

## HALLIBURTON

## Cementing Job Summary

*The Road to Excellence Starts with Safety*

Sold To #: 345242		Ship To #: 3730117		Quote #:		Sales Order #: 0903867183					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: Woodie Beardsley							
Well Name: BENELLI FEDERAL			Well #: LC22-765			API/UWI #: 05-123-42975-00					
Field: WILDCAT		City (SAP): RAYMER		County/Parish: WELD		State: COLORADO					
Legal Description: NE NW-22-9N-59W-400FNL-1612FWL											
Contractor: NOBLE					Rig/Platform Name/Num: H&P 517						
Job BOM: 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB61755					Srcv Supervisor: Luke Kosakewich						
<b>Job</b>											
Formation Name											
Formation Depth (MD)		Top			0			Bottom		10866	
Form Type											
BHST											
Job depth MD		10857ft			Job Depth TVD		6625				
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			9.625	8.921	36			0	1909	0	0
Casing			5.5	4.778	20			0	10857	0	6625
Open Hole Section				8.5				0	10866	0	0
Open Hole Section				8.5				2500	6255		
<b>Tools and Accessories</b>											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5					Top Plug	5.5	1	HES		
Float Shoe	5.5	1		10857		Bottom Plug	5.5	2	HES		
Float Collar	5.5	1		10819		SSR plug set	5.5		HES		
Insert Float	5.5					Plug Container	5.5		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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	11.5 lb/gal Tuned Spacer III w/ Chems	Tuned Spacer III			40	bbl	11.5	3.78		4	
0.50 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)									

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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.79		5		
3	ElastiCem W/O CBL	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		6	7.54	
4	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	457	sack	13.2	1.6		6	7.69	
5	NeoCem Tail	NeoCem TM	549	sack	13.2	2.04		6	9.75	
6	Displacement	Displacement	240	bbl	8.33					
Cement Left In Pipe		Amount	Reason		Shoe Joint					
Mix Water:		7.5 ph.	Mix Water Chloride:		0 ppm	Mix Water Temperature:				60 °F
Cement Temperature:		## °F °C	Plug Displaced by:		## lb/gal kg/m3 XXXX	Disp. Temperature:				## °F °C
Plug Bumped?		Yes	Bump Pressure:		#### psi MPa	Floats Held?				Yes
Cement Returns:		## bbl m3	Returns Density:		## lb/gal kg/m3	Returns Temperature:				## °F °C
Comment No spacer to surface. Top of lead cement at 1789'.										

## 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	2/27/2017	10:00:00	USER				Callout for on loc. time 1700
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/27/2017	10:05:00	USER				Discuss route, Safe driving, start JM
Event	3	Crew Leave Yard	Crew Leave Location for Location	2/27/2017	10:10:00	USER				
Event	4	Arrive At Loc	Arrive At Loc	2/27/2017	10:12:00	USER				Meet with customer to discuss job. Rig running casing
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	2/27/2017	10:13:00	USER				hazard hunt, discuss where to spot trucks
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	2/27/2017	10:28:00	USER				JSAS safe rig up
Event	7	Rig-Up Equipment	Rig-Up Equipment	2/27/2017	10:30:00	USER				Rigged up all surface lines and iron to buffer zone.
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	2/27/2017	13:00:00	USER				Held safety meeting with all associated personnel. Discuss hazards of our equipment, iron, and pressure.
Event	9	Start Job	Start Job	2/27/2017	16:08:47	COM1				
Event	10	Drop Bottom Plug	Drop Bottom Plug	2/27/2017	16:14:08	COM1				Whitnessed company man drop bottom plug.
Event	11	Test Lines	Test Lines	2/27/2017	16:15:42	COM1		8.33	4700.00	Test lines to 4500psi
Event	12	Pump Spacer 1	Pump Spacer 1	2/27/2017	16:36:48	COM1	5.50	11.50	100.00	Pumped 40 bbl. of tuned spacer mixed at 11.5 ppg. with surfactents. Density was verified by pressurized scales.
Event	13	Check Weight	Check Weight	2/27/2017	16:41:55	COM1	5.50	11.58	291.00	Spacer weight up at 11.38 ppg.
Event	14	Drop Bottom Plug	Drop Bottom Plug	2/27/2017	16:52:37	COM1				
Event	15	Check Weight	Check Weight	2/27/2017	16:55:04	COM1		13.25	42.00	Cement weight 13.25 ppg.
Event	16	Pump Lead Cement	Pump Lead Cement	2/27/2017	16:59:46	COM1	7.00	13.20	500.00	Pumped 42 bbl. of 1st lead w/o Super CBL mixed at 13.2 ppg. Density was verified by scale.

Event	17	Pump Cement	Pump Cement	2/28/2017	17:05:32	COM1	7.10	12.94	526.00	Pumped 131 bbl. of 2nd lead cement w/ Super CBL mixed at 13.2 ppg. Density was verified by pressurized scales.
Event	18	Check Weight	Check Weight	2/28/2017	17:07:18	COM1	8.20	13.06	925.00	Cement weighed up at 13.14 ppg.
Event	19	Pump Tail Cement	Pump Tail Cement	2/28/2017	17:22:41	COM1	7.50	13.21	649.00	Pumped 200 bbl. (549 sks) of tail cement mixed at 13.2 ppg. density was verified by pressurized scales.
Event	20	Check Weight	Check Weight	2/28/2017	17:31:12	COM1	7.70	13.38	959.00	Cement weighted at 13.23 ppg.
Event	21	Shutdown	Shutdown	2/28/2017	17:52:27	COM1				Washed pumps and blew down lines.
Event	22	Drop Top Plug	Drop Top Plug	2/28/2017	18:03:36	COM1				Witnessed company representative drop top plug.
Event	23	Pump Displacement	Pump Displacement	2/28/2017	18:05:42	COM1	10.00	8.33	3.00	Pumped 240 bbl. of fresh water with MMCR in the first 20 bbl. and biocide was added throughout the rest of displacement. Good returns throughout. No spacer came back to surface.
Event	24	Bump Plug	Bump Plug	2/28/2017	18:36:22	COM1		8.36	2541.00	Bump the plug at three bbl. a minute with a pressure at 1640 psi. Pressured up on the plug to 2600 psi. Held for five minutes and checked floats.
Event	25	Check Floats	Check Floats	2/28/2017	18:40:20	USER				Bled off pressure and checked floats. Floats held. Got 3.5 bbl. of fluid back.
Event	26	End Job	End Job	2/28/2017	18:41:58	COM1				
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	2/28/2017	18:45:00	USER				JSA safe rig down
Event	28	Rig Down Lines	Rig Down Lines	2/28/2017	19:00:00	USER				
Event	29	Crew Leave Location	Crew Leave Location	2/28/2017	22:00:00	USER				Start JM. Thanks for choosing Halliburton!