

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242	Ship To #: 3805797	Quote #:	Sales Order #: 0904243128							
Customer: NOBLE ENERGY INC - EBUS		Customer Rep: Chris Ewing								
Well Name: WELLS RANCH	Well #: BB11-643	API/UWI #: 05-123-44962-00								
Field: WATTENBERG	City (SAP): GILL	County/Parish: WELD	State: COLORADO							
Legal Description: NW SW-11-5N-63W-2170FSL-235FWL										
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 517								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB70026		Srv Supervisor: Bryan Kraft								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	13976ft	Job Depth TVD	6460ft							
Water Depth		Wk Ht Above Floor	4ft							
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		J-55	0	1920	0	1920
Casing	0	5.5	4.778	20	BUTTRESS	P-110	0	13990	0	6460
Open Hole Section			8.5				1920	6427	1920	6427
Open Hole Section			8.5				6427	13976	6427	6460
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	Spacer	TUNED SPACER III	80	bbl	11.5	3.78	23.5	4	2793	
		34.70 gal/bbl	FRESH WATER							
		0.60 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							
		147.42 lbm/bbl	BARITE, BULK (100003681)							
		0.60 gal/bbl	MUSOL A, 330 GAL TOTE - (790828)							
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	Cap Cement	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57	7.53	8	1130	
		0.90 %	SCR-100 (100003749)							
		7.53 Gal	FRESH WATER							

iCem® Service

(v. 4.4.18)

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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	Lead Cement	ELASTICEM (TM) SYSTEM	501	sack	13.2	1.6	7.7	8	3858
7.70 Gal		FRESH WATER							
0.30 %		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	Tail Cement	NEOCEM TM	850	sack	13.2	2.04	9.75	8	8288
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
5	Displacement	FRESH WATER	309	bbl	8.33			8	12978
Cement Left In Pipe		Amount	43 ft		Reason			Shoe Joint	
Mix Water:		pH 7.0	Mix Water Chloride:			<100 ppm		Mix Water Temperature:	
Cement Temperature:		N/A	Plug Displaced by:			8.3 lb/gal Fresh Water		Disp. Temperature:	
Plug Bumped?		Yes	Bump Pressure:			1812 psi		Floats Held?	
Cement Returns:		0 bbl	Returns Density:			N/A		Returns Temperature:	
Comment Plug bumped @ calculated displacement @ 1812 psi. The floats held and received 4 BBLS back to the truck. A slight interface of spacer was seen @ the end of displacement. Total of 3 BBLS of interface 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)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	8/22/2017	19:30:00	USER				CREW CALLED OUT AT 19:30 8/22/2017, REQUESTED ON LOCATION 1:00 8/23/2017. CREW PICKED UP CEMENT, CHEMICALS (48 GAL MUSOL A, 48 GAL DUAL SPACER B, 20 GAL D-AIR, 10 GAL MICROMATRIX), 100 LBS OF SUGAR, AND SWADGE FROM FORT LUPTON,CO. BULK 660: 11610427/11633848, BULK BACKUP AIR: 11562570/10679720, PUMP 11897034/11645460.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/22/2017	23:15:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	8/22/2017	23:30:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	8/23/2017	00:00:00	USER				E
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/23/2017	00:10:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	8/23/2017	00:20:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/23/2017	03:00:00	USER				MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	8/23/2017	03:18:51	COM5				BEGIN RECORDING JOB DATA.
Event	9	Drop Bottom Plug	Drop Bottom Plug	8/23/2017	03:19:32	USER				PLUG LEFT LANDING JOINT, VERIFIED BY CO. MAN.
Event	10	Test Lines	Test Lines	8/23/2017	03:21:50	USER	8.33		5028.00	PRESSURE TESTED IRON TO 4500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 880 PSI, 5TH GEAR STALL OUT @ 2000 PSI.
Event	11	Pump Spacer	Pump Tuned Spacer @ 11.5 ppg	8/23/2017	03:33:51	USER	11.50	3.50	248.00	PUMP 80 BBLS OF TUNED SPACER @ 11.5 LB/GAL, ADDED 48 GAL MUSOL A, 48 GAL DUAL SPACER B, 20 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Drop Bottom Plug	Drop Bottom Plug	8/23/2017	03:52:23	USER				PLUG LEFT LANDING JOINT, VERIFIED BY CO. MAN.
Event	13	Pump Cap Cement	Pump Cap Cement @ 13.2	8/23/2017	03:54:23	USER	13.23	7.50	471.00	PUMP 150 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.53

ppg										GAL/SK, 42 BBLS, TOC @ 1895', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Pump Lead Cement	Pump Lead Cement @ 13.2 ppg	8/23/2017	04:01:41	USER	13.22	8.10	568.00	PUMP 501 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.60 YIELD, 7.7 GAL/SK, 143 BBLS, TOL @ 2922', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	15	Pump Tail Cement	Pump Tail @ 13.2 ppg	8/23/2017	04:18:19	USER	13.33	8.00	423.00	PUMP 850 SKS OF NEOCEM @ 13.2 LB/GAL, 2.04 YIELD, 9.75 GAL/SK, 309 BBLS, TOT @ 6427', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	16	Shutdown	Shutdown	8/23/2017	04:59:39	USER				SHUTDOWN TO WASH PUMPS/LINES AND DROP TOP PLUG.
Event	17	Clean Lines	Clean Lines	8/23/2017	05:07:29	USER				CLEAN PUMPS AND LINES CLEAR OF CEMENT.
Event	18	Drop Top Plug	Drop Top Plug	8/23/2017	05:16:05	USER				PLUG LEFT LANDING JOINT, VERIFIED BY CO. MAN.
Event	19	Pump Displacement	Pump Fresh Water Displacement	8/23/2017	05:17:17	USER	8.13	10.10	330.00	BEGIN CALCULATED DISPLACEMENT OF 309 BBLS WITH FRESH WATER. 10 GAL MICROMATRIX AND ALGECIDE ADDED TO THE FIRST 20 BBLS, ALGECIDE ADDED TO THE REST OF DISPLACEMENT.
Event	20	Spacer Returns to Surface	Spacer Returns to Surface	8/23/2017	05:52:44	USER	8.16	2.90	1779.00	SLIGHT INTERFACE OF SPACER RETURNED TO SURFACE @ 306 BBLS INTO DISPLACEMENT. TOTAL OF 3 BBLS OF INTERFACE TO SURFACE.
Event	21	Bump Plug	Bump Plug	8/23/2017	05:55:57	USER	8.16	2.90	1814.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 500 PSI OVER FINAL CIRCULATING PRESSURE OF 1812 PSI.
Event	22	Shutdown	Shutdown	8/23/2017	05:56:18	USER				SHUTDOWN FOR 5 MINUTES.
Event	23	Check Floats	Check Floats	8/23/2017	06:02:27	USER				RELEASED PRESSURE, FLOATS HELD, 4 BBLS BACK.
Event	24	End Job	End Job	8/23/2017	06:04:01	USER				STOP RECORDING JOB DATA.
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/23/2017	06:10:00	USER				DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	26	Rig-Down Completed	Rig-Down Completed	8/23/2017	07:00:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/23/2017	07:15:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	28	Crew Leave Location	Crew Leave Location	8/23/2017	07:30:00	USER				THANK YOU FOR USING HALLIBURTON - BRYAN KRAFT AND CREW.