

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Leonard 5C Production

Job Date: Thursday, September 21, 2017

Sincerely,

Fort Lupton District Cement

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 5C** 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.

62 bbls of cement to surface

5 bbls of wet shoe pumped

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 #: 3809609	Quote #:	Sales Order #: 0904311308							
Customer: EXTRACTION OIL & GAS		Customer Rep: JOSE								
Well Name: LEONARD	Well #: 5C	API/UWI #: 05-123-45048-00								
Field: WATTENBERG	City (SAP): FIRESTONE	County/Parish: WELD	State: COLORADO							
Legal Description: NW SW-21-2N-67W-1852FSL-494FWL										
Contractor: CYCLONE		Rig/Platform Name/Num: CYCLONE 37								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA/HX38199		Srv Supervisor: David Hahn								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	12400ft	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			0	1590	0	0
Casing		5.5	4.778	20			0	12273	0	0
Open Hole Section			8.5				1590	12400	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			12273		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	1	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 ³ /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		6		
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
149.34 lbm/bbl		BARITE, BULK (100003681)								
35 gal/bbl		FRESH WATER								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

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Created: Tuesday, October 03, 2017

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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	
2	ElastiCem	ELASTICEM (TM) SYSTEM	2000	sack	13.2	1.57		6	7.54	
7.54 Gal		FRESH WATER								
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	Displacement	272	bbl	8.33			8		
Cement Left In Pipe		Amount	5 ft		Reason			Shoe Joint		
Mix Water:		pH ##	Mix Water:## ppm		Chloride:			Mix Water Temperature:## °F °C		
Cement Temperature:## °F °C		Plug Displaced by:## lb/gal kg/m ³ XXXX				Disp. Temperature:## °F °C				
Plug Bumped?Yes/No		Bump Pressure:#### psi MPa				Floats Held?Yes/No				
Cement Returns:## bbl m ³		Returns Density:## lb/gal kg/m ³				Returns Temperature:## °F °C				
Comment										

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	9/20/2017	21:30:00	USER					CALLED OUT FROM EL ERNO OKLAHOMA
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/20/2017	23:30:00	USER					LEAVE YARD AFTER SAFTEY MEETING
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	9/21/2017	02:30:00	USER					ARRIVED ON LOCATION AND TALKED TO COMPANY MAN ABOUT JOB FIGURES AND THE SPOTTING OF OUR EQUIPMENT
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	9/21/2017	02:45:00	USER					ASSESSED LOCATION AN TOOK WATER SAMPLE
Event	5	Rig-Up Equipment	Rig-Up Equipment	9/21/2017	03:00:00	USER					SPOTTED EQUIPMENT AND RIGGED UP TO FLOOR RIG IS RUNNING CASING
Event	6	Other	Other	9/21/2017	03:05:00	USER					Water test=pH: __, Cl: __, temp __degrees Tannin-Lignin:____; Sulfate: _____
Event	7	Other	Other	9/21/2017	03:30:00	USER					TD: 12294, TP _12273, SJ:4.4 __, OH: 8.5__, Casing: Size/Weight/Grade: 5.5 20 P110__, Previous Casing Shoe: _
Event	8	Rig-Up Completed	Rig-Up Completed	9/21/2017	06:00:10	USER	67.00	8.44	0.30	2.10	RIG UP COMPLETE SAFETY MEETING WITH RIG HANDS AND HALLIBURTON ABOUT THE DANGERS OF OUR EQUIPMENT AND WENT OVER JOB FIGURES. READY

TO TEST LINES											
Event	9	Test Lines	Test Lines	9/21/2017	06:02:55	COM6	6358.00	8.33	0.00	2.20	LOW TEST TO 500 PSI HIGH TEST TO 6000 PSI
Event	10	Pump Spacer 1	Pump Spacer 1	9/21/2017	06:06:28	COM6	91.00	8.16	5.20	0.50	50 BBL TUNED SPACER @ 11.5 PPG
Event	11	Pump Lead Cement	Pump Lead Cement	9/21/2017	06:15:32	COM6	682.00	12.98	8.00	9.30	2000 SKS- 1.57-7.54-13.2 PPG 559 BBL CMT @ 13.2 PPG
Event	12	Clean Lines	Clean Lines	9/21/2017	07:31:55	COM6	14.00	13.08	0.00	587.90	
Event	13	Drop Top Plug	Drop Top Plug	9/21/2017	07:36:14	COM6	242.00	8.21	8.40	611.00	
Event	14	Pump Displacement	Pump Displacement	9/21/2017	07:36:17	COM6	279.00	8.29	8.20	611.50	pump 272 bbl fresh water average rate 7.5
Event	15	Bump Plug	Bump Plug	9/21/2017	08:09:03	COM6	3109.00	8.43	0.00	268.70	bump plug 2670 take to 3175, pressure up to 4200 burst plug pump 5 bbl fresh water for wet shoe
Event	16	Check Floats	Check Floats	9/21/2017	08:11:00	USER	2534.00	8.41	4.80	274.40	FLOATS HELD GOT 2 BBL BACK AND COMPANY MAN IS HAPPY
Event	17	End Job	End Job	9/21/2017	08:20:00	COM6					50 bbl spacer & 62 bbl cement to surface
Event	18	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	9/21/2017	08:25:00	USER					SAFETY MEETING OVER RIGGING DOWN
Event	19	Rig-Down Equipment	Rig-Down Equipment	9/21/2017	08:30:00	USER					RIG DOWN EQUIPMENT AND HOSES
Event	20	Rig-Down Completed	Rig-Down Completed	9/21/2017	09:00:00	USER					RIG DOWN COMPLETE
Event	21	Safety Meeting - Departing Location	Safety Meeting - Departing Location	9/21/2017	09:15:00	USER					SAFETY MEETING OVER DEPARTURE AND JOURNEY HOME
Event	22	Depart Location for Home	Depart Location for Home	9/21/2017	09:30:00	USER					THANK YOU FOR CHOOSING HALLIBURTON

3.0 Job Chart

3.1 Job Chart

