man to discuss job details and procedure. Performed hazard hunt and site assessment. Rig had 200ft left to drill.
Event	5	Other	Other	2/16/2017	22:00:00	USER	Water Test- PH-6 Chlo-0 Temp-60 Cement temp-70
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	2/16/2017	22:15:00	USER	All hse present. Discussed bulk and iron placement and all red zone areas. Caution taped high pressure zones.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	2/16/2017	00:45:00	USER	Discussed job associated hazards, contingencies and job procedure with all job associated personnel.
Event	8	Start Job	Start Job	2/16/2017	01:12:48	COM1	TD-1605', TP-1587' 9.625" 36#, FC-1545', OH-13.5", MUD-9.7#
Event	9	Test Lines	Test Lines	2/16/2017	01:15:24	COM1	Pumped 5bbls fresh water to fill lines, established circulation, shutdown and closed manifold, performed 500psi k/o function test, proceeded to bring pressure to 3000psi. Held good no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	2/16/2017	01:21:23	COM1	Pumped 20bbls fresh water with 2# Red Dye at 4bpm 200psi
Event	11	Pump Cement	Pump Cement	2/16/2017	01:31:19	COM1	Pumped 550sks or 170.4bbls 13.5# 1.74y 9.2g/s Swiftcem at 8bpm 350psi.

Event	12	Check Weight	Check Weight	2/16/2017	01:32:57	COM1	Weight verified with pressurized mud scales.
Event	13	Check Weight	Check Weight	2/16/2017	01:40:32	COM1	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	2/16/2017	01:49:35	COM1	Weight verified with pressurized mud scales.
Event	15	Shutdown	Shutdown	2/16/2017	02:01:22	COM1	Shutdown to break cap and load top plug.
Event	16	Drop Top Plug	Drop Top Plug	2/16/2017	02:03:37	COM1	Dropped by HES supervisor, witnessed by company man.
Event	17	Pump Displacement	Pump Displacement	2/16/2017	02:05:20	COM1	Pumped 119.4bbls Fresh water at 8bpm 500psi
Event	18	Bump Plug	Bump Plug	2/16/2017	02:26:21	COM1	Slowed down to 3bpm at 110bbls away, final circulating pressure - 440psi, bumped at 940psi.
Event	19	Pressure Up Well	Pressure Up Well	2/16/2017	02:27:26	COM1	Brought pressure to 1500psi for 15min casing test.
Event	20	Other	Other	2/16/2017	02:38:18	COM1	Released pressure and got 1bbl back to truck.
Event	21	End Job	End Job	2/16/2017	02:38:46	COM1	Got 40bbls cement to surface.
Event	22	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	2/16/2017	02:40:00	USER	All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/16/2017	09:00:00	USER	All HSE present and fit to drive. Aware of directions and hazards.

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Event	24	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	2/16/2017	09:15:00	USER	Pre journey managment prior to departure.
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2.2 Custom Graph

