

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Saturday, January 7, 2017

TC Hiland Knolls C7-9-11 Production

Job Date: Wednesday, December 14, 2016

Sincerely,

Julia Nichols

Legal Notice

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Table of Contents

1.0	Cementing Job Summary	4
1.1	Executive Summary	4
2.0	Real-Time Job Summary	7
2.1	Job Event Log	7
3.0	Attachments.....	10
3.1	Custom Results – Job Chart with Events	10
3.2	Custom Results – Job Chart without Events.....	11

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **TC Hiland Knolls C7-9-11** 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 73 barrels of cement were returned to surface. The floats did not hold – crew left cement head on location with 2300psi initial pressure.

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 #: 3754107	Quote #:	Sales Order #: 0903710939							
Customer: EXTRACTION OIL & GAS		Customer Rep: Larry Siegal								
Well Name: TC HILAND KNOLLS	Well #: C7-9-11	API/UWI #: 05-123-43513-00								
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO							
Legal Description: NE SE-8-5N-66W-2800FSL-1189FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 341								
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srcv Supervisor: Nicholas Roles								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST								
Job depth MD	20505ft	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	1565	0	1565
Casing		5.5	4.778	20			0	20505	1565	7240
Open Hole Section			8.5				1565	20525	1565	7240
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			20505	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	3.74		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 ft ³ /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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
3	ElastiCem	ELASTICEM (TM) SYSTEM	3100	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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
4	Displacement	Displacement	453	bbl	8.33			8		
Cement Left In Pipe	Amount	ft	Reason					Wet Shoe		
Comment Got 73bbbls cement to surface. Floats did not hold, left cement head on location with 2300psi initial pressure.										

2.0 Real-Time Job Summary

2.1 Job Event Log

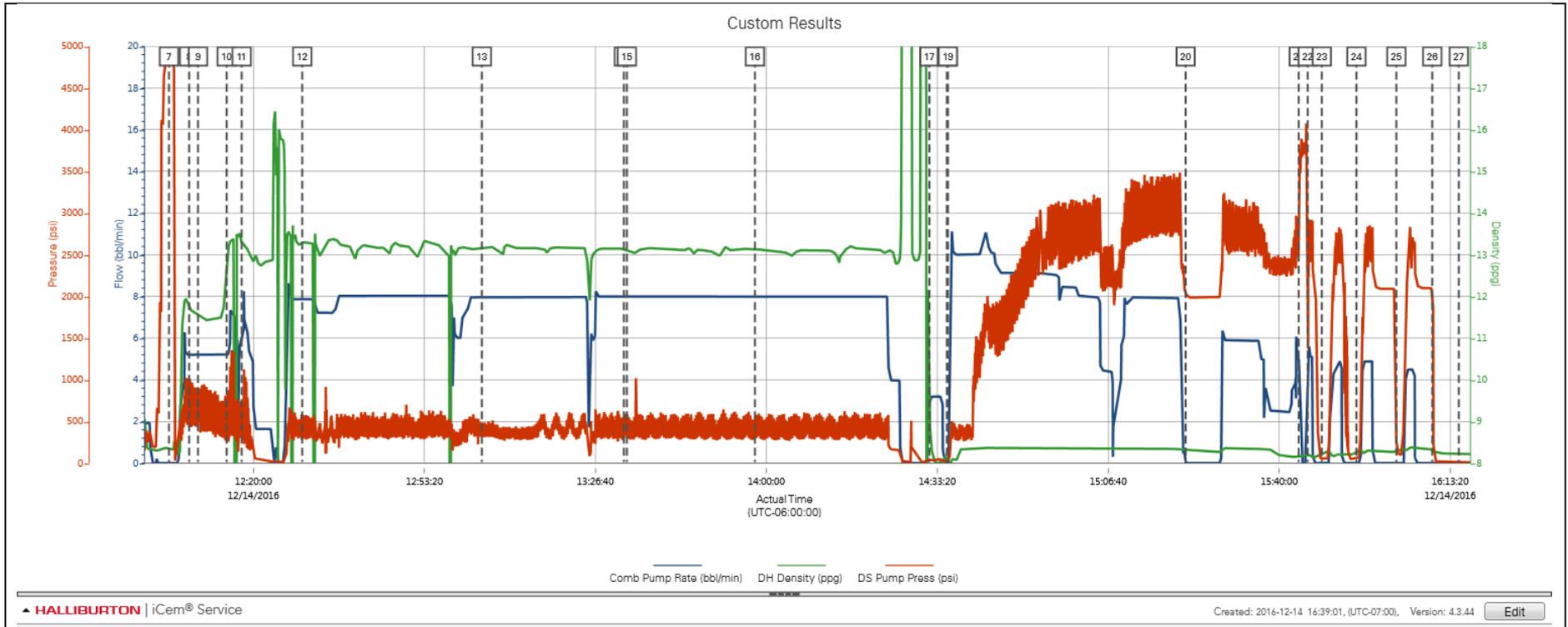
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate <i>(bbl/min)</i>	DH Density <i>(ppg)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	12/13/2016	16:30:00	USER				Crew call out for o/I at 2200
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/14/2016	21:00:00	USER				all crew aware of hazards and directions. all fit to drive.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	12/14/2016	21:45:00	USER				Met with company man to discuss job details and procedure. Performed hazard hunt and site assessment. Rig still had 4000' casing left to run.
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/14/2016	22:30:00	USER				All HSE present. Discussed bulk and iron placement and all red zone areas. Caution taped high pressure zones.
Event	5	Other	Other	12/14/2016	23:00:00	USER				Water Test- PH-6 Chlo-0 Temp-60
Event	12	Start Job	Start Job	12/14/2016	11:55:39	USER				
Event	20	Test Lines	Test Lines	12/14/2016	12:03:32	RTD Import	0.00	8.35	4916.61	Filled lines with 5bbls fresh water, shutdown and performed 500psi k/o test. Continued to pressure up to 5000psi. Held and no leaks.
Event	22	Pump Spacer 1	Pump Spacer 1*	12/14/2016	12:07:28	RTD Import	5.21	11.76	671.86	Pumped 50bbls Tuned Spacer III 11.5# 3.74y 23.7g/s at 5bpm 260psi. With 15g Musol A, 15g Dual Spacer B and 10g D-Air.
Event	25	Comment	Mud Cup Sample Pulled	12/14/2016	12:09:12	RTD Import	5.20	11.60	863.35	Mud Cup Sample Pulled
Event	38	Pump Lead Cement	Pump Lead Cement*	12/14/2016	12:14:46	RTD Import	5.21	12.83	450.33	Pumped 150sks or 41.9bbls of 13.2# 1.57y 7.48g/s ElastiCem W/O CBL at 7bpm 410psi.
Event	46	Comment	Mud Cup Sample Pulled	12/14/2016	12:17:41	RTD Import	5.94	13.27	298.26	Mud Cup Sample Pulled
Event	90	Pump Tail Cement	Pump Tail Cement*	12/14/2016	12:29:30	RTD Import	7.86	13.29	374.30	Pumped 3100sks or 866.8bbls of 13.2# 1.57y 7.48g/s ElastiCem W/ CBL at 8bpm 420psi.
Event	182	Comment	Mud Cup Sample Pulled	12/14/2016	13:04:32	RTD	7.97	13.15	486.00	Mud Cup Sample Pulled

