

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

Date: Monday, October 30, 2017

## **WALT 16E-20-9C PRODUCTION**

Job Date: Tuesday, October 24, 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 **Walt 16E-20-9C** 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.

**Approxiamtely 57 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 [Fort Lupton]**

**HALLIBURTON**

## Summary Report

Crew: \_\_\_\_\_  
 Job Start Date: 10/24/2017 03:13 AM

Sales Order #: 0904378357  
 WO #: 0904378357  
 PO #: 817-036  
 AFE # :

*The Road to Excellence Starts with Safety*

Sold To #: 389404	Ship To #: 3819720	Quote #:	Sales Order #: 0904378357
Customer: EXTRACTION OIL & GAS		Customer Rep: Todd Stephens	
Well Name: WALT	Well #: 16E-20-9C	API/UWI #: 05-123-45243-00	
Field: WATTENBERG	City (SAP): SEVERANCE	County/Parish: WELD	State: COLORADO
Legal Description: SE NE-17-7N-87W-2017FNL-354FEL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srcv Supervisor: Bryan Kraft	

Job			
Formation Name			
Formation Depth (MD)	Top	Bottom	
Form Type		BHST	
Job depth MD	16648ft	Job Depth TVD	7257ft
Water Depth		Wk Ht Above Floor	4ft
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	0	9.625	8.921	36		J-55	0	1571	0	1571
Casing	0	5.5	4.778	20		P-110	0	16648	0	7257
Open Hole Section			8.5				1571	16655	1571	7257

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make	
Guide Shoe					Top Plug	5.5	1	klx	
Float Shoe	5.5	1	klx	16648	Bottom Plug				
Float Collar	5.5	1	klx	16643	SSR plug set				
Insert Float					Plug Container	5.5	1	HES	
Stage Tool					Centralizers				

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	3.73	23.4	4	1761	
149.34 lbm/bbl		BARITE, BULK (100003681)								
35 gal/bbl		FRESH WATER								
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003685)								

**HALLIBURTON**

*Summary Report*

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 WO #: 0904378357  
 PO #: 817-036  
 AFE #:

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	ELASTICEM (TM) SYSTEM	2670	sack	13.2	1.57	7.54	8	20132
		0.30 % SCR-100 (100003749)							
		7.54 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	369	bbl	8.34			10	15498

Cement Left In Pipe	Amount	0ft	Reason	Wet Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	<300 ppm	Mix Water Temperature:	38 °F
Cement Temperature:	44 °F	Plug Displaced by:	8.3	Disp. Temperature:	38 °F
Plug Bumped?	Yes	Bump Pressure:	2500 psi	Floats Held?	Yes
Cement Returns:	57 bbl	Returns Density:	n/a	Returns Temperature:	96 °F

**Comment** PLUG BUMPED AT CALCULATED DISPLACEMENT @ 2500: DISK RUPTURED @2700 PSI:PUMPED 5 BBL WET SHOE: FLOATS HELD AND RECEIVED 4 BBL BACK TO THE TRUCK: 57 BBL CEMENT RETURNED TO SURFACE

