

## The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3954776		Quote #: 0022639048		Sales Order #: 0906046383					
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: NOBLE REP							
Well Name: WELLS RANCH STATE			Well #: BB03-620		API/UWI #: 05-123-49940-00						
Field: WATTENBERG		City (SAP): GILL		County/Parish: WELD		State: COLORADO					
Legal Description: SW SW-3-5N-63W-733FSL-919FWL											
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 517							
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB31357				Srv Supervisor: Adam Covington							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST		230 degF					
Job depth MD		16052ft		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	1954	0	0	
Casing		5.5	4.892	17			0	16052	0	6760	
Open Hole Section			8.5				1954	16067	0	6760	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			16052		Top Plug	5.5	1	HES		
Float Shoe	5.5					Bottom Plug	5.5	2	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 <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Prime Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS			120	bbl	11.5	3.87		5	

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	ElastiCem	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.67		8	8.03		
8.03 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	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	445	sack	13.2	1.67		8	8.04		
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	NeoCem NT1	NeoCem TM	1050	sack	13.2	2.04		8	9.79		
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	Displacement	371	bbl	8.33			10			
Cement Left In Pipe		Amount	49 ft		Reason			Shoe Joint			
Mix Water:		pH 7	Mix Water Chloride:			0 ppm		Mix Water Temperature:		70 °F	
Cement Temperature:		°F °C		Plug Displaced by:			8.33 lb/gal		Disp. Temperature:		70 °F
Plug Bumped?		Yes		Bump Pressure:			2280 psi		Floats Held?		Yes
Cement Returns:		0 bbl		Returns Density:			9.8 lb/gal		Returns Temperature:		°F °C
Comment No Cement or Spacer to Surface. BUMPED PLUG. FCP-2280 PSI. TOOK UP TO 3000 PSI AND HELD FOR 5 MINUTES AS PER CO MAN. . TOTC-6701' TOLC-3455' TOC-2425'											

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	10/26/2019	00:30:00	USER	HES CREW WAS CALLED OUT BY SERVICE COORDINATORS FOR AN ON LOCATION TIME OF 0630
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/26/2019	03:20:00	USER	MET WITH ALL HES EMPLOYEES, DISCUSSED DRIVING DIRECTIONS, DRIVING AT NIGHT AND FOLLOWING DISTANCES.
Event	3	Depart Shop for Location	Depart Shop for Location	10/26/2019	03:30:00	USER	DEPARTED FOR LOCATION.
Event	4	Arrive At Loc	Arrive At Loc	10/26/2019	05:05:00	USER	ARRIVED ON LOCATION EARLY. TALKED TO COMPANY MAN. THEY WERE GETTING GAS BACK SO TOLD US TO WAIT. PERFORMED HAZARD HUNT AND GOT NUMBERS. TD-16067' TP-16051' 5.5" 17# FC-16003' PC-1954' 9 5/8" 36# TVD-6760' MUD- 9.8#. WATER-- 70 DEGREES, CHLORIDES-0, PH-7.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	10/26/2019	14:00:00	USER	MET WITH ALL HES CREW MEMBERS DISCUSSED, SWINGS, TRIP HAZARDS AND TEAM LIFTS.

Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	10/26/2019	16:00:00	USER	MET WITH ALL HES AND RIG CREW MEMBERS. DISCUSSED PRESSURES, JOB PROCEDURE AND EMERGENCY PROCESS.
Event	7	Start Job	Start Job	10/26/2019	16:24:04	COM5	FILLED LINES WITH 3 BBLS OF FRESH WATER. 4 BPM, 115 PSI.
Event	8	Pressure Test	Pressure Test	10/26/2019	16:39:01	USER	STARTED BY PERFORMING AT 500 PSI KICKOUT TEST, 5TH GEAR STALL OUT. THEN FIRST TESTED THE RIGS LINES AT 2500 PSI. HELD FOR A MINUTE, BLEED OFF AND PRESSURED OUR LINE TO 5000 PSI. HELD FOR 2 MINUTES.
Event	9	Drop Bottom Plug	Drop Bottom Plug	10/26/2019	16:44:31	COM5	CO. MAN DROPPED FIRST HALLIBURTON 5.5" BOTTOM PLUG. ADAM COVINGTON WITNESSED.
Event	10	Pump Spacer 1	Pump Spacer 1	10/26/2019	16:44:40	COM5	PUMPED 120 BBLS OF 11.5#, 3.87y, 24.5wr TUNED PRIME SPACER AT 5 BPM, 145 PSI. USED 20 GALLONS OF D-AIR MIXED ON THE FLY.
Event	11	Drop Bottom Plug	Drop Bottom Plug	10/26/2019	17:14:28	COM5	ADAM COVINGTON DROPPED 2ND HALLIBURTON 5.5" BOTTOM PLUG. DRILLER WITNESSED.
Event	12	Pump Cap Cement	Pump Cap Cement	10/26/2019	17:15:17	COM5	PUMPED 42 BBLS (140 SKS) 13.2#, 1.67y, 8.03wr OF CAP CEMENT AT 8 BPM, 538 PSI.

