

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Tuesday, October 03, 2017

### **Leonard 6N Production**

Job Date: Sunday, September 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 **Leonard 6N** 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.

**Approximately 41 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

## Cementing Job Summary

## The Road to Excellence Starts with Safety

Sold To #: 389404	Ship To #: 3809744	Quote #:	Sales Order #: 0904318914							
Customer: EXTRACTION OIL & GAS		Customer Rep: Jose Torres								
Well Name: LEONARD	Well #: 8N	API/UWI #: 05-123-45047-00								
Field: WATTENBERG	City (SAP): FIRESTONE	County/Parish: WELD	State: COLORADO							
Legal Description: NW SW-21-2N-87W-1824FSL-494FWL										
Contractor: CYCLONE		Rig/Platform Name/Num: CYCLONE 37								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Aaron Smith								
<b>Job</b>										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	12096ft	Job Depth TVD								
Water Depth		Wk Ht Above Floor								
Perforation Depth (MD)	From	To								
<b>Well Data</b>										
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			0	1590	0	1590
Casing	0	5.5	4.778	20			0	12076	0	7428
Open Hole Section			8.5				1590	12096	1590	7428
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			12076		Top Plug	5.5	1	HES	
Float Shoe	5.5	1	KLX	12076		Bottom Plug	5.5		HES	
Float Collar	5.5	1		12075		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
<b>Fluid Data</b>										
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		6		
<b>Fluid Data</b>										
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	
2	ElastiCem	ELASTICEM (TM) SYSTEM	1950	sack	13.2	1.57		6	7.53	

last updated on 10/3/2017 1:38:34 PM

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**HALLIBURTON***Cementing Job Summary*

7.53 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	268	bbl	8.33			8	
Cement Left In Pipe		Amount	5 ft		Reason			Shoe Joint	
Comment 41 bbls cement to surface									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	9/24/2017	07:00:00	USER				For on location @ 1200
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	9/24/2017	11:00:00	USER				Journey management meeting held prior to departure
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/24/2017	11:15:00	USER				Journey called into dispatch.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	9/24/2017	11:30:00	USER				With all equipment and materials.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/24/2017	11:35:00	USER				JSA to discuss the hazards of rig-up.
Event	6	Rig-Up Equipment	Rig-Up Equipment	9/24/2017	11:40:00	USER				Rigged up all surface lines and equipment.
Event	7	Rig-Up Completed	Rig-Up Completed	9/24/2017	12:30:00	USER				With no incidents or injuries
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/24/2017	13:30:00	USER	0.00	8.46	3.00	With all essential personnel to discuss the job procedure and hazards of the job.
Event	9	Start Job	Start Job	9/24/2017	13:53:24	COM5	0.00	8.51	0.00	With water supplied from uprights. Water tested good to mix cement. Ph 7, Cl 88 ppm, Temo 70
Event	10	Test Lines	Test Lines	9/24/2017	13:57:46	COM5	0.00	8.59	5128.00	@5000 psi, Pressure test was good.
Event	11	Pump Spacer 1	Pump Spacer 1	9/24/2017	14:03:24	COM5	3.70	11.78	335.00	50 bbls Tuned Spacer @ 11.5. ppg, 3.73 ft3/sk, 23.4 gal/sk verified with pressurized scales. 4 bpm 250 psi.
Event	12	Pump Lead Cement	Pump Lead Cement	9/24/2017	14:16:04	COM5	5.00	13.29	225.00	1950 sks (545.25 bbls,) Elasticem @13.2 ppg, 1.57 ft3/sk, 7.53 gal/sk. Verified with pressurized scales. 8 bpm 470 psi.
Event	13	Shutdown	Shutdown	9/24/2017	15:31:52	COM5	0.00	13.77	42.00	To remove cap and drop plug, and blow lines down.
Event	14	Drop Top Plug	Drop Top Plug	9/24/2017	15:33:24	COM5	0.00	13.03	102.00	KLX tool hand hand-dropped plug in HES plug container, verified by customer rep.

Event	15	Clean Lines	Clean Lines	9/24/2017	15:34:30	USER	0.00	15.17	7.00	Wash pumps and lines.
Event	16	Pump Displacement	Pump Displacement	9/24/2017	15:39:29	COM5	3.30	8.10	8.00	267.98 bbls fresh water.
Event	17	Other	Spacer Returns to Surface	9/24/2017	15:55:58	COM5	9.30	8.29	2929.00	@ 177 bbls displacement, 50 bbls to surface.
Event	18	Other	Cement Returns to Surface	9/24/2017	16:04:02	COM5	8.40	8.30	3012.00	@227 bbls displacement, 41 bbls to surface.
Event	19	Bump Plug	Bump Plug	9/24/2017	16:13:39	COM5	0.00	8.13	18.00	@ 500 over, final circulating pressure 2620 @5bpm.
Event	20	End Job	End Job	9/24/2017	16:13:48	COM5				End recording data.
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/24/2017	16:15:00	USER	0.00	8.11	5.00	JSA to discuss the hazards of rig-down.
Event	22	Rig-Down Equipment	Rig-Down Equipment	9/24/2017	16:30:00	USER	0.00	8.29	29.00	Rig-down all surface lines and equipment.
Event	23	Rig-Down Completed	Rig-Down Completed	9/24/2017	17:00:00	USER				With no incidents or injuries.
Event	24	Depart Location Safety Meeting	Depart Location Safety Meeting	9/24/2017	17:05:00	USER				Journey management meeting held prior to departure.
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	9/24/2017	17:35:00	USER				Journey called into dispatch.



3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

