

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY INC-EBUS**

**Bost Farm 41N-8B-L Production**

Sincerely,  
**Meghan Jacobs**

## Legal Notice

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## 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Bost Farm 41N-8C-L 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 22 bbls 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 Fort Lupton**

## HALLIBURTON

## Cementing Job Summary

*The Road to Excellence Starts with Safety*

Sold To #: 359915		Ship To #: 3902145		Quote #: 0022520670		Sales Order #: 0905325370				
Customer: SRC ENERGY INC-EBUS				Customer Rep: Buddy Davis						
Well Name: BOST FARM			Well #: 41N-8B-L		API/UWI #: 05-123-47700-00					
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO				
Legal Description: SW NW-7-5N-66W-1417FNL-940FWL										
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 462						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307				Srvc Supervisor: Kamereon White						
<b>Job</b>										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		17620 ft		Job Depth TVD		7238				
Water Depth				Wk Ht Above Floor 20						
Perforation Depth (MD)		From		To						
<b>Well Data</b>										
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	1818	0	1818
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	17602	0	7238
Open Hole Section			8.5				1818	17620	1818	7238
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
	5.5			17533	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		
<b>Fluid Data</b>										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.84	24.0			
Stage/Plug #: 2										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	ElastiCem Cap	ELASTICEM (TM) SYSTEM	417	sack	13.2	1.57		6	7.52	

## HALLIBURTON

## Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	LockCem	SBM LOCKCEM CEMENT BBL	353	sack	13.3	1.59		6	7.61	
4	ElastiCem Cap	ELASTICEM (TM) SYSTEM	399	sack	13.2	1.57		6	7.52	
5	NeoCem	NeoCem TM	1164	sack	13.2	2.06		6	9.83	
6	MMCR Displacement	MMCR Displacement	20	bbl	8.34					
0.20 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
7	Water	Water	297	bbl	8.33					
8	MMCR Displacement	MMCR Displacement	70	bbl	8.34					
0.20 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
Cement Left In Pipe		Amount	40 ft		Reason			Shoe Joint		
Mix Water:		pH	7		Mix Water Chloride:		< 500 ppm			
		Plug Displaced by:		8.33 lb/gal		Mix Water Temperature:		79 °F		
Plug Bumped?		Yes		Bump Pressure:		2800 psi		Floats Held?		
								Yes		
Comment										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Comments
Event	1	Call Out	Call Out	12/7/2018	03:00:00	USER				Crew called out and was requested to be on location @ 10:00.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	12/7/2018	08:00:00	USER				Crew discussed the route of travel and supervisor called in a journey.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	12/7/2018	08:30:00	USER				Crew left the yard.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	12/7/2018	09:30:00	USER				Crew arrived on location early and the rig was running casing.
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	12/7/2018	09:40:00	USER				Spotting in trucks and supervisor met with the customer and got the well information. TD-17,620' TP-17,602' SJ-106' FC-17,496' Cas-5.5" 20 # P110 PC-9.625" 36# Set @ 1818' Mud Weight-9.8 ppg OBM, Wet Shoe- 6 Bbls TVD-7238' OH-8.5."
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/7/2018	09:50:00	USER				Discussed rig up procedure and signed the JSA.
Event	7	Rig-Up Equipment	Rig-Up Equipment	12/7/2018	10:00:00	USER				Rigged up all HES equipment and lines.
Event	8	Rig-Up Completed	Rig-Up Completed	12/7/2018	11:30:00	USER				All HES equipment and lines rigged up safely.
Event	9	Casing on Bottom	Casing on Bottom	12/7/2018	13:00:00	USER				Casing on Bottom with the landing Joint. Rig circulated 291 gpm 870 psi through the CRT.
Event	10	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	12/7/2018	15:00:00	USER	-10.31	0.00	0.00	Pre rig up Safety meeting for the commander head. Baseline pressure 870 psi through the CRT @ 291 gpm.
Event	11	Other	Other	12/7/2018	15:30:00	USER	-10.31	0.00	0.00	Lifted the Commander Head to the rig floor and set it in the casing. Torqued the top drive to 30K then rigged up the stiff arm and iron before torquing the adapter to 18.5K.
Event	12	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/7/2018	16:40:00	USER	-14.08	0.00	0.00	Discussed the job procedure and pressures with all personnel involved with the cement job.

