

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Friday, September 08, 2017

Leonard 7N Surface

Job Date: Monday, August 28, 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 7N** 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 28 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]

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*Cementing Job Summary**The Road to Excellence Starts with Safety*

Sold To #: 389404		Ship To #: 3809578		Quote #:		Sales Order #: 0904262338				
Customer: EXTRACTION OIL & GAS -				Customer Rep: Shawn McIntyre						
Well Name: LEONARD		Well #: 7N		API/UWI #: 05-123-45052-00						
Field: WATTENBERG		City (SAP): FIRESTONE		County/Parish: WELD		State: COLORADO				
Legal Description: NW SW-21-2N-67W-1796FSL-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		1575ft		Job Depth TVD		1575				
Water Depth				Wk Ht Above Floor		2 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	1575	0	0
Open Hole Section			13.5				0	1575	0	1575
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	1575		Bottom Plug	9.625			
Float Collar	9.625	1	WF	1531		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	SWIFTCM (TM) SYSTEM	550	sack	13.5	1.74		5	9.2	
9.20 Gal		FRESH WATER								

last updated on 9/8/2017 9:48:27 AM

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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
3	Fresh Water	Fresh Water	118	bbl	8.33				
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint	
Comment: WE ARRIVED ON LOCATION AT 1130 HOURS ON 08/28/2017. 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 08/28/2017 AT 1800 HOURS 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 6.5 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 118.3 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 28 BBLs OF CEMENT TO SURFACE. WE LANDED THE PLUG AT 118 BBLs PUMPED. PLUG WAS LANDED AT 560 PSI AND WE PRESSURED UP TO 1194 PSI AND HELD FOR 3 MINUTES. CHECKED THE FLOATS AND THEY HELD. WE GOT ½ BBL OF FLUID BACK TO THE RED TIGER.									

2.0 Real-Time Job Summary

2.1 Job Event Log

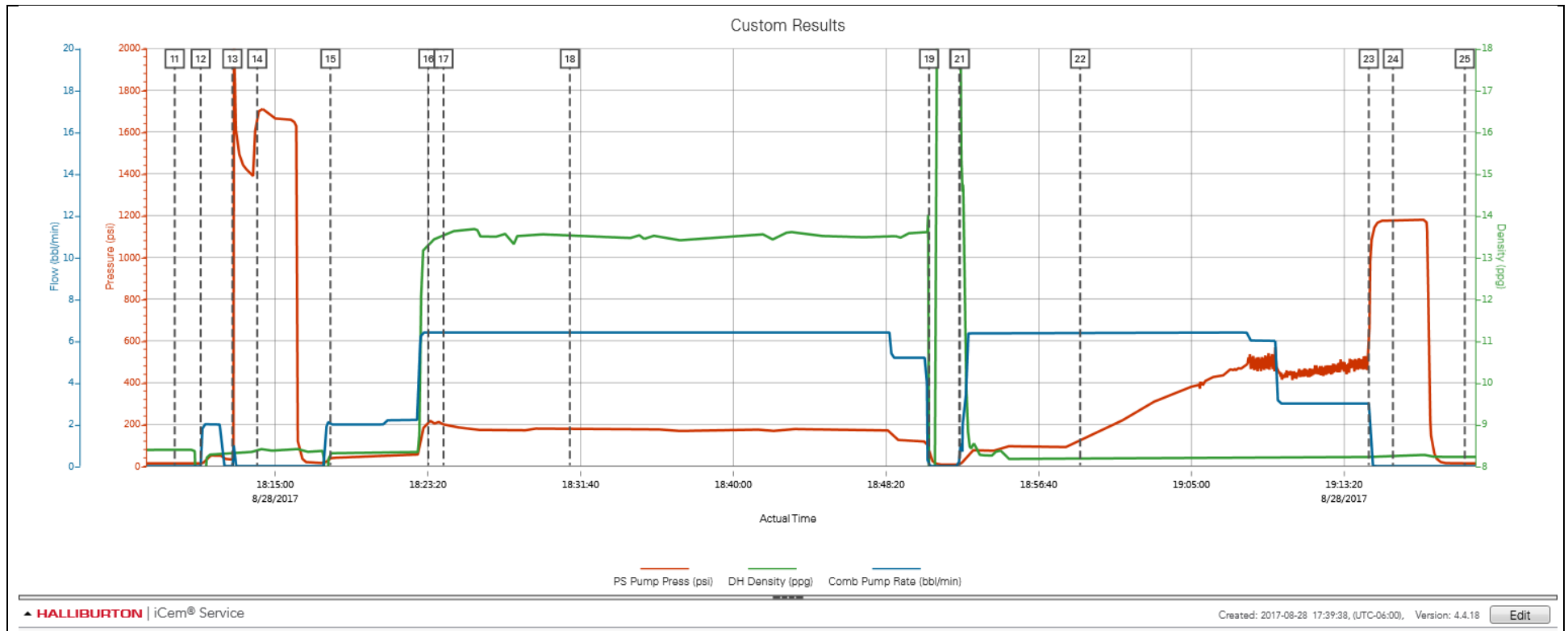
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	8/28/2017	06:00:00	USER				CREW CALLED OUT FOR SURFACE CASING JOB. LOAD ALL EQUIPMENT AND MATERIALS NEED TO COMPLETE JOB.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/28/2017	10:45:00	USER				DISCUSS HAZARDS ASSOCIATED WITH DRIVING TRUCKS TO LOCATION. DISUCSS CONVOY ORDER, SAFEST ROUTE OF TRAVEL, AND AREAS TO PULL OVER IF NEEDED.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/28/2017	11:00:00	USER				
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	8/28/2017	11:30:00	USER				
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	8/28/2017	11:45:00	USER				ASSESS LOCATION TO IDENTIFY THE BEST WAY TO SPOT AND RIG UP EQUIPMENT DURING DRILLING OPERATIONS. SPOT EQUIPMENT.
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/28/2017	12:00:00	USER				DISCUSS HAZARDS ASSOCIATED WITH RIGGING UP AND PACKING IRON ON LOCATION. IDENTIFY RED ZONES, MUSTER AREAS, AND FIRST AID LOCATIONS.
Event	7	Rig-Up Equipment	Rig-Up Equipment	8/28/2017	12:15:00	USER				
Event	8	Other	Other	8/28/2017	12:45:00	USER				WAIT FOR DRILLING RIG TO FINISH DRILLING WELL AND RUNNING CASING.
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/28/2017	17:45:00	USER	11.30	8.41	0.00	DISCUSS HES SAFETY AND JOB PROCEDURES. IDENTIFY CLOSEST HOSPITALS, MUSTER AREAS, AND FIRST AID LOCATIONS.
Event	10	Rig-Up Equipment	Rig-Up Equipment	8/28/2017	18:00:00	USER	15.30	8.39	0.00	RIG UP PLUG CONTAINER AND PUMPING LINES ON THE RIG FLOOR. PRE LOAD 9.625" TOP PLUG. PLUG LOADED BY BRYCE MUIR.
Event	11	Start Job	Start Job	8/28/2017	18:09:31	COM6	16.30	8.39	0.00	
Event	12	Other	Other	8/28/2017	18:10:56	COM6	13.30	0.28	0.00	PUMP 2 BBLS OF FRESH WATER TO FILL PUMP AND LINES.