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

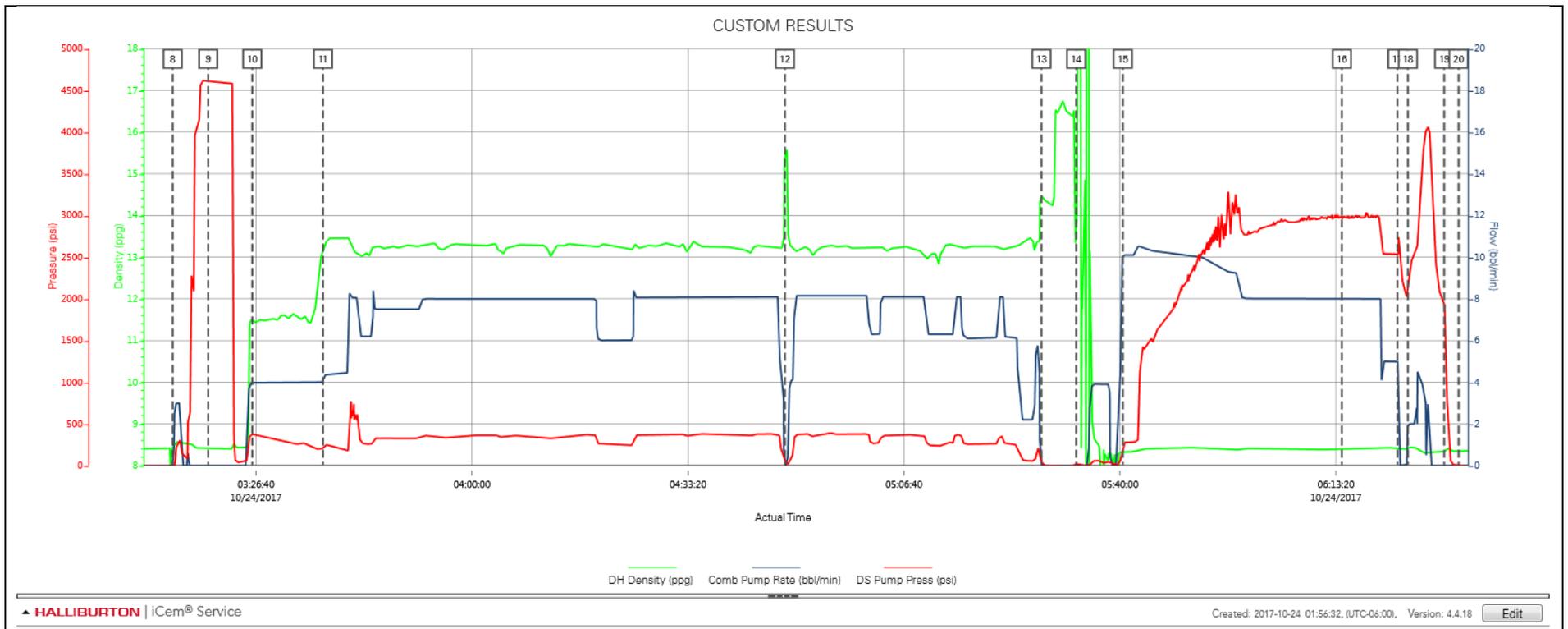
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	10/23/2017	19:00:00	USER				CREW CALLED OUT AT 19:00 10/24/2017, REQUESTED ON LOCATION 2:30 10/24/2017. CREW PICKED UP SPACER, CHEMICALS (25 GAL MUSOL A, 25 GAL DUAL SPACER B, 10 GAL D-AIR), 100 LBS SUGAR, MANIFOLD, AND PLUG CONTAINER FROM FORT LUPTON,CO. BULK BODYLOAD: 10866493, PUMP ELITE: 11897034/11645460.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/23/2017	22:45:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	10/23/2017	23:00:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	10/24/2017	00:00:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 36# 9.625" @ 1571', CASING: 20# 5.5" @ 16648', 5' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 7257', 9.6 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	10/24/2017	01:00:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	10/24/2017	01:15:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	10/24/2017	02:45:00	USER	8.40	0.00	-30.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	10/24/2017	03:13:48	COM5	8.45	0.00	-6.00	BEGIN RECORDING JOB DATA.
Event	9	Test Lines	Test Lines	10/24/2017	03:19:17	COM5	8.42	0.00	4614.00	PRESSURE TESTED IRON TO 4500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 300 PSI, 5TH GEAR STALL OUT @ 2200 PSI.
Event	10	Pump Spacer 1	Pump Spacer @ 11.5 ppg	10/24/2017	03:26:05	COM5	11.49	4.00	373.00	PUMP 50 BBLS OF TUNED SPACER @ 11.5 LB/GAL, ADDED 25 GAL MUSOL A, 25 GAL DUAL SPACER B, AND 10 GAL D-

AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.

Event	11	Pump Cement	Pump Cement @ 13.2 ppg	10/24/2017	03:36:59	COM5	13.17	4.00	209.00	PUMP 2670 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.54 GAL/SK, 747 BBLS, TOC @ SURFACE', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Shutdown	Shutdown	10/24/2017	04:48:17	USER	15.45	0.00	50.00	SHUTDOWN DUE TO LEAKING UNION ON FLOOR. RETIGHTENED UNION AND CONTINUED PUMPING AS SCHEDULED.
Event	13	Shutdown	Shutdown	10/24/2017	05:27:53	USER	14.48	0.00	35.00	SHUTDOWN TO WASH PUMPS AND LINES/ DROP TOP PLUG.
Event	14	Drop Top Plug	Drop Top Plug	10/24/2017	05:33:14	COM5	13.36	0.00	32.00	PLUG LEFT CONTAINER, VERIFIED BY TOOL HAND.
Event	15	Pump Displacement	Pump Fresh Water Displacement	10/24/2017	05:40:26	COM5	8.34	10.10	251.00	BEGIN CALCULATED DISPLACEMENT OF 369 BBLS WITH FRESH WATER.
Event	16	Cement Returns to Surface	Cement Returns to Surface	10/24/2017	06:14:14	USER	8.39	8.00	2943.00	CEMENT TO SURFACE @ 312 BBLS INTO DISPLACEMENT. 57 BBLS OF CEMENT TO SURFACE.
Event	17	Bump Plug	Bump Plug	10/24/2017	06:22:48	USER	8.42	5.00	2553.00	PLUG BUMPED AT CALCULATED DISPLACEMENT @ 2500 PSI. DISK RUPTURED UPON BUMPING PLUG AT 2700PSI
Event	18	Pump Displacement	Pump Wet Shoe	10/24/2017	06:24:26	USER	8.42	2.00	2089.00	PUMP 5 BBLS FRESH WATER FOR WET SHOE.
Event	19	Check Floats	Check Floats	10/24/2017	06:30:02	USER	8.33	0.00	1953.00	RELEASED PRESSURE, FLOATS HELD, 4 BBLS BACK.
Event	20	End Job	End Job	10/24/2017	06:32:15	COM5	8.34	0.00	-3.00	STOP RECORDING JOB DATA
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/24/2017	06:37:00	USER	8.36	5.30	147.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	22	Rig-Down Completed	Rig-Down Completed	10/24/2017	07:37:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/24/2017	08:45:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	24	Crew Leave Location	Crew Leave Location	10/24/2017	09:00:00	USER				THANK YOU FOR USING HALLIBURTON - BRYAN KRAFT AND CREW.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

