

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Monday, October 02, 2017

Leonard 9C SURFACE

Job Date: Sunday, August 27, 2017

Sincerely,

Julia Nichols

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Leonard 9C** cement **Surface** 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 27 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]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 369404		Ship To #: 3809651		Quote #:		Sales Order #: 0904261476					
Customer: EXTRACTION OIL & GAS -				Customer Rep: Shawn McIntyre							
Well Name: LEONARD			Well #: 9C		API/UWI #: 05-123-45044-00						
Field: WATTENBERG		City (SAP): FIRESTONE		County/Parish: WELD		State: COLORADO					
Legal Description: NW SW-21-2N-67W-1740FSL-494FWL											
Contractor: UNKNOWN				Rig/Platform Name/Num: WORKOVER RIG							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srvc Supervisor: Bryce Muir							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type											
BHST											
Job depth MD		1566ft		Job Depth TVD		1566					
Water Depth											
Wk Ht Above Floor 3 FT											
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	8 RD	J-55	0	1566	0	0	
Open Hole Section			13.5				0	1566	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make			
Guide Shoe	9.625				Top Plug	9.625	1	HES			
Float Shoe	9.625	1	WF	1566	Bottom Plug	9.625					
Float Collar	9.625	1	WF	1532	SSR plug set	9.625					
Insert Float	9.625				Plug Container	9.625	1	HES			
Stage Tool	9.625				Centralizers	9.625					
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	Red Dye Spacer	Red Dye Spacer			10	bbl	8.33				
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	SwiftCem	SWIFTCEM (TM) SYSTEM			550	sack	13.5	1.74		5	9.2
9.20 Gal		FRESH WATER									

last updated on 10/2/2017 1:24:31 PM

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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/mi n	Total Mix Fluid Gal	
3	Fresh Water	Fresh Water	117	bbl	8.33					
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint		
<p>Comment: WE ARRIVED ON LOCATION AT 1545 HOURS ON 08/26/2017. WE SPOTTED IN OUR EQUIPMENT AND RIGGED UP OUR IRON TO THE RED ZONE. THE RIG WAS STILL PERFORMING DRILLING OPERATIONS. WE WAITED ON LOCATION UNTIL THE WELL WAS DRILLED AND THE CASING WAS RAN. ON 08/27/2017 AT 0200 WE RIGGED UP THE PLUG CONTAINER AND BEGAN TO PERFORM THE CEMENT JOB. WE PUMPED 10 BBLs OF FRESH WATER SPACER WITH RED DYED ADDED TO THE 10 BBLs. WE THEN PUMPED OUR 170 BBLs OF PRIMARY CEMENT. WE PUMPED THE JOB AT 6 BARREL PER MINUTE MONITORING PRESSURE THROUGHOUT THE JOB. WHEN ALL THE CEMENT WAS PUMPED DOWNHOLE WE SHUTDOWN TO DROP THE TOP PLUG. 9.625" TOP PLUG WAS DROPPED BY BRYCE MUIR. WE WASHED UP ON TOP OF THE PLUG WITH THE FIRST 10 BBLs OF OUR 117.4 BBL DISPLACEMENT. WE SLOWED OUR RATE THE LAST 20 BBLs OF DISPLACEMENT TO 3 BARRELS PER MINUTE. WE GOT GOOD CEMENT TO SURFACE AT 90 BBLs DISPLACEMENT PUMPED FOR A TOTAL OF 27 BBLs OF CEMENT TO SURFACE. WE LANDED THE PLUG AT 117 BBLs PUMPED. PLUG WAS LANDED AT 465 PSI AND WE PRESSURED UP TO 1031 PSI AND HELD FOR 3 MINUTES. CHECKED THE FLOATS AND THEY HELD. WE GOT ½ BBL OF FLUID BACK TO THE RED TIGER.</p>										

