HALLIBURTON

iCem® Service

Extraction Oil & Gas

Date: Sunday, January 22, 2017

TC AIMS C4-9-11 Production

Job Date: Sunday, January 15, 2017

Sincerely,

Julia Nichols

Legal Notice

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **TC Aims C4-9-11** 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 60 barrels of cement was 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 #: 369404	**Ship To #:** 3762926	**Quote #:**	**Sales Order #:** 0903765537
Customer: EXTRACTION OIL & GAS		**Customer Rep:** Hans	
Well Name: TC AIMS	**Well #:** C4-9-11		**API/UWI #:** 05-123-43743-00
Field: WATTENBERG	**City (SAP):** GREELEY	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SE NE-8-5N-66W-2558FNL-1193FEL			
Contractor: PATTERSON-UTI ENERGY		**Rig/Platform Name/Num:** PATTERSON 341	
Job BOM: 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		**Srvc Supervisor:** Jacob Nelson	

Job

Formation Name					
Formation Depth (MD)	**Top**		**Bottom**		
Form Type			**BHST**		
Job depth MD	20295ft		**Job Depth TVD**		
Water Depth			**Wk Ht Above Floor**	3	
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	4.778	20			0	20295	0	7260
Open Hole Section			8.5				1585	20312	1585	7260

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe						Top Plug	5.5	1	KLM
Float Shoe	5.5	1	KLM	20295		Bottom Plug			
Float Collar	5.5	1	KLM	20292		SSR plug set			
Insert Float						Plug Container	5.5	1	HES
Stage Tool						Centralizers	5.5		

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	3.74		5	
0.30 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)							
149.34 lbm/bbl		BARITE, BULK (100003681)							
36.09 gal/bbl		FRESH WATER							
0.30 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 W/O CBL	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		7	7.48
7.48 Gal		FRESH WATER							
0.90 %		HR-5, 50 LB SK (100005050)							

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	ElastiCem	ELASTICEM (TM) SYSTEM	3150	sack	13.2	1.57		8	7.49
7.49 Gal		FRESH WATER							
0.80 %		HR-5, 50 LB SK (100005050)							

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	Displacement	Displacement	448.5	bbl	8.33			10	

Cement Left In Pipe	**Amount**	f	**Reason**		NA
Mix Water:	pH 7.0	**Mix Water Chloride:**	0 ppm	**Mix Water Temperature:**	60 °F
Cement Temperature:		**Plug Displaced by:**	8.3 lb/gal Fresh Water	**Disp. Temperature:**	60 °F
Plug Bumped?	Yes	**Bump Pressure:**	3000 psi	**Floats Held?**	Yes
Cement Returns:	60 bbl	**Returns Density:**		**Returns Temperature:**	

Comment: Bumped plug at 3000 psi. Burst plug at 3800 psi. Got 50 bbls of spacer and 60 bbls of cement back to surface. Floats held and got 4.0 bbls back.