Import										
Event	199	Comment	Mud Cup Sample Pulled	12/14/2016	13:32:14	RTD Import	7.99	13.15	403.40	Mud Cup Sample Pulled
Event	200	Comment	Mud Cup Sample Pulled	12/14/2016	13:32:48	RTD Import	8.00	13.12	532.00	Mud Cup Sample Pulled
Event	226	Comment	Mud Cup Sample Pulled	12/14/2016	13:57:46	RTD Import	7.98	13.11	302.96	Mud Cup Sample Pulled
Event	296	Clean Lines	Clean Lines	12/14/2016	14:31:48	RTD Import	2.88	9.18	31.68	Shutdown pumps and rig blew down lines to pits, followed by 5bbls fresh water with pumps through all valves.
Event	306	Drop Top Plug	Drop Top Plug	12/14/2016	14:35:11	RTD Import	0.00	8.02	9.15	Dropped by KLX tool hand, witnessed by HSE supervisor and Company man.
Event	307	Pump Displacement	Pump Displacement*	12/14/2016	14:35:24	RTD Import	0.00	8.02	8.21	Pumped 453bbls fresh water at 9bpm 2640psi.
Event	312	Other	Other	12/14/2016	15:21:45	USER	0.00	8.30	2030.14	Ran out of water due to not equalizing fast enough and had rig supplement with rig hose.
Event	313	Bump Plug	Bump Plug	12/14/2016	15:43:47	USER	4.94	8.15	2960.38	Bumped at 453bbls gone and final circulating pressure was 2840psi at 5bpm. Brought pressure 500 over and held for 1 min.
Event	317	Other	Other	12/14/2016	15:45:32	USER	2.01	8.26	2855.25	Pressured up at 2bpm and burst disc at 4062psi. Continued to pump 5bbls fresh water at 5bpm.
Event	318	Other	Other	12/14/2016	15:48:18	USER	0.00	8.22	49.51	Released pressure and got 10bbls back with continued pressure. Closed release line and had 500psi still on line. pumped 10bbls back in and held for 5min.
Event	321	Other	Other	12/14/2016	15:55:03	USER	0.00	8.26	54.20	Continued to not hold, tried surging it and once we got 10bbls back shut in and pumped back in to try once more.
Event	322	Other	Other	12/14/2016	16:02:49	USER	0.00	8.31	268.22	Continued not to hold and pumped the 10bbls back in. Once pressure stabilized we shut in cement head and held pressure on casing. Recommended holding for 8 hours after bump plug.
Event	323	End Job	End Job	12/14/2016	16:09:50	USER	0.00	8.33	2096.79	73bbls cement back to pits.

Event	324	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	12/14/2016	16:15:00	USER	0.00	8.21	16.66	All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	325	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/14/2016	16:30:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	326	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	12/15/2016	17:00:00	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

