

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Wednesday, May 09, 2018

Extraction Trott 7W-20-16N

Job Date: Wednesday, April 25, 2018

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 Summary4

2.0 Real-Time Job Summary 7

 2.1 Job Event Log7

3.0 Attachments..... 10

 3.1 Extraction Trott 7W-20-16N Surface.png.....10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Trott 7W-20-16N** 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 22 BBL's of cement 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 #: 3833882		Quote #:		Sales Order #: 0904807650				
Customer: EXTRACTION OIL & GAS -				Customer Rep: Larry Siegal						
Well Name: TROTT			Well #: 7W-20-16N		API/UWI #: 05-123-45707-00					
Field: WATTENBERG		City (SAP): MEAD		County/Parish: WELD		State: COLORADO				
Legal Description: NE SE-7-4N-68W-1548FSL-1020FEL										
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 901						
Job BOM: 7521 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Nicholas Peterson						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		1,596		Job Depth TVD		1,605				
Water Depth				Wk Ht Above Floor		5'				
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	1596	0	0
Open Hole Section			13.5				0	1605	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625	1		1,596		Top Plug	9.625	1	HES	
Float Shoe	9.625			1,554						
						Plug Container	9.625	1	HES	
						Centralizers	9.625	18		
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	Spacer	Red Dye Spacer	20	bbl	8.33			4	840	
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	Cement	SWIFTCEM (TM) SYSTEM	525	sack	13.5	1.74	9.2	8	4,830
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	Displacemnt	Fresh Water	120	bbl	8.33			8	
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint	
Mix Water:		pH 6.8	Mix Water Chloride: 0 ppm			Mix Water Temperature:		57 °F	
Cement Temperature:		## °F	Plug Displaced by: 8.33 lb/gal			Disp. Temperature:		57 °F	
Plug Bumped?		Yes	Bump Pressure: 560 psi			Floats Held?		Yes	
Cement Returns:		22 bbl	Returns Density: 13.5 lb/gal			Returns Temperature:		## °F	
Comment: Pumped 20 bbls Spacer, 163 bbls Cement, 120 bbls Displacement, Cement to surface @ 98 bbls away 22 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	4/24/2018	12:00:00	USER				CREW CALLED OUT AT 12:00, REQUESTED ON LOCATION 18:00. CREW PICKED UP CEMENT, 100 LBS OF SUGAR, TOP PLUG AND 2 LBS RED DYE FROM FT. LUPTON, CO. BULK 660, 11527037, 10866497, AND PUMP 11189145.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/24/2018	13:00:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	4/24/2018	13:15:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location	4/24/2018	14:00:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; CASING- 9.625 36# @ 1,596', 13.5" HOLE 1,605' SHOE 42', FRESH WATER DISPLACEMENT. 18 CENTRALIZERS. CASING LANDED @ 21:00 04/24/2018.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/24/2018	18:00:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	4/24/2018	18:15:00	USER				CREW STAGED EQUIPMENT

										AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Rig-Up Completed	Rig-Up Completed	4/24/2018	18:30:00	USER				WAITED ON RIG TO FINISH RUNNING CASING.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/24/2018	21:30:00	USER	0.00	0.00	-2.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	4/24/2018	21:57:17	COM5				BEGIN RECORDING JOB DATA.
Event	10	Test Lines	Test Lines	4/24/2018	21:59:04	COM5	8.19	0.00	70.00	PRESSURE TESTED IRON TO 3000 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 760 PSI, 5TH GEAR STALL OUT @ 1,880 PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	4/24/2018	22:02:26	COM5	1.79	0.00	1.00	PUMP 20 BBLS OF FRESH WATER WITH RED DYE. PUMP RATE 4 BBLS/MIN @ 190 PSI.
Event	12	Pump Lead Cement	Pump Lead Cement	4/24/2018	22:11:15	COM5	12.78	2.90	172.00	PUMP 525 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.74 FT3/SK, 9.2 GAL/SK 162.70 BBLS. HOL 1,605' TOL CALCULATED @ SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN 570 PSI.
Event	13	Drop Top Plug	Drop Top Plug	4/24/2018	22:36:24	COM5	14.22	0.00	27.00	PLUG LEFT CONTAINER, VERIFIED BY COMPANY REP.
Event	14	Pump Displacement	Pump Displacement	4/24/2018	22:37:14	COM5	14.00	0.00	13.00	BEGIN CALCULATED DISPLACEMENT OF 120 BBLS FRESH WATER. CEMENT TO SURFACE @ 98

										BBLS AWAY IN DISPLACEMENT, 22 BBLS CEMENT TO SURFACE.
Event	15	Bump Plug	Bump Plug	4/24/2018	22:56:07	COM5	7.92	0.00	745.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 560 PSI OVER BUMP TO 900 PSI.
Event	16	Check Floats	Check Floats	4/24/2018	22:56:53	USER	7.94	0.00	412.00	RELEASED PRESSURE, FLOATS HELD, 1 BBL BACK.
Event	17	End Job	End Job	4/24/2018	22:57:33	COM5	7.91	0.00	19.00	STOP RECORDING JOB DATA.
Event	18	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/24/2018	23:00:00	USER	7.90	0.00	13.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	19	Rig-Down Equipment	Rig-Down Equipment	4/24/2018	23:15:00	USER				RIG DOWN BULK AND MIXING EQUIPMENT.
Event	20	Rig-Down Completed	Rig-Down Completed	4/24/2018	23:50:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	21	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/24/2018	23:55:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	22	Depart Location	Depart Location	4/25/2018	00:00:00	USER				THANK YOU FOR USING HALLIBURTON - NICK PETERSON AND CREW.

3.0 Attachments

3.1 Extraction Trott 7W-20-16N Surface.png