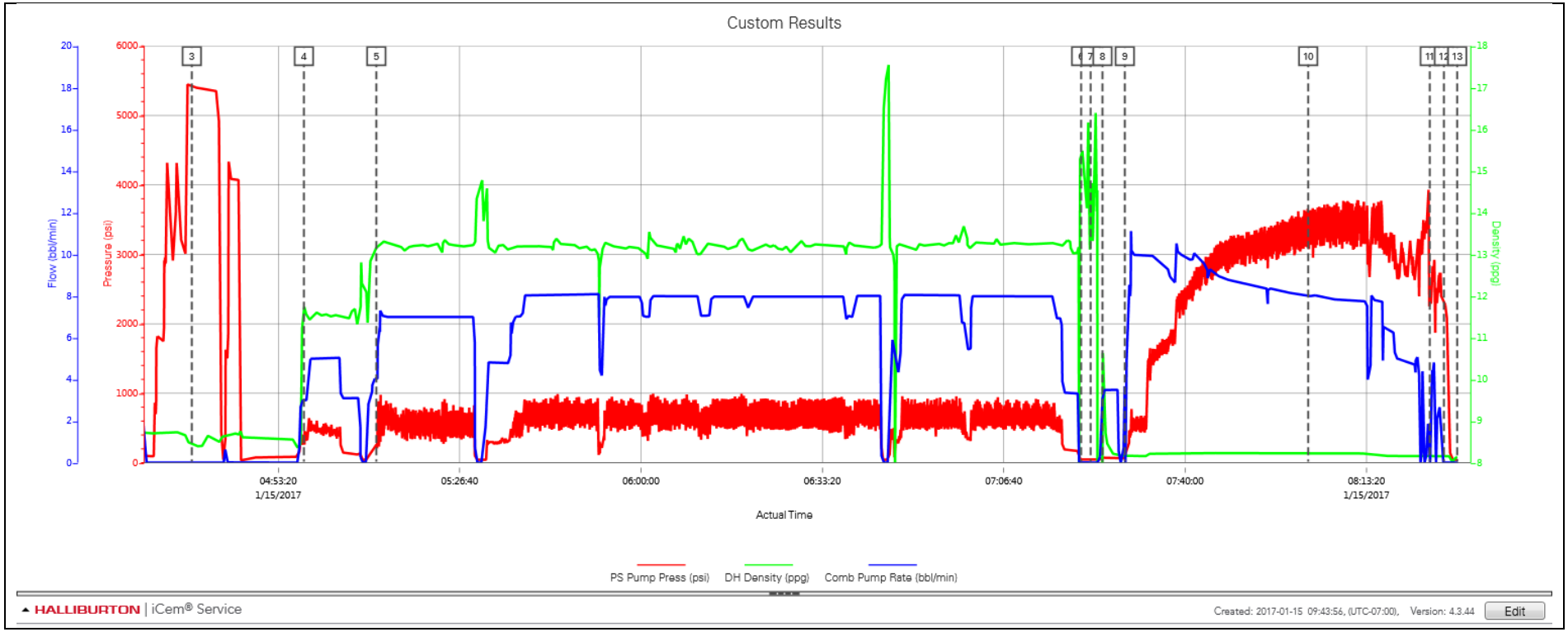
2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Activity	Graph Label	Date	Time	Source	Comments
	Arrive at Loc		1/14/2017	21:30:00		Arrived at location at 21:30.
	Rig-Up Equipment		1/14/2017	21:45:00		Went over a rig up JSA. Spot in trucks. Rigged up bulk equipment, water hose, and iron.
	Circulate Well		1/15/2017	02:00:00		Rig landed casing and circulated well up to 10 bpm.
	Pre Job Safety Meeting		1/15/2017	04:10:00		Conducted safety meeting with all parties involved with job.
Event	Start Job	Start Job	1/15/2017	04:24:00	USER	Start recording data.
Event	Event	Fill Lines	1/15/2017	04:26:35	USER	Fill lines with 5 bbls of fresh water.
Event	Test Lines	Test Lines	1/15/2017	04:29:57	RTD Import	Test 5500 psi. First three attempts was a leak in iron.
Event	Pump Spacer	Pump Tuned Spacer	1/15/2017	04:57:17	USER	Pumped 50 bbls of Tuned spacer at 11.5 ppg. 10 gals of D-Air, 15 gals of surfactant, and 15 gals of solvent added. Density verified with mud scale.
Event	Pump Cement	Pump Cement	1/15/2017	05:09:53	USER	Pumped 150 sks of ElastiCem w/o CBL and 3150 sks of ElastiCem with CBL. 3300 sks/ 922.7 bbls total cement. Yield: 1.57, Gal/sk: 7.19. Density verified with mud scale.
Event	Shutdown	Shutdown	1/15/2017	07:20:53	USER	Shutdown.
Event	Drop Plug	Drop Plug	1/15/2017	07:22:37	USER	KLM dropped plug. Plug witnessed by company man.
Event	Clean Lines	Clean Lines	1/15/2017	07:24:49	USER	Cleaned lines with 10 bbls of clean fresh water.
Event	Pump Displacement	Pump Displacement	1/15/2017	07:28:55	USER	Pumped 448.5 bbls of fresh water displacement.
Event	Spacer Returns to Surface	Spacer Returns to Surface	1/15/2017	08:02:37	USER	Got back 50 bbls of Tuned Spacer and 60 bbls of cement to surface.
Event	Bump Plug	Bump Plug	1/15/2017	08:24:58	USER	Bumped plug at 3000 psi. Plug burst at 3800 psi. Pumped a 5 bbl wet shoe as per procedure.
Event	Check Floats	Check Floats	1/15/2017	08:27:34	USER	Floats held and got 4.0 bbls back.
Event	End Job	End Job	1/15/2017	08:30:00	USER	Thank you for choosing Halliburton Cementing and the crew of Jacob Nelson.
	Left Location		1/15/2017	11:00:00		

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events