

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Tuesday, August 29, 2017

CS-Sherwood 3-1-13 Production

Job Date: Wednesday, August 23, 2017

Sincerely,

Julia Nichols

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **CS Sherwood 3-1-13 cement Production** 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 50 barrels 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]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404		Ship To #: 3727302		Quote #:		Sales Order #: 0904249600					
Customer: EXTRACTION OIL & GAS				Customer Rep: Kalyn Holgate							
Well Name: CS-SHERWOOD			Well #: 3-1-13			API/UWI #: 05-123-42912-00					
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO					
Legal Description: SW SE-36-6N-66W-339FSL-1936FEL											
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 341							
Job BOM: 7523 7523											
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		20354ft			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	1575	0	1575	
Casing		5.5	4.67	23			0	20354	0	6950	
Open Hole Section			8.75				1575	7700	1575	6950	
Open Hole Section			8.5				7700	20365	0	0	
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			20354		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 ft ³ /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	3.73		5			
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)									
149.34 lbm/bbl		BARITE, BULK (100003681)									
35 gal/bbl		FRESH WATER									
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)									

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Cementing Job Summary

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	ELASTICEM (TM) SYSTEM	3250	sack	13.2	1.57		8	7.53
7.53 Gal		FRESH WATER							
0.40 %		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	432.5	bbl	8.33			10	
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe	
Comment Got 50bbbls cement to surface.									

2.0 Real-Time Job Summary

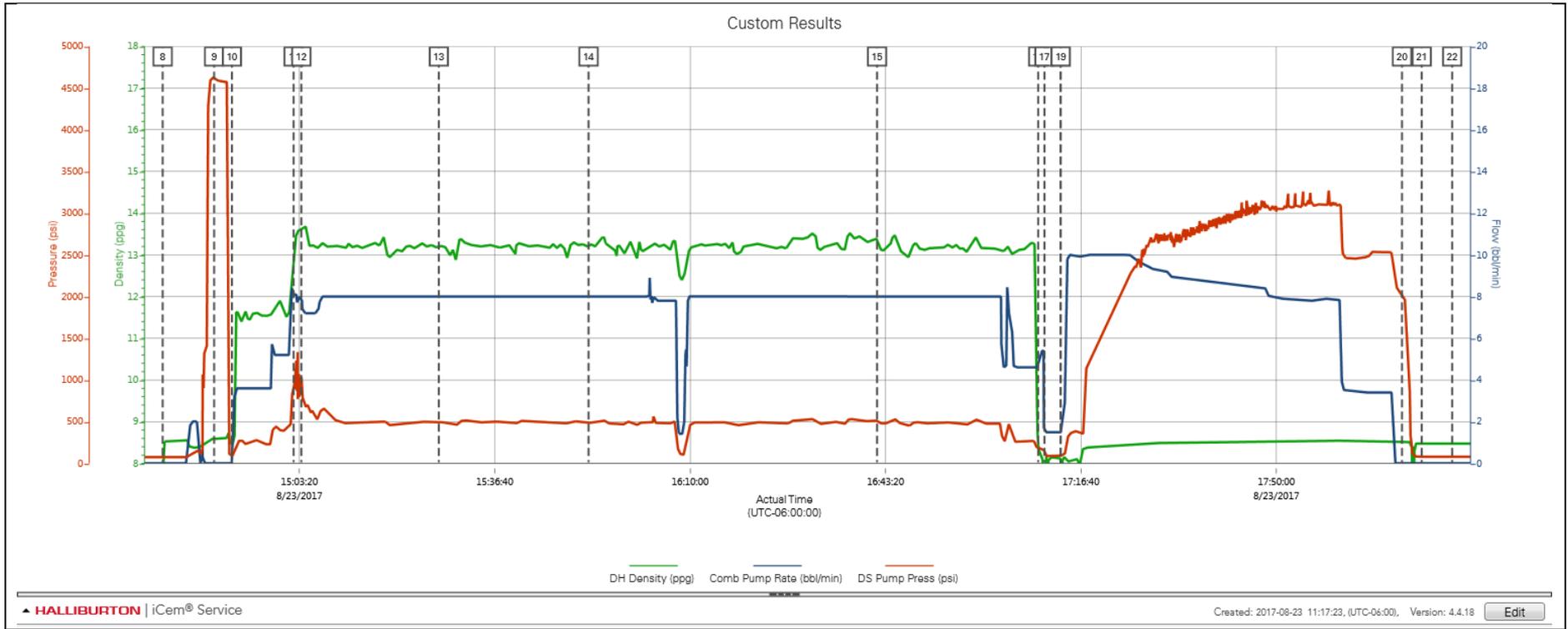
2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	8/23/2017	03:00:00	USER				Called out by Service Coordinator for O/L at 0900
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	8/23/2017	07:15:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/23/2017	07:30:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Other Job or Site	8/23/2017	08:30:00	USER				Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/23/2017	08:45:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	8/23/2017	09:30:00	USER				Water test- PH-6, Chlor-0, Temp-70. Cement temp-75.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/23/2017	14:10:00	USER	8.57	0.00	76.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	8/23/2017	14:40:00	COM4	7.23	0.00	74.00	T
Event	9	Test Lines	Test Lines	8/23/2017	14:48:47	COM4	8.59	0.00	4621.00	Pumped 5bbbls fresh water to fill lines at 2bpm 110psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1560psi, proceeded to bring pressure to 4500psi, held well and no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	8/23/2017	14:51:49	COM4	8.47	0.00	85.00	Pumped 50bbbls of 11.5# 3.78y 23.8g/s Tuned Spacer III with 25g Musol A, 25g Dual Spacer B and 10g D-air at 5bpm 445psi.
Event	11	Pump Cement	Pump Cement	8/23/2017	15:02:20	COM4	13.04	8.10	915.00	Pumped 3250sks or 908.8bbbls of 13.2# 1.57y 7.53g/s Elasticem at 8bpm 637psi.
Event	12	Check Weight	Check weight	8/23/2017	15:03:39	COM4	13.65	8.00	858.00	Weight verified with pressurized mud scales.