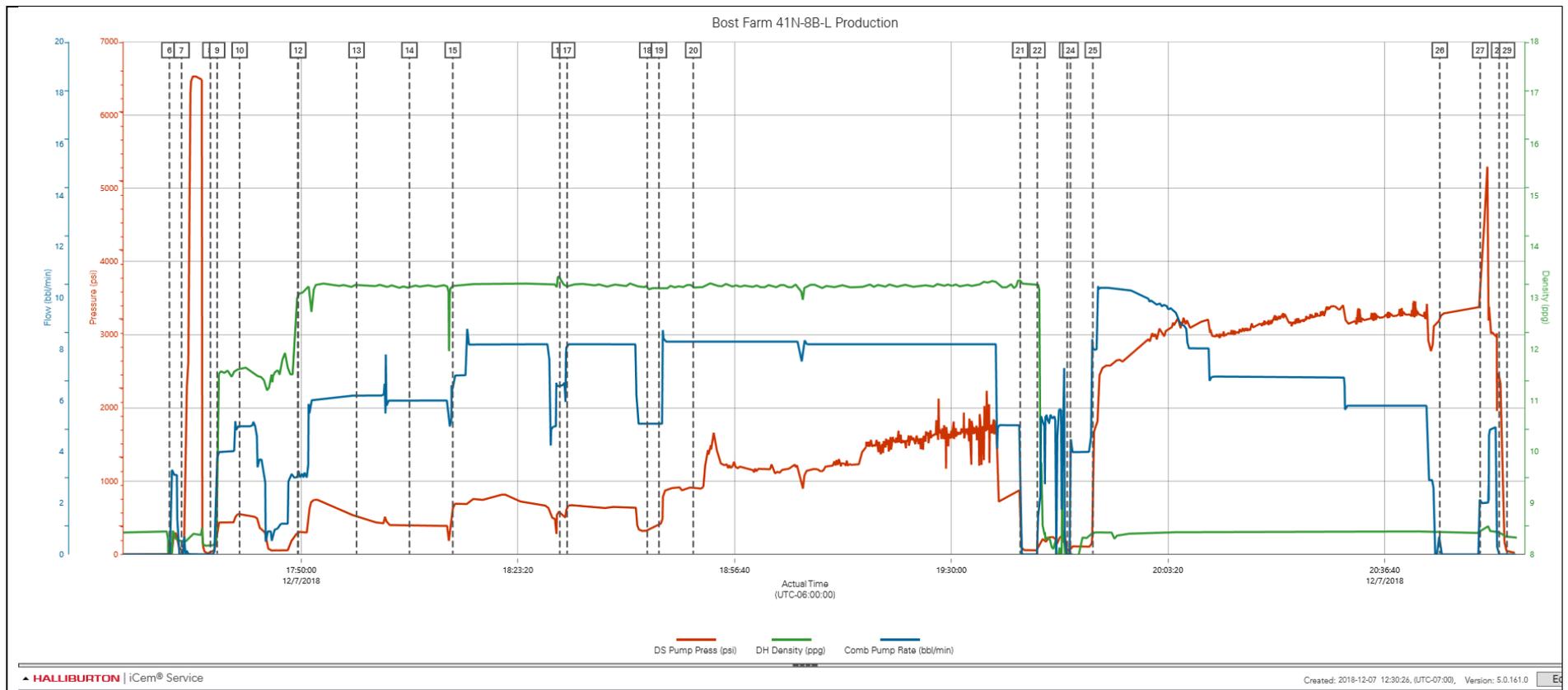
Event	13	Prime Pumps	Prime Pumps	12/7/2018	17:00:00	RTD Import	-15.96	0.00	0.00	Prime Pumps
Event	14	Comment	Mud Cup Sample Pulled	12/7/2018	17:06:00	RTD Import	-15.02	0.00	0.00	Mud Cup Sample Pulled
Event	15	Other	Other	12/7/2018	17:18:00	USER	-16.91	0.00	0.00	Established circulation through the commander head. 656 psi @ 291 gpm. Established baseline torque of 11K @ 30 RPM. Circulated and rotated while batching up cement and Spacer.
Event	16	Start Job	Start Job	12/7/2018	17:25:00	USER	-16.91	0.00	0.00	Stopped rotating to fill lines and to pressure test.
Event	17	Other	Other	12/7/2018	17:28:00	RTD Import	-15.96	0.00	0.00	Fill lines with 3 bbls of water 3 bpm 300 psi.
Event	18	Test Lines	Test Lines	12/7/2018	17:31:00	RTD Import	-17.85	0.00	0.00	Test lines to 500 psi for EKO's. Performed a high pressure test to 6500 psi and held for 2 min, No leaks.
Event	19	Drop Bottom Plug	Drop Bottom Plug	12/7/2018	17:35:00	RTD Import	-16.91	0.00	0.00	Stopped rotating the commander head to drop the bottom plug. Witnessed by the customer and a Halliburton Rep.
Event	20	Pump Spacer 1	Pump Tuned Spacer	12/7/2018	17:36:00	RTD Import	-16.91	0.00	0.00	Started to rotate the commander head @ 30 rpm. Torque 11,000 lbs during Tuned Spacer. Pumped 40 bbls of spacer with Musol A and Dual B @ 11.5 ppg 3.84 yield 24.0 gal/sk
Event	22	Pump Cap Cement	Pump Cap Cement*	12/7/2018	17:48:00	RTD Import	-16.91	0.00	0.00	50 bbls into Cap cement the torque dropped to 8000K. Pumped 117 bbls of Cap cement @ 13.2 ppg 1.57 yield 7.52 gal/sk (417 sks)
Event	40	Pump Lead Cement	Pump LockCemCement*	12/7/2018	18:12:00	RTD Import	0.28	8.42	0.00	Torque began climbing during LockCem Lead Cement to approximately 10K. Pumped 100 bbls @ 13.3 ppg 1.59 yield 7.61 gal/sk (353 sks) 8 bpm 770 psi.
Event	50	Pump Cap Cement	Pump Cap Cement*	12/7/2018	18:28:00	RTD Import	6479.33	8.38	0.00	Pumped 112 bbls of Cap Cement @ 13.2 ppg 1.57 yield 7.52 gal/sk (399 sks) 8 bpm 670 psi.
Event	54	Comment	Mud Cup Sample Pulled	12/7/2018	18:33:51	RTD Import	547.12	11.61	4.97	Mud Cup Sample Pulled
Event	65	Comment	Mud Cup Sample Pulled	12/7/2018	18:42:49	RTD Import	317.07	13.10	3.10	Mud Cup Sample Pulled
Event	69	Comment	Mud Cup Sample Pulled	12/7/2018	18:51:50	RTD Import	554.66	13.27	6.16	Mud Cup Sample Pulled