2.0 Real-Time Job Summary

2.1 Job Event Log

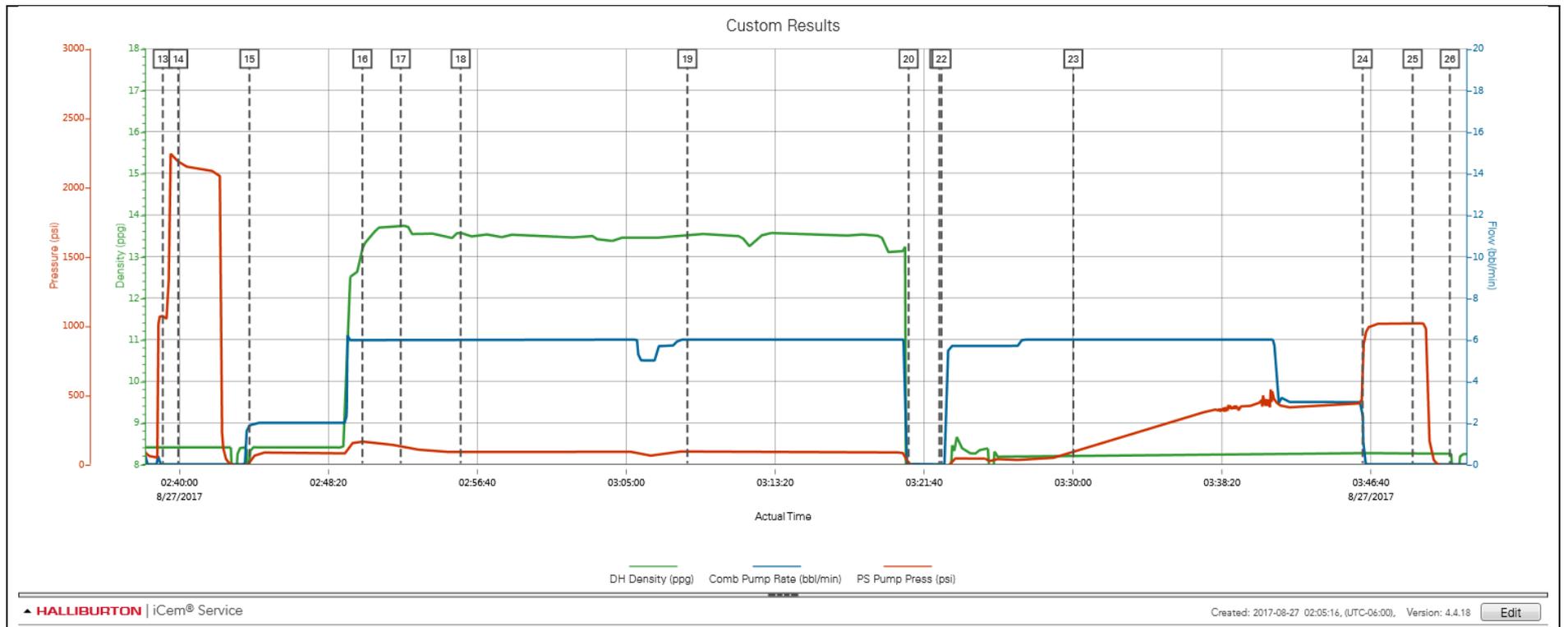
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	8/26/2017	12:00:00	USER				CREW CALLED OUT FOR JOB. LOAD UP ALL EQUIPMENT AND MATERIALS TO PERFORM SURFACE CASING JOB.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/26/2017	15:00:00	USER				DISCUSS HAZARDS ASSOCIATED WITH DRIVING TRUCKS TO LOCATION. DISCUSS CONVOY ORDER, ROUTE OF TRAVEL, AND PLACES TO STOP IF NEEDED.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/26/2017	15:15:00	USER				
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	8/26/2017	15:45:00	USER				
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	8/26/2017	16:00:00	USER				ASSESS LOCATION TO IDENTIFY THE BEST WAY TO SPOT EQUIPMENT AND RIG UP.
Event	6	Other	Other	8/26/2017	16:15:00	USER				SPOT PUMPING EQUIPMENT.
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/26/2017	16:45:00	USER				DISCUSS HAZARDS ASSOCIATED WITH RIGGING UP AND PACKING IRON ON LOCATION WHILE DRILLING OPERATIONS ARE BEING PERFORMED.
Event	8	Rig-Up Equipment	Rig-Up Equipment	8/26/2017	17:00:00	USER				
Event	9	Other	Other	8/26/2017	17:30:00	USER				WAIT FOR RIG TO FINISH DRILLING WELL AND RUN CASING.
Event	10	Rig-Up Equipment	Rig-Up Equipment	8/27/2017	02:00:00	USER				RIG UP PLUG CONTAINER AND PUMPING LINES. LOAD 9.625" TOP PLUG. PLUG LOADED BY BRYCE MUIR.
Event	11	Start Job	Start Job	8/27/2017	02:33:18	COM6	8.42	0.00	-12.70	
Event	12	Other	Other	8/27/2017	02:36:50	COM6	8.41	0.00	-19.70	PUMP 2 BBLS OF FRESH WATER TO FILL PUMPS AND LINES.
Event	13	Test Lines	Test Lines	8/27/2017	02:39:04	COM6	8.42	0.00	1071.30	CONDUCT A LOW PRESSURE TEST TO 500 PSI TO TEST RED TIGER PRESSURE KICKOUTS.
Event	14	Test Lines	Test Lines	8/27/2017	02:39:56	COM6	8.40	0.00	2184.30	CONDUCT A HIGH PRESSURE TEST TO 1700 PSI TO TEST PUMP AND LINES.

