

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3697163		Quote #:		Sales Order #: 0903233632					
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: DAVE NIELSON							
Well Name: WELLS RANCH			Well #: AA22-617			API/UWI #: 05-123-42266-00					
Field: WATTENBERG		City (SAP): GILL		County/Parish: WELD			State: COLORADO				
Legal Description: SW SW-22-6N-63W-970FSL-79FWL											
Contractor: H & P DRLG					Rig/Platform Name/Num: H & P 321						
Job BOM: 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB61755					Srvc Supervisor: Christopher Pickell						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type		BHST									
Job depth MD		1921ft			Job Depth TVD						
Water Depth		Wk Hit 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			0	1910.8	0	0	
Open Hole Section			13.5				0	1921	0	0	
Tools and Accessories:											
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make			
Guide Shoe	9.625				Top Plug	9.625	1	HES			
Float Shoe	9.625	1	HES	1910.8	Bottom Plug	9.625					
Float Collar	9.625	1	HES	1865.5	SSR plug set	9.625					
Insert Float	9.625				Plug Container	9.625	1	HES			
Stage Tool	9.625				Centralizers	9.625					
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	Fresh Water W/ Red Dye	Fresh Water W/ Red Dye	50	bbl	8.33			5			
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	SwiftCem	SWIFTCEM (TM) SYSTEM	550	sack	13.5	1.74	9.2	8			

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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	
3	SwiftCam	SWIFTCEM (TM) SYSTEM	75	sack	14.2	1.53	7.65	4		
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	
4	Oil Based Mud Displacement	Oil Based Mud Displacement	144.2	bbl	10			8-3		
Cement Left In Pipe		Amount	45.31 ft		Reason			Shoe Joint		
Comment All cement scaled within range. Returned 35 bbl of cement back to surface.										

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Downhole Density <i>(ppg)</i>	Combined Pump Rate <i>(bbl/min)</i>	Pass-Side Pump Pressure <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	4/7/2016	00:01:00	USER				Crew called out at 00:00 to be on location at 06:00. Crew was Chris Pickell, Nick Roles, Richard Wendling, Justin Cruz
Event	2	Safety Meeting - Service Center or other Site	Safety Meeting - Service Center or other Site	4/7/2016	04:00:00	USER				Safety meeting held for journey. Left the yard for H&P 321.
Event	3	Arrive At Loc	Arrive At Location	4/7/2016	05:00:00	USER				Arrive on location 1 hour early. Rig had just begun running casing.
Event	4	Other	Well Data	4/7/2016	05:10:00	USER				TD 1921' 13.5" OH. TP 1910.8' 9 5/8" 36#. FC 1865.5'. WF WBM 8.8 PPG.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	4/7/2016	05:15:00	USER				Safety meeting held for rig up. Hazard hunt performed. Spotted in trucks and rigged up all equipment.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/7/2016	09:34:51	USER				Safety meeting held with rig crew to discuss job safety and procedure
Event	7	Start Job	Start Job	4/7/2016	09:45:02	COM6	8.44	0.00	15.00	
Event	8	Test Lines	Test Lines	4/7/2016	09:46:29	COM6	8.45	0.00	25.00	Pressure test lines to 3000 psi. Checked for visible leaks and pressure loss
Event	9	Pump Spacer 1	Pump Spacer 1	4/7/2016	09:50:47	COM6	8.45	0.00	-4.00	Pump 50 bbl of water spacer. 2 pounds of red dye was added into the bbl 10-20 for a marker
Event	10	Shutdown	Shutdown	4/7/2016	10:01:26	USER	8.32	0.00	81.00	Shutdown to mix up and scale first tub of cement
Event	11	Pump Lead Cement	Pump Lead Cement	4/7/2016	10:03:18	COM6	8.33	0.00	18.00	Pump 550 sks 170.4 bbl of SwiftCem cement 13.5 ppg 1.74 yield 9.2 gal/sk
Event	12	Check Weight	Check weight	4/7/2016	10:03:48	COM6	12.09	4.40	68.00	Cement scaled 13.5 ppg
Event	13	Check Weight	Check weight	4/7/2016	10:06:01	COM6	13.78	7.10	283.00	Cement scaled 13.5 ppg
Event	14	Check Weight	Check weight	4/7/2016	10:15:58	COM6	13.50	8.00	323.00	Cement scaled 13.5 ppg

Event	15	Check Weight	Check weight	4/7/2016	10:24:50	COM6	13.35	7.40	312.00	Cement scaled 13.5 ppg
Event	16	Pump Tail Cement	Pump Tail Cement	4/7/2016	10:27:15	COM6	14.05	6.90	365.00	Pump 75 sks 20.4 bbl of SwiftCem cement 14.2 ppg 1.53 yield 7.65 gal/sk
Event	17	Shutdown	Shutdown	4/7/2016	10:33:09	USER	14.24	0.30	62.00	Line blown down from rig floor to wash up tank to clear out any cement in it.
Event	18	Clean Lines	Clean Lines	4/7/2016	10:36:04	USER	4.55	1.40	-23.00	Wash pumps and lines to the wash up tank
Event	19	Drop Top Plug	Drop Top Plug	4/7/2016	10:44:10	COM6	8.03	0.00	-49.00	Plug preloaded. Witnessed by company man.
Event	20	Pump Displacement	Pump Displacement	4/7/2016	10:44:23	COM6	8.09	2.10	-40.00	Pump displacement using 10 ppg OBM
Event	21	Other	Spill	4/7/2016	10:45:09	USER	9.72	7.90	296.00	While filling first tub of OBM operator over filled displacement tank. Spilling 2 gallons of OBM into containment. Spill was reported to company man and safety man. Spill was cleaned up
Event	22	Cement Returns to Surface	Cement Returns to Surface	4/7/2016	11:00:27	USER	9.86	6.00	574.00	Cement returns to surface with 109 bbl away.
Event	23	Bump Plug	Bump Plug	4/7/2016	11:07:50	COM6	9.87	0.00	1000.00	Plug landed on calculated 144.2 bbl with 525 psi shutting down with 1000 psi
Event	24	Other	Casing Test	4/7/2016	11:08:04	COM6	9.86	0.00	1024.00	1000 psi 15 minute casing test
Event	25	Other	Check Floats	4/7/2016	11:24:09	COM6	9.79	0.00	-3.00	Pressure was held for 15 minutes then released, losing 13 psi. Floats held. 1/2 bbl back to tanks
Event	26	End Job	End Job	4/7/2016	11:24:13	COM6				35 bbl of cement to surface. Top of cement is 0 ft. All lines were blown down at end of job to ensure no spills once broken apart.
Event	27	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	4/7/2016	11:25:08	USER				Safety meeting held for rig down. Washed pumps and lines into the cellar. Rigged down all equipment.
Event	28	Safety Meeting - Departing Location	Safety Meeting - Departing Location	4/7/2016	13:00:00	USER				Safety meeting held for journey. Left location for the yard