Event	73	Comment	Mud Cup Sample Pulled	12/7/2018	18:59:57	RTD Import	290.67	13.21	6.00	Mud Cup Sample Pulled
Event	80	Comment	Mud Cup Sample Pulled	12/7/2018	19:24:14	RTD Import	661.20	13.22	8.19	Mud Cup Sample Pulled
Event	86	Comment	Mud Cup Sample Pulled	12/7/2018	19:36:33	RTD Import	351.95	13.17	5.11	Mud Cup Sample Pulled
Event	91	Pump Tail Cement	Pump Tail Cement*	12/7/2018	19:38:33	RTD Import	357.61	13.20	5.09	Torqued climbed throughout Tail to a peak of 18K, Pumped 427 bbls of Tail cement @ 13.2 ppg 2.06 yield 9.83 (1164 sks) 8 bpm 920 psi.
Event	92	Shutdown	Shutdown	12/7/2018	19:40:00	RTD Import	884.64	13.25	8.31	Continued rotating @ 18K while we shut down and washed pumps and lines.
Event	93	Clean Lines	Clean Lines	12/7/2018	19:42:00	RTD Import	1129.78	13.21	8.31	Cleaned pumps and lines through the rigs flow line.
Event	94	Comment	Mud Cup Sample Pulled	12/7/2018	19:43:38	RTD Import	902.56	13.22	8.32	Mud Cup Sample Pulled
Event	96	Drop Top Plug	Drop Top Plug	12/7/2018	19:47:00	RTD Import	1554.05	13.27	8.33	Dropped the top plug and the customer and Halliburton rep witnessed.
Event	97	Pump Displacement	Pump Displacement*	12/7/2018	19:48:00	RTD Import	1265.54	13.22	8.32	Performed flush sequence, sequence stopped short and left both plug chambers in the closed position. We opened the chambers to continue displacement. Pumped 387 bbls with the first 20 bbls with MMCR 4 bpm til we caught the plug, and used claweb till the last 70 bbls then we used MMCR again.
Event	99	Displ Reached Cement	Displ Reached Cement	12/7/2018	19:53:00	RTD Import	1019.47	13.22	8.32	Displ Reached Cement @ 20 bbls into displacement, we caught the plug and picked our rate up to 10 bpm kept the pressure under 3500 psi as per customer request. Torque climbed steadily throughout displacement to a peak of 23K.
Event	121	Bump Plug	Bump Plug	12/7/2018	20:45:00	RTD Import	838.45	8.38	8.41	@ 20:40 we stopped rotating 25 bbls before bumping the plug. Final torque 23K @ 30 RPM. Bump Plug on calculated displacement. The final circulating psi was 2800 psi and took 500 psi over to 3300 psi and shutdown.
Event	123	Other	Shift Wet Shoe Sub	12/7/2018	20:50:00	RTD Import	2781.60	8.38	10.33	Pressured up to shift the wet shoe sub @ 5300 psi.
Event	124	Other	Checked Floats	12/7/2018	20:52:00	RTD Import	2885.31	8.41	10.20	Checked the floats and the floats held we got 3 bbls back.

