

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3730134		Quote #:		Sales Order #: 0903887308					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: Dave Nielson							
Well Name: HAZZARD FEDERAL			Well #: LC22-735		API/UWI #: 05-123-42980-00						
Field: WILDCAT		City (SAP): RAYMER		County/Parish: WELD		State: COLORADO					
Legal Description: NW NE-22-9N-59W-400FNL-1851FEL											
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 524							
Job BOM: 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB70026				Srcv Supervisor: Nicholas Roles							
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type											
BHST											
Job depth MD		10963ft			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	1929	0	1929	
Casing		5.5	4.778	20			0	10960	0	6066	
Open Hole Section			8.5				1929	10973	1929	6066	
Tools and Accessories											
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			10960	Bottom Plug	5.5	2	HES			
Float Collar	5.5				SSR plug set	5.5		HES			
Insert Float	5.5				Plug Container	5.5		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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III			40	bbl	11.5	3.78		6	
147.42 lbm/bbl		BARITE, BULK (100003681)									
35.10 gal/bbl		FRESH WATER									
0.40 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)									
0.40 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)									
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/min	Total Mix Fluid Gal	
2	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.79		6		
147.42 lbm/bbl			BARITE, BULK (100003681)							
35.90 gal/bbl			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 Lead W/O CBL	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		6	7.54	
7.54 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	ElastiCem W /CBL	ELASTICEM (TM) SYSTEM	458	sack	13.2	1.6		6	7.69	
0.30 %			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 Tail	NeoCem TM	545	sack	13.2	2.04		6	9.75	
0.05 %			FE-2 (100001615)							
9.75 Gal			FRESH WATER							
0.04 %			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	242	bbl	8.33			6		
Cement Left In Pipe		Amount	45 ft		Reason			Shoe Joint		
Comment No spacer 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	3/7/2017	23:30:00	USER				Crew call out for o/I at 0530
Event	2	Arrive at Location from Service Center	Arrive at Location from Service Center	3/7/2017	05:30:00	USER				Met with company man to discuss job details and procedure. Performed hazard hunt and site assessment. Rig just landed on bottom and began to circulate. We waited on relief pump due to previous pump not performing well.
Event	3	Standby - Other - see comments	Other	3/7/2017	06:00:00	USER				Water Test- PH-6 Chlo-0 Temp-65 Cement temp-71
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/7/2017	06:30:00	USER				All hse present. Discussed bulk and iron placement and all red zone areas. Caution taped high pressure zones.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/7/2017	07:00:00	USER				Discussed job associated hazards, contingencies and job procedure with all job associated personnel.
Event	6	Start Job	Start Job	3/7/2017	07:55:51	COM1				TD-10973' TP-10963' 5.5" 20#, FC-10920', TVD-6066', OH-8.5", SURF-1929' 9.625" 36#, MUD-9.2#
Event	7	Test Lines	Test Lines	3/7/2017	08:16:41	COM1		8.59	4402.00	Pumped 5bbls fresh water to fill lines at 2bpm 85psi, closed 2" valve and performed 500psi function test, proceeded to bring pressure to 4500psi, held good with no leaks.
Event	8	Check Weight	Check Weight	3/7/2017	08:22:05	COM1				Weight verified with pressurized mud scales.
Event	9	Pump Spacer 1	Pump Spacer 1	3/7/2017	08:24:41	COM1	1.70	11.50	36.00	Pumped 80bbls of 11.5# 3.78y 23.78g/s Tuned Spacer III, first 40bbls with 16g Musol A, 16g Dual Spacer B and 10g D-Air at 6bpm 385psi.
Event	10	Check Weight	Check Weight	3/7/2017	08:27:33	COM1	5.00	11.29	347.00	Weight verified with pressurized mud scales.
Event	11	Drop Bottom Plug	Drop Bottom Plug	3/7/2017	08:45:06	COM1				Dropped by HES supervisor witnessed by company man.
Event	12	Pump Lead Cement	Pump Lead Cement	3/7/2017	08:45:11	COM1	6.00	13.20	30.00	Pumped 150sks or 41.9bbls of 13.2# 1.57y 7.54g/s Elasticem w/o CBL at 6bpm 630psi. Pumped 458sks or 130.5bbls of 13.2# 1.6y 7.69g/s Elasticem w/CBL at 8bpm 905psi

Event	13	Check Weight	Check Weight	3/7/2017	08:47:15	COM1				Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	3/7/2017	08:48:58	COM1	5.90	13.19	601.00	Weight verified with pressurized mud scales.
Event	15	Standby - Other - see comments	Standby - Other - see comments	3/7/2017	09:01:47	USER				Started to cavitate real bad and had to slow down, tried to get pressure to level out but something was stuck in HTs presumably. Ended up lasting until 30bbbls into tail cement. leveled off at 6bpm 850psi. Continued to pump rest of job at 6bpm.
Event	16	Pump Tail Cement	Pump Tail Cement	3/7/2017	09:26:44	COM1	6.00	13.20	342.00	Pumped 545sks or 198bbbls of 13.2# 2.04y 9.75g/s NeoCem at 6bpm 1045psi.
Event	17	Check Weight	Check Weight	3/7/2017	09:31:00	COM1	6.10	13.12	834.00	Weight verified with pressurized mud scales.
Event	18	Check Weight	Check Weight	3/7/2017	09:34:57	COM1	6.20	13.19	883.00	Weight verified with pressurized mud scales.
Event	19	Other	Other	3/7/2017	10:09:12	COM1				Shutdown, rig blew iron down to pits, followed with 5bbls fresh water through pumps and lines.
Event	20	Drop Top Plug	Drop Top Plug	3/7/2017	10:14:07	COM1				Dropped by HES supervisor witnessed by company man.
Event	21	Pump Displacement	Pump Displacement	3/7/2017	10:14:13	COM1				Pumped 242bbbls fresh water with first 20bbbls with 10g of MMCR, at 6bpm 1965psi.
Event	22	Bump Plug	Bump Plug	3/7/2017	10:58:18	COM1		8.17	2430.00	Slowed down to 3bpm 230bbbls away, final circulating pressure-1810psi. Bump pressure-2340psi.
Event	23	Check Floats	Check Floats	3/7/2017	11:03:06	USER				Released pressure and got 3bbls fresh water back.
Event	24	End Job	End Job	3/7/2017	11:10:27	COM1				No spacer to surface.
Event	25	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	3/7/2017	11:15:00	USER				All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/7/2017	13:00:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	3/7/2017	13:30:00	USER				Pre journey managment prior to departure.