Event	13	Pump Lead Cement	Pump Lead Cement	10/26/2019	17:24:21	COM5	PUMPED 132 BBLS (445 SKS) OF 13.2#, 1.67y, 8.04wr LEAD CEMENT AT 8 BPM, 700 PSI. (MIX GALLONS FOR CAP AND LEAD 4,702 G/ 4,061G)
Event	14	Pump Tail Cement	Pump Tail Cement	10/26/2019	17:39:59	COM5	PUMPED 381.5 BBLS (1050 SKS) OF 13.2#, 2.04y, 9.79wr TAIL CEMENT AT 8 BPM, 880 PSI. (10,279 G/ 10,316 G.)
Event	15	Check Weight	Check Weight	10/26/2019	17:42:17	COM5	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#.
Event	16	Shutdown	Shutdown	10/26/2019	18:29:06	COM5	SHUTDOWN BLOW LINES BACK, WASH PUMP AND GET READY TO DROP PLUG.
Event	17	Clean Lines	Clean Lines	10/26/2019	18:37:54	COM5	CLEANED PUMPS AND LINES.
Event	18	Drop Top Plug	Drop Top Plug	10/26/2019	18:41:19	COM5	COMPANY MAN DROPPED HALLIBURTON 5.5" TOP PLUG. ADAM COVINGTON WITNESSED.
Event	19	Pump Displacement	Pump Displacement	10/26/2019	18:41:35	COM5	PUMPED 371 BBLS OF DISPLACEMENT. FIRST 20 BBLS GONE HAD 10 GALLONS OF MMCR DISPERSED THROUGHOUT. THEN THE BE3 PACKETS WERE DISPERSED. CAUGHT CEMENT AT 20 BBLS OF DISPLACEMENT AWAY. 10 BPM, 1400 PSI.
Event	20	Bump Plug	Bump Plug	10/26/2019	19:28:51	COM5	BUMPED PLUG. FCP-2280 PSI. TOOK UP TO 3000 PSI AND HELD FOR 5 MINUTES AS PER CO MAN.

Event	21	Other	Other	10/26/2019	19:33:51	COM5	bled pressure back to truck. GOT 5 BBLS OF WATER BACK TO THE TRUCK ONCE FLOW STOPPED, INDICATING THAT THE FLOATS HELD.
Event	22	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	10/26/2019	19:40:00	USER	MET WITH HES EMPLOYEES DISCUSSED TEAM LIFTS, STRETCHING BECAUSE ITS COLD AND SWINGS.
Event	23	End Job	End Job	10/26/2019	19:47:59	COM5	JOB COMPLETED NO SPACER OR CEMENT TO SURFACE. TOTC-6701' TOLC-3455' TOC-2425'
Event	24	Depart Location Safety Meeting	Depart Location Safety Meeting	10/26/2019	22:10:00	USER	MET WITH HES CREW MEMBERS AND DISCUSSED HOS, DIRECTIONS AND DRIVING AT NIGHT.
Event	25	Depart Location	Depart Location	10/26/2019	22:30:00	USER	JOB COMPLETELY SUCCESSFULLY BY ADAM COVINGTON AND CREW.

## 3.0 Attachments

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### 3.1 Job Chart

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