

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Thursday, June 15, 2017

### **RBF 8 Production**

Job Date: Sunday, May 07, 2017

Sincerely,

**Julia Nichols**

## Legal Notice

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **RBF 8** 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 25 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]**

## HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404	Ship To #: 3788187	Quote #:	Sales Order #: 0904009343							
Customer: EXTRACTION OIL & GAS		Customer Rep: Todd Stephens								
Well Name: RBF	Well #: 8	API/UWI #: 05-123-44440-00								
Field: WATTENBERG	City (SAP): WINDSOR	County/Parish: WELD	State: COLORADO							
Legal Description: SE NE-22-6N-67W-2057FNL-300FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Steven Markovich								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST								
Job depth MD	16525ft	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		J-55	0	1554	0	1554
Casing		5.5	4.778	20		P-110	0	16525	0	0
Open Hole Section			8.5				1554	16535	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			16525		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 <sup>3</sup> /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		6		
149.34 lbm/bbl		BARITE, BULK (100003681)								
35.40 gal/bbl		FRESH WATER								
0.30 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
0.30 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003685)								

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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 Lead	ELASTICEM (TM) SYSTEM	2800	sack	13.2	1.57		5	7.53
	0.40 %	SCR-100 (100003748)							
	7.53 Gal	FRESH WATER							
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	365	bbl	8.34				
<b>Comment</b> 50bbls of spacer and 25 bbls of cement to surface. Dart burst at 3804psi pumped 5bbls past for wet shoe. Checked floats, didn't hold. Got 8 bbls back. Shut in well and pumped the 8bbls back in. Checked floats and floats held.									

## 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	Start Job	Start Job	5/7/2017	10:44:03	COM4	8.29	-7.00	0.00	TD 16535' TP 16525' FC 16523' 5 1/2 20# CSG Surface CSG 9 5/8 1554'
Event	2	Test Lines	Test Lines	5/7/2017	10:52:19	COM4	8.30	28.00	0.00	500 kick out test then bring up to 4500psi and hold for 3 mins.
Event	3	Pump Spacer 1	Pump Spacer 1	5/7/2017	11:03:35	COM4	11.46	52.00	2.90	Pump 50bbls of 11.5ppg 3.74yield Tuned Spacer III. 5bbls/min 240psi
Event	4	Check Weight	Check Weight	5/7/2017	11:19:44	COM4	-0.14	3.00	0.00	Weight verified by pressurized scales
Event	5	Pump Lead Cement	Pump Lead Cement	5/7/2017	11:21:28	COM4	13.20	379.00	8.00	Pump 727bbls (2600sks) 13.2ppg 1.57 yied Cement. 8bbls/min 413psi
Event	6	Check Weight	Check Weight	5/7/2017	12:28:17	COM4	13.26	404.00	8.00	Weight verified by pressurized scales
Event	7	Shutdown	Shutdown	5/7/2017	12:53:24	COM4	18.19	59.00	0.00	Shutdown. Rig to blow down stand pipe to wash up tank.
Event	8	Clean Lines	Clean Lines	5/7/2017	13:00:17	COM4	18.42	-6.00	0.00	clean pumps and lines
Event	9	Drop Top Plug	Drop Top Plug	5/7/2017	13:04:34	COM4	8.14	12.00	0.00	Plug loaded by KLX hand. Plug drop verified by KLX company hand and myself.
Event	10	Pump Displacement	Pump Displacement	5/7/2017	13:04:37	COM4	8.14	10.00	0.00	Pump 365 bbls of fresh water. Spacer interface at 288 away cement to surface at 340 away giving us 25bbs of cement to surface.
Event	11	Bump Plug	Bump Plug	5/7/2017	13:47:20	COM4	8.33	2743.00	4.90	Bumed plug at 2530psi took to 2939psi
Event	12	Pressure Up	Pressure Up	5/7/2017	13:49:01	USER	8.35	2905.00	0.00	Pump at 2bbl/min to burst dart.
Event	13	Other Logging Pass	Other	5/7/2017	13:49:35	USER	8.36	3804.00	2.00	Dart burst at 3804psi Bring pump up to 5bbl/min to pump 5bbl wet shoe
Event	14	Other	Other	5/7/2017	13:53:07	COM4	8.32	1908.00	0.00	Check floats. Got 8bbls of water back and flow did not stop. Shut in flow.
Event	15	Other	Other	5/7/2017	13:54:38	COM4	8.31	1422.00	0.50	Pump the 8bbls of water back int well at 5bbl/min and

held for 3 mins

Event	16	Other	Other	5/7/2017	13:57:21	COM4	8.32	1947.00	0.00	Checked floats by surging release line. Floats held we got back 2 1/2 bbls of water back.
Event	17	End Job	End Job	5/7/2017	14:00:00	COM4	8.26	-1.00	0.00	Thank you Markovich and crew



3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

