

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Monday, October 02, 2017

LEONARD 2N SURFACE

Job Date: Thursday, August 31, 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 2N** 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 30 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 #: 389404	Ship To #: 3809736	Quote #:	Sales Order #: 0904262342							
Customer: EXTRACTION OIL & GAS -		Customer Rep: Shawn McIntyre								
Well Name: LEONARD	Well #: 2N	API/UWI #: 05-123-45045-00								
Field: WATTENBERG	City (SAP): FIRESTONE	County/Parish: WELD	State: COLORADO							
Legal Description: NW SW-21-2N-67W-1808FSL-494FWL										
Contractor: UNKNOWN		Rig/Platform Name/Num: WORKOVER RIG								
Job BOM: 7521 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Nicholas Peterson								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	1556ft	Job Depth TVD								
Water Depth		Wk Ht Above Floor	5'							
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	1556	0	1557
Open Hole Section			13.5				0	1557	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625	1	HES	1556		Top Plug	9.625	1	HES	
Float Shoe	9.625	1	HES	1513		Bottom Plug				
Float Collar						SSR plug set				
Insert Float						Plug Container	9.625	1	HES	
Stage Tool						Centralizers				
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	30	bbl	8.33		42	4	1,260	
Stage/Plug #: 2										
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	9.2	5	5,060	
9.20 Gal		FRESH WATER								

last updated on 9/7/2017 8:17:32 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/min	Total Mix Fluid Gal	
3	Displacement	Fresh Water	117	bbl	8.33		42	6	4,914	
Cement Left In Pipe		Amount	43 ft		Reason			Shoe Joint		
Mix Water:		pH 7.0	Mix Water:		0 ppm	Mix Water Temperature:		75 °F		
			Chloride:							
Cement Temperature:## °F		Plug Displaced by: 8.33 lb/gal			Disp. Temperature: 75 °F					
Plug Bumped?		Yes	Bump Pressure: 450 psi			Floats Held?				Yes
Cement Returns:		30 bbl	Returns Density: 13.5 lb/gal			Returns Temperature:## °F				
Comment: Pumped 20 bbls fresh water, 10 bbls Red Dye Spaer, 170.44 bbls cement, 117 bbls displacement. Cement to surface @ 87 away got 30 bbls cement to surface.										