Event	13	Test Lines	Test Lines	8/28/2017	18:12:40	COM6	29.30	8.32	0.00	CONDUCT A LOW PRESSURE TEST TO 500 PSI TO TEST RED TIGER PRESSURE KICKOUT.
Event	14	Test Lines	Test Lines	8/28/2017	18:14:01	COM6	1676.30	8.41	0.00	CONDUCT A HIGH PRESSURE TEST TO 1700 PSI TO TEST PUMP AND LINES.
Event	15	Pump Spacer 1	Pump Spacer 1	8/28/2017	18:18:01	COM6	39.30	8.32	2.00	PUMP 10 BBLS OF DYED SPACER. DYED SPACER PUMPED AT 2 BPM AT 55 PSI. GOOD CIRCULATION.
Event	16	Pump Cement	Pump Cement	8/28/2017	18:23:22	COM6	227.30	13.30	6.40	PUMPED 170 BBLS OF PRIMARY CEMENT. 550 SACKS @ 13.5 #/GAL 1.74 CUFT/SK 9.2 GAL/SK. WE PUMPED CEMENT AT 6.5 BPM AT 220 PSI. WE HAD GOOD CIRCULATION.
Event	17	Check Weight	Check weight	8/28/2017	18:24:11	COM6	206.30	13.54	6.40	WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE.
Event	18	Check Weight	Check weight	8/28/2017	18:31:05	COM6	176.30	13.53	6.40	WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE.
Event	19	Shutdown	Shutdown	8/28/2017	18:50:41	COM6	60.30	7.04	0.00	
Event	20	Drop Top Plug	Drop Top Plug	8/28/2017	18:52:20	COM6	8.30	25.23	1.10	DROPPED 9.625" TOP PLUG. TOP PLUG DROPPED BY BRYCE MUIR.
Event	21	Pump Displacement	Pump Displacement	8/28/2017	18:52:22	COM6	11.30	22.34	1.10	PUMPED 118.3 BBLS OF FRESH WATER DISPLACEMENT. WE HAD GOOD CIRCULATION DURING DISPLACEMENT.
Event	22	Displ Reached Cement	Displ Reached Cmnt	8/28/2017	18:58:56	COM6	122.30	8.17	6.40	WE CAUGHT THE PLUG AFTER PUMPING 37 BBLS OF DISPLACEMENT PUMPED. WE GOT DYED SPACER TO SURFACE AFTER PUMPING 80 BBLS OF DISPLACEMENT. AT 90 BBLS DISPLACEMENT PUMPED WE GOT GOOD CEMENT TO SURFACE. WE GOT 28 BBLS OF CEMENT TO SURFACE. WE PUMPED DISPLACEMENT AT 6.5 BPM AND SLOWED OUR RATE TO 3 BPM FOR THE LAST 209 BBLS OF DISPLACEMENT TO LAND THE PLUG.
Event	23	Bump Plug	Bump Plug	8/28/2017	19:14:41	COM6	633.30	8.22	3.00	LANDED THE PLUG AT 560 PSI AND PRESSURED UP 500 PSI OVER FINAL CIRCULATING PRESSURE TO 1194 PSI. HELD FOR 3 MINUTES.
Event	24	Check Floats	Check Floats	8/28/2017	19:16:00	USER	1177.30	8.25	0.00	FLOATS HELD. WE GOT 1/2 BBL BACK TO THE RED TIGER.
Event	25	End Job	End Job	8/28/2017	19:19:55	COM6	12.30	8.23	0.00	
Event	26	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/28/2017	19:35:00	USER				DISCUSS HAZARDS ASSOCIATED WITH RIGGING DOWN AND PACKING IRON ON LOCATION.
Event	27	Rig-Down Equipment	Rig-Down Equipment	8/28/2017	19:45:00	USER				

Event	28	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/28/2017	20:15:00	USER	DISCUSS HAZARDS ASSOCIATED WITH DRIVING TRUCKS BACK TO THE SERVICE CENTER. DISCUSSED DRIVER FATIGUE AND WHAT TO DO IF TOO TIRED TO DRIVE.
Event	29	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/28/2017	20:30:00	USER	JOB WAS COMPLETED SAFELY 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

