

## HALLIBURTON

## Cementing Job Summary

*The Road to Excellence Starts with Safety*

Sold To #: 345242	Ship To #: 3768175	Quote #:	Sales Order #: 0903918134							
Customer: NOBLE ENERGY INC - EBUS		Customer Rep: Woodie Beardsley								
Well Name: WELLS RANCH STATE	Well #: AA33-744	API/UWI #: 05-123-43878-00								
Field: WATTENBERG	City (SAP): GILL	County/Parish: WELD	State: COLORADO							
Legal Description: SE SW-21-6N-63W-255FSL-2540FWL										
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 517								
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB70026		Srv Supervisor: Nathaniel Moore								
<b>Job</b>										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST	215 degF							
Job depth MD	16456ft	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		9.625	8.921	36			0	1925	0	1925
Casing		5.5	4.778	20			0	16441	0	6719
Open Hole Section			8.5				2500	6719		
Open Hole Section			8.5				6719	16456		
<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				
35.10 gal/bbl		FRESH WATER								
0.40 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
147.42 lbm/bbl		BARITE, BULK (100003681)								
0.40 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
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	
2	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.79				
35.90 gal/bbl		FRESH WATER								

iCem® Service

(v. 4.3.44)

Created: Monday, March 27, 2017

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147.42 lbm/bbl		BARITE, BULK (100003681)							
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	ElastiCem	ELASTICEM™ SYSTEM	150	sack	13.2	1.57		6	7.53
7.53 Gal		FRESH WATER							
0.90 %		SCR-100 (100003749)							
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
4	ElastiCem w/ SCBL	ELASTICEM™ SYSTEM	574	sack	13.2	1.6		6	7.69
0.50 %		SCR-100 (100003749)							
7.69 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
5	NeoCem NT1	NeoCem TM	1109	sack	13.2	2.04		6	9.75
9.75 Gal		FRESH WATER							
0.08 %		SCR-100 (100003749)							
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
6	Displacement	Displacement	360	bbl	8.33				
Cement Left In Pipe		Amount	Reason					Shoe Joint	

5 bbl spacer 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)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	3/24/2017	06:00:00	USER				OL time 1230. Verify equipment and materials. Rolled pump truck from another job.
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	3/24/2017	12:00:00	USER				Sign in with customer. Spot in and rig up equipment. Rig running casing. TD 16456' 8.5" open hole. TP 16441' 5.5" 20# P-110. Float collar 16394'. Surface 1926' 9.625" 36# J-55. MW 9.2 ppg TVD 6700'. Water PH 7 Chlorides <100 Sulfates <200 Temp 75 degrees.
Event	3	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/24/2017	14:45:00	USER				Discuss job procedure with HES and rig crew
Event	4	Start Job	Start Job	3/24/2017	15:10:58	COM1				Drop 1st bottom plug. Fill lines 3 bbl water
Event	5	Test Lines	Test Lines	3/24/2017	15:15:35	COM1	8.63		4629.00	500 psi kickout test and 4800 psi pressure test against 2" lo-torc
Event	6	Test Lines	Test Lines	3/24/2017	15:22:47	COM1	8.61		3598.00	3500 psi pressure test against rig's IBOP.
Event	7	Pump Spacer 1	Pump Spacer 1	3/24/2017	15:30:40	COM1	11.50	4.50	23.00	80 bbl tuned spacer 11.5 ppg with surfactants in first 40 bbl.
Event	8	Drop Bottom Plug	Drop Bottom Plug	3/24/2017	15:47:14	COM1				Drop 2nd bottom plug
Event	9	Pump Lead Cement	Pump Lead Cement	3/24/2017	15:53:10	COM1	13.20	4.00	170.00	724 sks/206 bbl 13.2 ppg 1.6 ft3/sk 7.69 gal/sk. No CBL in first 150 sks
Event	10	Check Weight	Check weight	3/24/2017	15:53:58	COM1	12.95	4.90	334.00	13.2 ppg verified with pressurized scales
Event	11	Check Weight	Check weight	3/24/2017	16:05:05	COM1	13.29	8.00	757.00	13.2 ppg
Event	12	Pump Tail Cement	Pump Tail Cement	3/24/2017	16:21:38	COM1	13.23	6.10	498.00	1109 sks/403 bbl 13.2 ppg 2.04 ft3/sk 9.75 gal/sk
Event	13	Check Weight	Check weight	3/24/2017	16:23:43	COM1	13.27	8.00	1034.00	13.2 ppg
Event	14	Check Weight	Check weight	3/24/2017	16:50:08	COM1	13.28	8.00	1035.00	13.2 ppg
Event	15	Shutdown	Shutdown	3/24/2017	17:24:28	COM1				Wash pumps and lines/blow down iron from rig floor
Event	16	Drop Top Plug	Drop Top Plug	3/24/2017	17:24:33	COM1				Witnessed by customer rep

Event	17	Pump Displacement	Pump Displacement	3/24/2017	17:25:41	COM1	8.24	10.00	18.00	360 bbl water displacement with Aldecide. MMCR in first 10 bbl. 5 bbl spacer to surface
Event	18	Bump Plug	Bump Plug	3/25/2017	18:03:59	COM1			2308.00	1900 psi final pump pressure. Pressured up to 2350 psi.
Event	19	Other	Check floats	3/25/2017	18:05:55	COM1				4 bbl back. Floats held
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/25/2017	18:10:00	USER				
Event	21	End Job	End Job	3/25/2017	18:12:28	COM1				
Event	22	Depart Location Safety Meeting	Depart Location Safety Meeting	3/25/2017	19:30:00	USER				