

HALLIBURTON

iCem[®] Service

SRC ENERGY CORPORATION

Harvesters State 4C-16-M Production

Sincerely,
Meghan Jacobs

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..... 9

 3.1 Harvesters State 4C-16-M Production – Job Chart with Events9

 3.2 Harvesters State 4C-16-M Production – Job Chart without Events10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Harvesters State 4C-16-M** 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 23bbbls 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]

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 359915	Ship To #: 3859911	Quote #:	Sales Order #: 0904799902							
Customer: SRC ENERGY INC-EBUS		Customer Rep: Lovel Young								
Well Name: HARVESTERS STATE	Well #: 4C-16-M	API/UWI #: 05-123-46372-00								
Field: WATTENBERG	City (SAP): LUCERNE	County/Parish: WELD	State: COLORADO							
Legal Description: SW NE-15-6N-66W-1633FNL-2333FEL										
Contractor: Precision		Rig/Platform Name/Num: Precision 462								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307		Srvc Supervisor: Steven Markovich								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	15209ft	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	LTC	J-55	0	1802	0	1802
Casing	0	5.5	4.778	20	BTC	P-110	0	15209	0	0
Open Hole Section			8.5				1802	15218		0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			15209		Top Plug	5.5		HES	
Float Shoe	5.5					Bottom Plug	5.5		HES	
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5		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	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.8		6		
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

HALLIBURTON

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 LEAD	ELASTICEM (TM) SYSTEM	1065	sack	13.2	1.57		6	7.54
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	NeoCem	NeoCem TM	986	sack	13.2	2.04		4	9.77
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
4	MMCR Displacement	MMCR Displacement	90	bbl	8.34				
0.2220 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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
5	Water	Water	243	bbl	8.33				
1 gal/bbl		CLA-WEB - BULK (101985043)							

Comment Spacer to surface at 270bbls away, cement to surface at 310bbls away bringing 23bbls of cement to surface. Bumped plug at 333bbls away, final lift pressure was 2597psi Brought pressure 500psi over and held. Kicked in pumps to sheer WSS, WSS sheered at 4929psi then pumped a 6bbl wet shoe. Estimated Top of Tail Cement 6490'

2.0 Real-Time Job Summary

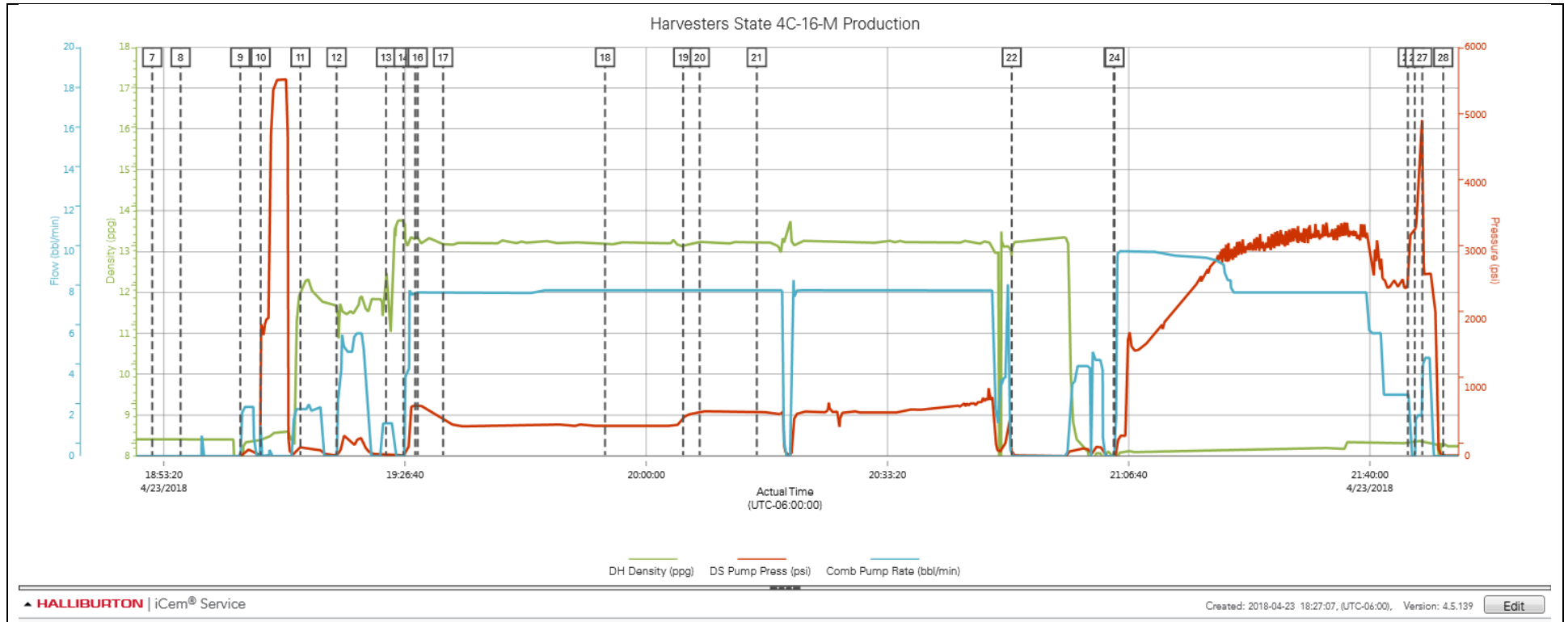
2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	4/23/2018	12:30:00	USER				Job called out with an on location time of 1700.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/23/2018	15:30:00	USER				JSA with HES crew on driving safety and route to rig.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	4/23/2018	16:50:00	USER				Arrived on location, Rig was rigging down the casing crew.
Event	4	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	4/23/2018	16:55:00	USER				JSA and hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	4/23/2018	17:00:00	USER				Rigged up HES lines and equipment.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/23/2018	18:30:00	USER				JSA with HES and the rig crew on job safety and procedure.
Event	7	Start Job	Start Job	4/23/2018	18:51:43	COM4	8.41	-4.00	0.00	TD 15218' TP 15209.27' WSS 15096' 5 1/2" 20# production casing, 9 5/8" 36# surface casing at 1802' , 8 1/2" open hole TVD 7231'
Event	8	Check Weight	Check weight	4/23/2018	18:55:38	COM4	8.41	-4.00	0.00	Weight verified by pressurized scales.
Event	9	Other	Other	4/23/2018	19:03:53	COM4	0.00	-4.00	0.00	Fill lines.
Event	10	Test Lines	Test Lines	4/23/2018	19:06:42	COM4	8.29	1971.00	0.20	Set kick outs to 500psi and check kick outs. Then bring pressure up to 5500psi and hold.
Event	11	Pump Spacer 1	Pump Spacer 1	4/23/2018	19:12:12	COM4	12.01	129.00	2.30	Pump 40bbls of 11.5ppg 3.5yield Tuned Spacer. Added 20 gallons of Musol A and Dual Spacer B on the fly. Pumped at 5bbl/min 265psi.
Event	12	Check Weight	Check weight	4/23/2018	19:17:12	COM4	11.68	13.00	0.00	Weight verified by pressurized scales.
Event	13	Drop Bottom Plug	Drop Bottom Plug	4/23/2018	19:24:02	USER	12.40	21.00	1.60	Plug pre loaded into HES head. Plug loaded and dropped in front of company rep.
Event	14	Check Weight	Check weight	4/23/2018	19:26:26	COM4	13.77	6.00	0.00	Weight verified by pressurized scales.

