

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Friday, June 16, 2017

TC Mosier Hill #2-9-11 Production

Job Date: Monday, June 12, 2017

Sincerely,

Justin Lansdale

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 Summary4

2.0 Real-Time Job Summary 7

 2.1 Job Event Log7

3.0 Attachments..... 10

 3.1 Job Chart.....10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **TC Mosier Hill #2-9-11 Production** cement 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 #: 3762957		Quote #:		Sales Order #: 0904083810					
Customer: EXTRACTION OIL & GAS				Customer Rep: Larry Siegal							
Well Name: TC MOISER HILL			Well #: 2-9-11		API/UWI #: 05-123-43748-00						
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO					
Legal Description: SE NE-8-5N-66W-2430FNL-1195FEL											
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 341							
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		20511ft		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	1585	0	1585	
Casing		5.5	4.67	23			0	20511	0	7027	
Open Hole Section			8.5				1585	20526	1585	7027	
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			20511		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	3.79		4	
0.30 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)									
147.42 lbm/bbl		BARITE, BULK (100003681)									

35.40 gal/bbl		FRESH WATER							
0.30 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							
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	ElastiCem Lead	ELASTICEM (TM) SYSTEM	3175	sack	13.2	1.57		8	7.53
7.53 Gal		FRESH WATER							
0.35 %		SCR-100 (100003749)							
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	433	bbl	8.33			10	
Cement Left In Pipe		Amount	0ft			Reason		Wet Shoe	
Comment Got 40bbbls 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	6/11/2017	12:00:00	USER	Crew call out for o/l at 1600
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/11/2017	15:45:00	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	6/11/2017	16:00:00	USER	Started journey management.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	6/11/2017	16:30:00	USER	Met with company man to discuss job details and procedure. Performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/11/2017	16:40:00	USER	All hse present. Discussed bulk and iron placement and all red zone areas. Caution taped high pressure zones.
Event	6	Other	Other	6/11/2017	16:45:00	USER	Water Test- PH-6 Chlo-0 Temp-60 Cement temp-70
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	6/11/2017	21:15:00	USER	Discussed job associated hazards, contingencies and job procedure with all job associated personnel.
Event	8	Start Job	Start Job	6/11/2017	21:42:39	COM4	TD-20526', TP-20511' 5.5" 23#, FC-20506', TVD-7027', OH-8.5", SURF-1585' 9.625" 36#, MUD-9.5#
Event	9	Test Lines	Test Lines	6/11/2017	21:52:36	COM4	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 1780psi, proceeded to bring pressure to 5000psi, held well and no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	6/11/2017	21:56:43	COM4	Pumped 50bbls of 11.5# 3.74y 23.7g/s Tuned Spacer III with 15g Musol A, 15g Dual Spacer B and 10g D-air at 4bpm 640psi.
Event	11	Check Weight	Check Weight	6/11/2017	22:00:04	COM4	Weight verified with pressurized mud

							scales.
Event	12	Pump Lead Cement	Pump Lead Cement	6/11/2017	22:09:43	COM4	Pumped 3175sks or 887.8bbls of 13.2# 1.57y 7.53g/s Elasticem at 8bpm 790psi.
Event	13	Check Weight	Check Weight	6/11/2017	22:19:42	COM4	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	6/11/2017	22:41:48	COM4	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check Weight	6/11/2017	23:09:29	COM4	Weight verified with pressurized mud scales.
Event	16	Check Weight	Check Weight	6/11/2017	23:33:29	COM4	Weight verified with pressurized mud scales.
Event	17	Check Weight	Check Weight	6/11/2017	23:59:00	COM4	Weight verified with pressurized mud scales.
Event	18	Pump Spacer 2	Pump Spacer 2	6/12/2017	00:21:09	COM4	Pumped 10bbls fresh water with 3.75g MMCR at 4.5bpm 250psi before plug for wet shoe
Event	19	Other	Other	6/12/2017	00:25:01	COM4	Shutdown washed up pump with 5bbls fresh water to clean any residual cement left in truck and pump in 4 sided tank.
Event	20	Drop Top Plug	Drop Top Plug	6/12/2017	00:28:32	COM4	Dropped by KLX tool hand, witnessed by company man and HES supervisor.
Event	21	Pump Displacement	Pump Displacement	6/12/2017	00:28:35	COM4	Pumped 433bbls fresh water at 10bpm-3200psi with 1.25gMMCR in first 10bbls.
Event	22	Bump Plug	Bump Plug	6/12/2017	01:19:57	COM4	Slowed down at 400bbls away to 5bpm, final circulating pressure-2298psi. Bumped at 2800psi and imidiatly after bump pressure fell off to 1560psi.

Event	23	Check Floats	Check Floats	6/12/2017	01:22:02	USER	Released pressure and got 7bbls back to truck and floats were not holding.
Event	24	Check Floats	Check Floats	6/12/2017	01:27:10	USER	Pumped 8bbls back into well at 5bpm and bumped again at 2900psi. Pressure stabilized and rose after shutdown. Released pressure and got 4bbls fresh water back, Floats held on second attempt.
Event	25	End Job	End Job	6/12/2017	01:35:55	USER	Got 40bbls cement to surface.
Event	26	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	6/12/2017	01:45:00	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	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/12/2017	06:15:00	USER	All HSE present and fit to drive. Aware of directions and hazards.
Event	28	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	6/12/2017	06:30:00	USER	Pre journey managment prior to departure.

3.0 Attachments

3.1 Job Chart



