

## The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3919081		Quote #:		Sales Order #: 0905612302					
Customer: NOBLE ENERGY INC-EBUS				Customer Rep:							
Well Name: VOGLER STATE			Well #: D21-731		API/UWI #: 05-123-48564-00						
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO					
Legal Description: SW SE-21-3N-64W-930FSL-2444FEL											
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: Nicholas Roles							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		17788ft		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	1962	0	1962	
Casing		5.5	4.892	17			0	17788	0	6844	
Open Hole Section			8.5				1962	17810	1962	6844	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			17788		Top Plug	5.5	1	HES		
Float Shoe	5.5					Bottom Plug	5.5	2	HES		
Float Collar	5.5			17743.7		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			120	bbl	11.5	3.77		6	
34.90 gal/bbl		FRESH WATER									
0.60 gal/bbl		MUSOL(R) A, 5 GAL PAIL (100064220)									

148.77 lbm/bbl		BARITE, BULK (100003681)							
0.60 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							
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	1.68		8	8.04
8.04 Gal		FRESH WATER							
0.95 %		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
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	405	sack	13.2	1.68		8	8.06
0.45 %		SCR-100 (100003749)							
8.06 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
4	NeoCem NT1	NeoCem TM	1274	sack	13.2	2.04		8	9.75
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	Displacement	393.5	bbl	8.33				
Cement Left In Pipe		Amount	44.3 ft		Reason			Shoe Joint	
Mix Water:	pH 07	Mix Water Chloride:	0 ppm			Mix Water Temperature:	65°F °C		
Cement Temperature:	## °F °C	Plug Displaced by:	8.33 lb/gal			Disp. Temperature:	65 °F °C		
Plug Bumped?	Yes	Bump Pressure:	2400 psi MPa			Floats Held?	Yes		
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3			Returns Temperature:	## °F °C		
Comment Got 4bbls spacer to surface. Estimated TOCap-2444', TOL-3474', TOT-6440'									

## 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	Check Floats	Call Out	4/8/2019	02:30:00	USER				Called out by Service Coordinator for O/L at 0830
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/8/2019	05:45:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	4/8/2019	06:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	4/8/2019	07:30:00	USER				Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/8/2019	09:30:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	4/8/2019	10:00:00	USER				Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/8/2019	12:00:00	USER	0.00	8.25	123.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	4/8/2019	12:38:09	COM4	0.00	8.25	125.00	TD-17810', TP-17788' 5.5" 20#, FC-17743.7', TVD-6844', SURF-1962.7' 9.625" 36#, OH-8.5" MUD-9.8#

Event	9	Drop Bottom Plug	Drop Bottom Plug	4/8/2019	12:38:15	COM4	0.00	8.24	125.00	Dropped by HES supervisor, witnessed by company man.
Event	10	Test Lines	Test Lines	4/8/2019	12:41:15	COM4	0.00	8.15	286.00	Pumped 5bbls fresh water to fill lines, closed 2" lo torc, performed 500psi k/o function test, followed with 5th gear stall at 1290psi, perform 4500psi test on line. Held pressure, no leaks. Bled off pressure, pumped 1bbl to ensure lines still full and closed valve. Proceeded to bring pressure to 3000psi on Kelly line, pressure stabilized and held with no leaks.
Event	11	Pump Spacer 1	Pump Spacer 1	4/8/2019	12:52:24	COM4	0.00	8.21	130.00	Pumped 120bbls Tuned Spacer III 11.5# 3.78y 23.5g/s with 70g Musol A, 70g Dual Spacer B and 10g D-Air at 6bpm 340psi.
Event	12	Drop Bottom Plug	Drop Bottom Plug	4/8/2019	13:17:41	COM4	0.00	11.56	168.00	Dropped by HES supervisor, witnessed by company man.
Event	13	Pump Lead Cement	Pump Lead Cement	4/8/2019	13:17:46	COM4	0.00	11.56	168.00	Pumped 140sks or 41.9bbls Elasticem w/o CBL 13.2# 1.68y 8.04g/s at 8bpm 330psi.
Event	14	Check Weight	Check Weight	4/8/2019	13:21:30	COM4	5.00	13.37	433.00	Weight verified with pressurized mud scales.
Event	15	Pump Cement	Pump Cement	4/8/2019	13:28:12	COM4	4.20	13.21	406.00	Pumped 405sks or 121bbls Elasticem w/CBL 13.2# 1.68y 8.06g/s at 8bpm 550psi.
Event	16	Check Weight	Check Weight	4/8/2019	13:38:20	COM4	8.10	13.21	681.00	Weight verified with pressurized mud scales.

Event	17	Pump Tail Cement	Pump Tail Cement	4/8/2019	13:50:04	COM4	8.10	13.06	656.00	Pumped 1274sks or 463bbbls 13.2# 2.04y 9.75g/s Neocem at 8bpm 900psi.
Event	18	Check Weight	Check Weight	4/8/2019	14:01:42	COM4	6.40	13.12	669.00	Weight verified with pressurized mud scales.
Event	19	Check Weight	Check Weight	4/8/2019	14:31:59	COM4	8.10	13.30	880.00	Weight verified with pressurized mud scales.
Event	20	Shutdown	Shutdown	4/8/2019	15:06:21	COM4	0.00	0.31	135.00	Shutdown, rig blew air through lines to pits, followed with 5bbbls fresh water through pumps and lines.
Event	21	Drop Top Plug	Drop Top Plug	4/8/2019	15:06:26	COM4	0.00	0.00	132.00	Dropped by HES supervisor, witnessed by company man.
Event	22	Pump Displacement	Pump Displacement	4/8/2019	15:06:43	COM4	0.00	-0.01	127.00	Pumped 394bbbls fresh water with 10g MMCR in first 20bbbls, 20g Algicide throughout.
Event	23	Bump Plug	Bump Plug	4/8/2019	15:54:08	COM4				Slowed down to 3bpm at 370bbbls away, final circulating pressure- 2050psi, Bump pressure- 2400psi.
Event	24	Check Floats	Check Floats	4/8/2019	15:56:35	USER	0.00	8.22	1462.00	Released pressure and got 4.5 bbls fresh water to truck, floats held.
Event	25	End Job	End Job	4/8/2019	16:00:53	COM4	0.00	8.22	120.00	Got 4bbbls spacer to surface. Estimated TOCap-2444', TOL-3474', TOT-6440'
Event	26	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/8/2019	16:10:00	USER	0.00	8.23	132.00	Discussed rigging down hazards and procedure according to HMS with all HES personnel
Event	27	Safety Meeting - Departing Location	Safety Meeting - Departing Location	4/8/2019	17:15:00	USER				Held meeting with all personnel in convoy to

discuss directions and hazards associated with drive, all fit to drive.

Event	28	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	4/8/2019	17:30:00	USER	Pre journey management prior to departure.
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## 3.0 Job Chart

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