Event	15	Pump Lead Cement	Pump Lead Cement	4/23/2018	19:28:03	COM4	13.33	721.00	8.00	Pump 297bbls (1065sk) of 13.2ppg 1.57yield Lead Cement. Pumped at 8bbl/min 430psi.
Event	16	Check Weight	Check weight	4/23/2018	19:28:24	COM4	13.35	721.00	8.00	Weight verified by pressurized scales.
Event	17	Check Weight	Check weight	4/23/2018	19:31:55	COM4	13.17	537.00	8.00	Weight verified by pressurized scales.
Event	18	Check Weight	Check weight	4/23/2018	19:54:18	COM4	13.19	448.00	8.10	Weight verified by pressurized scales.
Event	19	Pump Tail Cement	Pump Tail Cement	4/23/2018	20:05:05	COM4	13.16	573.00	8.10	Pump 358bbls (986sk) of 13.2ppg 2.04yield Tail Cement. Pumped at 8bbl/min 650psi.
Event	20	Check Weight	Check weight	4/23/2018	20:07:23	COM4	13.23	646.00	8.10	Weight verified by pressurized scales.
Event	21	Check Weight	Check weight	4/23/2018	20:15:16	COM4	13.22	640.00	8.10	Weight verified by pressurized scales.
Event	22	Shutdown	Shutdown	4/23/2018	20:50:30	COM4	12.92	69.00	0.00	Shutdown and clean pumps and lines.
Event	23	Drop Top Plug	Drop Top Plug	4/23/2018	21:04:36	COM4	8.07	-13.00	0.00	Plug pre loaded into HES head. Plug loaded and dropped in front of company rep.
Event	24	Pump Displacement	Pump Displacement	4/23/2018	21:04:42	COM4	8.07	-13.00	0.00	Pump 333bbls of H2O. First 20bbls with MMCR then 243bbls with Clay web and Biocide, then the last 70 with MMCR, Pumped at 10bbl/min and slowed rate with pressure increase. Spacer to surface at 270bbls away, cement to surface at 310 away bringing 23bbls of cement to surface.
Event	25	Bump Plug	Bump Plug	4/23/2018	21:45:15	COM4	8.32	2597.00	3.00	Bumped plug at 333bbls away, final lifting pressure was 2597psi. Brought pressure 500psi over and held.
Event	26	Other	Other	4/23/2018	21:46:12	COM4	8.34	3314.00	0.00	Kicked in pumps at 2bbl/min to shear WSS. WSS sheered at 4929psi.
Event	27	Other	Other	4/23/2018	21:47:14	COM4	8.39	3352.00	2.00	Pumped 6bbl wet shoe at 5bbl/min. Opened release line to check floats and after 2 1/2bbls back the float held.
Event	28	End Job	End Job	4/23/2018	21:50:08	COM4	8.28	9.00	0.00	Thank you Steve Markovich and crew.

3.0 Attachments

3.1 Harvesters State 4C-16-M Production – Job Chart with Events



3.2 Harvesters State 4C-16-M Production – Job Chart without Events