2.0 Real-Time Job Summary

2.1 Job Event Log

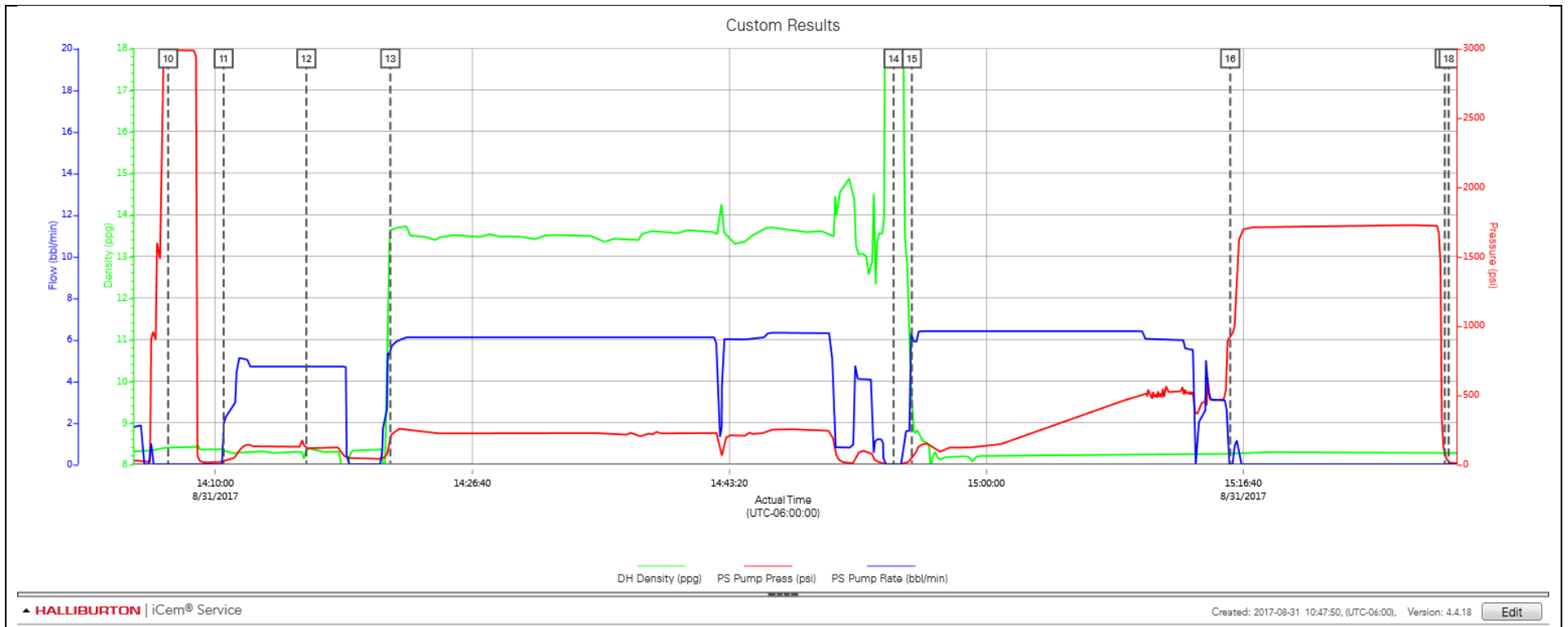
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	PS Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	8/31/2017	04:00:00	USER				CREW CALLED OUT AT 04:00, REQUESTED ON LOCATION 08:00. CREW PICKED UP CEMENT, 100 LBS OF SUGAR, TOP PLUG AND 2 LBS RED DYE FROM FT. LUPTON, CO. BULK 660, E-17, 10023106, AND PUMP RT-1.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/31/2017	07:15:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	8/31/2017	07:30:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	8/31/2017	08:00:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; CASING- 9.625 36 LB/FT @ 1,556', 13.5" HOLE 1,557' SHOE 43', FRESH WATER DISPLACEMENT, HALLIBURTON FLOATS AND PLUGS. CASING LANDED @ 13:15 08/31/2017.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/31/2017	12:00:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	8/31/2017	12:15:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
Event	7	Rig-Up Completed	Rig-Up Completed	8/31/2017	13:00:00	USER				
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/31/2017	13:30:00	USER	8.37	1.00	0.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	8/31/2017	14:03:21	COM5	8.40	4.00	0.00	BEGIN RECORDING JOB DATA.
Event	10	Test Lines	Test Lines	8/31/2017	14:06:56	COM5	8.40	2982.00	0.00	PRESSURE TESTED IRON TO 2500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 720 PSI, 5TH GEAR STALL OUT @ 1510 PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	8/31/2017	14:10:32	COM5	8.36	19.00	1.20	PUMPED 20 BBLS FRESH WATER. PUMP RATE 5 BBLS/MIN @ 93 PSI.
Event	12	Pump Spacer 2	Pump Spacer 2	8/31/2017	14:15:54	COM5	8.37	105.00	4.70	PUMP 10 BBLS OF FRESH WATER WITH RED DYE. PUMP

RATE 5 BBLS/MIN @ 93 PSI.

Event	13	Pump Lead Cement	Pump Lead Cement	8/31/2017	14:21:21	COM5	13.67	194.00	5.70	PUMP 550 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.74 FT3/SK, 9.2 GAL/SK, 170.44 BBLS. DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Shutdown	Shutdown	8/31/2017	14:53:59	COM5	18.75	-4.00	0.00	
Event	15	Pump Displacement	Pump Displacement	8/31/2017	14:55:10	COM5	9.62	65.00	5.90	BEGIN CALCULATED DISPLACEMENT OF 117 BBLS WITH FRESH WATER. PUMP RATE @ 7 BBLS/MIN. CEMENT BACK TO SURFACE 87 BBLS IN, 30 BBLS CEMENT BACK TO SURFACE.
Event	16	Bump Plug	Bump Plug	8/31/2017	15:15:49	COM5	8.26	933.00	0.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 450 PSI OVER BUMP TO 1500 PSI FOR 15 MIN CASING PRESSURE TEST PER COMPANY MANS REQUEST.
Event	17	Check Floats	Check Floats	8/31/2017	15:29:44	USER	8.25	70.00	0.00	RELEASED PRESSURE, FLOATS HELD, 1 BBL BACK.
Event	18	End Job	End Job	8/31/2017	15:29:59	COM5				
Event	19	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/31/2017	15:50:11	USER				DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	20	Rig-Down Equipment	Rig-Down Equipment	8/31/2017	15:51:51	USER				RIG DOWN BULK AND MIXING EQUIPMENT.
Event	21	Rig-Down Completed	Rig-Down Completed	8/31/2017	16:00:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	22	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/31/2017	16:15:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	23	Crew Leave Location	Crew Leave Location	8/31/2017	16:30:00	USER				THANK YOU FOR USING HALLIBURTON – NICK PETERSON AND CREW.

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