Event	15	Pump Spacer 1	Pump Spacer 1	8/27/2017	02:43:55	COM6	8.17	1.90	24.30	PUMPED 10 BBLS OF RED DYE SPACER. PUMPED AT 2 BPM AT 90 PSI WHILE WE WEIGHED UP CEMENT. GOOD CIRCULATION.
Event	16	Pump Cement	Pump Cement	8/27/2017	02:50:14	COM6	13.18	6.00	175.30	PUMPED 170 BBLS OF PRIMARY CEMENT. 550 SACKS @ 13.5 #/GAL 1.74 CUFT/SK 9.2 GAL/SK. WE PUMPED CEMENT AT 6 BPM AT 150 PSI. GOOD CIRCULATION.
Event	17	Check Weight	Check weight	8/27/2017	02:52:23	COM6	13.75	6.00	124.30	WEIGH CONFIRMED BY PRESSURIZED MUD BALANCE.
Event	18	Check Weight	Check weight	8/27/2017	02:55:44	COM6	13.56	6.00	90.30	WEIGH CONFIRMED BY PRESSURIZED MUD BALANCE.
Event	19	Check Weight	Check weight	8/27/2017	03:08:25	COM6	13.51	6.00	95.30	WEIGH CONFIRMED BY PRESSURIZED MUD BALANCE.
Event	20	Shutdown	Shutdown	8/27/2017	03:20:48	COM6	0.31	0.00	9.30	
Event	21	Drop Top Plug	Drop Top Plug	8/27/2017	03:22:31	COM6	0.20	0.00	-20.70	DROPPED 9.625" TOP PLUG. PLUG DROPPED BY BRYCE MUIR.
Event	22	Pump Displacement	Pump Displacement	8/27/2017	03:22:38	COM6	0.20	0.00	-20.70	PUMPED 117.4 BBLS OF FRESH WATER DISPLACEMENT. THE FIRST 10 BBLS OF DISPLACEMENT WE RAN THROUGH OUR MIXING TUB TO WASH UP ON TOP OF THE PLUG. GOOD CIRCULATION.
Event	23	Displ Reached Cement	Displ Reached Cmnt	8/27/2017	03:30:01	COM6	8.19	6.00	87.30	DISPLACEMENT REACH CEMENT AT 38 BBLS PUMPED. WE GOT RED DYE SPACER TO SURFACE AFTER PUMPING 70 BBLS OF DISPLACEMENT. AT 90 BBLS DISPLACEMENT PUMPED WE GOT GOOD CEMENT TO SURFACE. WE GOT 27 BBLS OF GOOD CEMENT TO SURFACE.
Event	24	Bump Plug	Bump Plug	8/27/2017	03:46:12	COM6	8.25	2.50	665.30	LANDED PLUG AT CALCULATED DISPLACEMENT. WE LANDED THE PLUG AT 465 PSI AND PRESSURED UP 500 PSI OVER FINAL CIRCULATING PRESSURE TO 1031 PSI. HELD FOR 3 MINUTES.
Event	25	Check Floats	Check Floats	8/27/2017	03:49:00	USER	8.26	0.00	1016.30	FLOATS HELD AND WE GOT 1/2 BBL BACK TO THE RED TIGER.
Event	26	End Job	End Job	8/27/2017	03:51:05	COM6	8.25	0.00	-9.70	
Event	27	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/27/2017	04:15:00	USER				DISCUSS HAZARDS ASSOCIATED WITH RIGGING DOWN AND PACKING IRON ON LOCATION.
Event	28	Rig-Down Equipment	Rig-Down Equipment	8/27/2017	04:30:00	USER				
Event	29	Pre-Convoy Safety	Pre-Convoy Safety	8/27/2017	05:00:00	USER				DISCUSSED HAZARDS ASSOCIATED WITH DRIVING TRUCKS

		Meeting		Meeting						BACK TO THE SERVICE CENTER. DISCUSSED DRIVER FATIGUE AND WHAT TO DO IF TOO TIRED TO DRIVE.
Event	30	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/27/2017	05:15:00	USER				JOB WAS SAFELY COMPLETED BY BRYCE MUIR AND CREW. THANK YOU AND STAY SAFE.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