Event	125	Safety Meeting	Safety Meeting	12/7/2018	21:00:00	RTD Import	2935.28	8.43	8.03	Held a pre rig down safety meeting for the commander head with HES and Rig Crew.
Event	126	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	12/7/2018	21:00:00	USER	2935.28	8.43	8.03	Crew held a safety meeting discussing the rig down and flush stack procedure. Also all potential hazards associated with rigging down all HES equipment and lines.
Event	127	Rig Down Lines	Rig Down Lines	12/7/2018	21:20:00	USER	3041.81	8.44	6.93	The crew flushed the rigs stack with sugar water and rigged down all HES equipment and lines.
Event	134	Rig-Down Completed	Rig-Down Completed	12/7/2018	22:30:00	USER				Rig down completed no one got hurt.
Event	135	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/8/2018	00:50:00	USER				The crew held a pre journey safety meeting discussing the route and potential hazards while driving. The supervisor called in a journey.
Event	136	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	12/8/2018	01:00:00	USER				Kamereon White and crew would like to thank you for your business and choosing Halliburton Cement. Please give us a call if you have any questions.

## 3.0 Attachments

### 3.1 Bost Farm 41N-8B-L Production – Job Chart with Events



3.2 Bost Farm 41N-8B-L Production – Job Chart without Events

