

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3726877		Quote #:		Sales Order #: 0903301825				
Customer: NOBLE ENERGY INC - EBUS				Customer Rep: LANCE PORTER						
Well Name: SHADOW		Well #: A26-646		API/UWI #: 05-123-42882-00						
Field: WATTENBERG		City (SAP): GILL		County/Parish: WELD		State: COLORADO				
Legal Description: NW SE-30-6N-63W-2257FSL-1728FEL										
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 321						
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA/HB61755					Srcv Supervisor: Joseph Fantasia					
Job										
Formation Name										
Formation Depth (MD)		Top			Bottom					
Form Type					BHST		230 degF			
Job depth MD		17647ft			Job Depth TVD		6715			
Water Depth					Wk Ht Above Floor		5			
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	1916	0	1916
Casing		5.5	4.778	20			0	17647	0	0
Open Hole Section			8.5				1916	17659	1916	6715
Tools and Accessories										
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	11 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11	4.72		4		
118.19 lbm/bbl		BARITE, BULK (100003681)								
0.40 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
0.40 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
35.80 gal/bbl		FRESH WATER								
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	
2	11 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11	36.6		5		
118.19 lbm/bbl		BARITE, BULK (100003681)								
36.60 gal/bbl		FRESH WATER								

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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	ExpandaCem w/o SCBL	EXPANDACEM (TM) SYSTEM	150	sack	13.2	1.6		5	7.68
7.68 Gal		FRESH WATER							
0.50 %		SCR-100 (100003749)							
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	ExpandaCem	EXPANDACEM (TM) SYSTEM	615	sack	13.2	1.605		8	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/mi n	Total Mix Fluid Gal
5	EconoCem	ECONOCEM (TM) SYSTEM	1539	sack	13.5	1.679		8	8
8 Gal		FRESH WATER							
0.40 %		HR-5, 50 LB SK (100005050)							
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
6	Displacement	Displacement	390	bbl	8.33			10	
Cement Left In Pipe	Amount	Reason							
Comment APPROX 17 BBLS SPACER TO SURFACE. APPROX TOP OF CEMENT AT 1315 FT.									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Combined Pump Rate (bbl/min)	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Comments
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	5/18/2016	09:00:00	USER				CALL OUT @ 0330. REQUESTED ON LOCATION @ 1000. ARRIVE ON LOCATION 0900. HELD SITE ASSESSMENT AND PRE RIG UP SAFETY MEETING PRIOR TO RIGGING UP EQUIPMENT.
Event	2	Other	Other	5/18/2016	09:30:00	USER				WATER TEST - TEMP 60 DEGREES F PH 7 CHLORIDES 0
Event	3	Start Job	Start Job	5/18/2016	13:49:37	COM6				HELD PRE JOB SAFETY MEETING WITH ALL PRESENT PERSONNEL PRIOR TO STARTING JOB.
Event	4	Test Lines	Test Lines	5/18/2016	14:05:31	COM6	0.00	8.51	3477.00	PRESSURE TEST LINES INCLUDING KELLY HOSE ON RIG TO 3500 PSI. PER CUSTOMER REQUEST.
Event	5	Drop Bottom Plug	Drop Bottom Plug	5/18/2016	14:07:17	USER				BOTTOM PLUG DROPPED INTO CASING PRIOR TO PUMPING SPACER.
Event	6	Pump Spacer 1	Pump Spacer 1	5/18/2016	14:09:47	COM6	2.30	11.07	56.00	PUMP 40 BBLS TUNED SPACER MIXED AT 11 PPG. DENSITY VERIFIED BY SCALE. 16 GALLONS MUSOLA A AND 16 GALLONS DUAL SPACER B ADDED TO SPACER. 5 GALLONS DAIR ADDED TO CONTROL AIR ENTRAINMENT
Event	7	Pump Spacer 2	Pump Spacer 2	5/18/2016	14:21:38	USER	0.00	11.08	36.00	PUMP 40 BBLS TUNED SPACER MIXED AT 11 PPG. DENSITY VERIFIED BY SCALE. NO SURFACTANT ADDED.
Event	8	Drop Bottom Plug	Drop Bottom Plug	5/18/2016	14:34:44	USER				BOTTOM PLUG DROPPED INTO CASING AFTER SPACER.
Event	9	Pump Lead Cement	Pump Lead Cement	5/18/2016	14:37:05	COM6	2.40	13.25	111.00	PUMP 217 BBLS (765 SKS) EXPANDACEM MIXED AT 13.2 PPG. DENSITY VERIFIED BY SCALE. FIRST 150 SACKS WITH NO SUPER CBL.
Event	10	Pump Tail Cement	Pump Tail Cement	5/18/2016	15:10:40	COM6	5.70	13.42	338.00	PUMP 457 BBLS (1539 SKS) ECONOCEM MIXED AT 13.5 PPG. DENSITY VERIFIED BY SCALE.
Event	11	Shutdown	Shutdown	5/18/2016	16:13:07	COM6				
Event	12	Clean Lines	Clean Lines	5/18/2016	16:18:49	COM6				BLOW DOWN KELLY HOSE AND LINES TO PIT. WASH UP PUMPS TO PIT.

Event	13	Drop Top Plug	Drop Top Plug	5/18/2016	16:20:48	COM6				TOP PLUG LOADED DURING SHUTDOWN.
Event	14	Pump Displacement	Pump Displacement	5/18/2016	16:21:59	COM6	0.00	8.22	502.00	DISPLACE USING 390 BBLS WATER. 10 GALLONS MMCR ADDED TO FIRST 20 BBLS. GOOD RETURNS THROUGHOUT. RUBBER PEICES WERE OBSERVED AT RETURNS AT APPROX 353 BBLS INTO DISPLACEMENT AND WENT AWAY AT AROUND 370 BBLS AWAY. APPROX 17 BBLS SPACER TO SURFACE. APPROX TOP OF CEMENT AT 1315 FT. RETURNS DID NOT CHANGE COLOR OR CONSISTANCY SPACER WAS CALLED USING A PORTABLE WETTABILITY METER.
Event	15	Bump Plug	Bump Plug	5/18/2016	17:08:34	COM6	6.70	8.31	2386.00	PLUG LANDED AT 2400 PSI. PRESSURE BROUGHT TO 3100 PSI AND HELD 5 MIN.
Event	16	Check Floats	Check Floats	5/18/2016	17:15:49	USER	0.00	8.34	3123.00	FLOATS HELD 5 1/2 BBLS BACK TO TRUCK
Event	17	End Job	End Job	5/18/2016	17:20:32	COM6				HELD PRE RIG DOWN SAFETY MEETING WITH CREW PRIOR TO RIGGING DOWN EQUIPMENT.
Event	18	Depart Location	Depart Location	5/18/2016	17:28:07	USER				JOURNEY MGMNT PRIOR TO LEAVING LOCATION.