Event	13	Check Weight	Check weight	8/23/2017	15:27:06	COM4	13.21	8.00	489.00	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check weight	8/23/2017	15:52:39	COM4	13.23	8.00	481.00	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check weight	8/23/2017	16:41:52	COM4	13.40	8.00	520.00	Weight verified with pressurized mud scales.
Event	16	Pump Spacer 2	Pump Spacer 2	8/23/2017	17:09:22	COM4	8.45	4.60	164.00	Pumped 7bbls fresh water with 2.5g MMCR before plug for wet shoe
Event	17	Shutdown	Shutdown	8/23/2017	17:10:26	COM4	5.64	1.50	122.00	
Event	18	Drop Top Plug	Drop Top Plug	8/23/2017	17:13:10	COM4	8.12	1.40	85.00	Dropped by KLX tool hand, witnessed by company man and HES supervisor.
Event	19	Pump Displacement	Pump Displacement	8/23/2017	17:13:13	COM4	8.12	1.50	85.00	Pumped 431bbls fresh water at 10bpm-3200psi. with 2.5gMMCR in first 10bbls. Pumped 1.5bbls over calculated and did not bump. Final Circulating Pressure-2460psi
Event	20	Check Floats	Check Floats	8/23/2017	18:11:26	USER	8.54	0.00	2019.00	Got 3bbls fresh water back. Floats held.
Event	21	End Job	End Job	8/23/2017	18:14:48	COM4				Got 50bbls cement to surface.
Event	22	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/23/2017	18:20:00	USER	8.48	0.00	79.00	Discussed rigging down hazards and procedure according to HMS.
Event	23	Depart Location Safety Meeting	Depart Location Safety Meeting	8/23/2017	19:45:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	24	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/23/2017	20:00:00	USER				Pre journey management prior to departure.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

