

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 345242		<b>Ship To #:</b> 3919050		<b>Quote #:</b>		<b>Sales Order #:</b> 0905599588	
<b>Customer:</b> NOBLE ENERGY INC-EBUS				<b>Customer Rep:</b> Chris Ewing			
<b>Well Name:</b> VOGLER STATE			<b>Well #:</b> D21-740		<b>API/UWI #:</b> 05-123-48573-00		
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> KEENESBURG		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO	
<b>Legal Description:</b> SW SE-21-3N-64W-930FSL-2482FEL							
<b>Contractor:</b> H & P DRLG				<b>Rig/Platform Name/Num:</b> H & P 517			
<b>Job BOM:</b> 7523 7523							
<b>Well Type:</b> HORIZONTAL OIL							
<b>Sales Person:</b> HALAMERICA\HB70026				<b>Srv Supervisor:</b> Nicholas Roles			

**Job**

<b>Formation Name</b>			
<b>Formation Depth (MD)</b>	<b>Top</b>		<b>Bottom</b>
<b>Form Type</b>			<b>BHST</b>
<b>Job depth MD</b>	17746ft		<b>Job Depth TVD</b>
<b>Water Depth</b>			<b>Wk Ht Above Floor</b>
<b>Perforation Depth (MD)</b>	<b>From</b>		<b>To</b>

**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	1931	0	1931
Casing		5.5	4.892	17			0	17746	0	6919
Open Hole Section			8.5				1931	17755	1931	6919

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			17746	Top Plug	5.5	1	HES
Float Shoe	5.5				Bottom Plug	5.5	2	HES
Float Collar	5.5			17700	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 ft <sup>3</sup> /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		8	

34.70 gal/bbl	<b>FRESH WATER</b>
0.60 gal/bbl	<b>MUSOL(R) A, 5 GAL PAIL (100064220)</b>
148.77 lbm/bbl	<b>BARITE, BULK (100003681)</b>
0.60 gal/bbl	<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>

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		6	8.04

8.04 Gal	<b>FRESH WATER</b>
0.95 %	<b>SCR-100 (100003749)</b>

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	444	sack	13.2	1.68		8	8.06

0.45 %	<b>SCR-100 (100003749)</b>
8.04 Gal	<b>FRESH WATER</b>

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	1236	sack	13.2	2.04		8	9.75

9.75 Gal	<b>FRESH WATER</b>
0.08 %	<b>SCR-100 (100003749)</b>

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	bbl	8.33			10	

<b>Cement Left In Pipe</b>	<b>Amount</b>	46 ft	<b>Reason</b>	<b>Shoe Joint</b>	
Mix Water:	pH 06	Mix Water Chloride:	0 ppm	Mix Water Temperature:	60°F °C
Cement Temperature:	60 °F °C	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	60 °F °C
Plug Bumped?	Yes	Bump Pressure:	psi MPa	Floats Held?	Yes
Cement Returns:	0 bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature:	## °F °C

**Comment** Got 10bbls interface to surface. Estimated TOCap-2477', TOL-3506', TOT-6766'

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Check Floats	Call Out	4/3/2019	12:00:00	USER	Called out by Service Coordinator for O/L at 1800
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/3/2019	15:45:00	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	4/3/2019	16:00:00	USER	Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	4/3/2019	17:00:00	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	4/3/2019	17:15:00	USER	Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	4/3/2019	17:45:00	USER	Water test- PH-6, Chlor-0, Temp-60. Cement temp-60.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/3/2019	19:30:00	USER	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	4/3/2019	19:50:11	COM4	Mixed up Spacer

Event	9	Start Job	Start Job	4/3/2019	20:12:57	COM4	TD-17755', TP-17746' 5.5" 20#, FC-17700', TVD-6919', SURF-1931' 9.625" 36#, OH-8.5" MUD-9.9#
Event	10	Test Lines	Test Lines	4/3/2019	20:24:47	COM4	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	4/3/2019	20:25:10	COM4	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 8bpm 340psi.
Event	12	Check Weight	Check Weight	4/3/2019	20:30:01	COM4	Weight verified with pressurized mud scales.
Event	13	Check Weight	Check Weight	4/3/2019	20:41:42	USER	Weight verified with pressurized mud scales.
Event	14	Drop Bottom Plug	Drop Bottom Plug	4/3/2019	20:47:06	COM4	Dropped by HES supervisor, witnessed by company man.
Event	15	Check Weight	Check Weight	4/3/2019	20:49:25	COM4	Weight verified with pressurized mud scales.
Event	16	Pump Lead Cement	Pump Lead Cement	4/3/2019	20:50:05	COM4	Pumped 140sks or 41.9bbls Elasticem w/o CBL 13.2# 1.68y 8.04g/s at 6bpm 330psi.

Event	17	Check Weight	Check Weight	4/3/2019	20:55:32	COM4	Weight verified with pressurized mud scales.
Event	18	Pump Cement	Pump Cement	4/3/2019	21:00:15	COM4	Pumped 444sks or 133bbbls Elasticem w/CBL 13.2# 1.68y 8.06g/s at 8bpm 550psi.
Event	19	Check Weight	Check Weight	4/3/2019	21:04:34	COM4	Weight verified with pressurized mud scales.
Event	20	Pump Tail Cement	Pump Tail Cement	4/3/2019	21:19:19	COM4	Pumped 1236sks or 449bbbls 13.2# 2.04y 9.75g/s Neocem at 8bpm 940psi.
Event	21	Check Weight	Check Weight	4/3/2019	21:26:12	COM4	Weight verified with pressurized mud scales.
Event	22	Check Weight	Check Weight	4/3/2019	21:32:10	COM4	Weight verified with pressurized mud scales.
Event	23	Check Weight	Check Weight	4/3/2019	21:35:10	COM4	Weight verified with pressurized mud scales.
Event	24	Check Weight	Check Weight	4/3/2019	21:39:55	COM4	Weight verified with pressurized mud scales.
Event	25	Check Weight	Check Weight	4/3/2019	21:54:32	COM4	Weight verified with pressurized mud scales.
Event	26	Check Weight	Check Weight	4/3/2019	22:05:36	COM4	Weight verified with pressurized mud scales.
Event	27	Shutdown	Shutdown	4/3/2019	22:33:10	COM4	Shutdown, rig blew air through lines to pits, followed with 5bbbls fresh water through pumps and lines.
Event	28	Drop Top Plug	Drop Top Plug	4/3/2019	22:42:41	COM4	Dropped by HES supervisor, witnessed by company man.

Event	29	Pump Displacement	Pump Displacement	4/3/2019	22:42:52	COM4	Pumped 393bbls fresh water with 10g MMCR in first 20bbls, 20g Algicide throughout.
Event	30	Bump Plug	Bump Plug	4/3/2019	23:29:33	COM4	Slowed down to 3bpm at 370bbls away, final circulating pressure- 2186psi, Bump pressure-2750psi.
Event	31	Check Floats	Check Floats	4/3/2019	23:34:58	USER	Released pressure and got 5bbls fresh water to truck, floats held.
Event	32	End Job	End Job	4/3/2019	23:37:49	COM4	Got 10bbls interface to surface. Estimated TOCap-2477', TOL-3506', TOT-6766'
Event	33	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/3/2019	23:40:00	USER	Discussed rigging down hazards and procedure according to HMS with all HES personnel
Event	34	Safety Meeting - Departing Location	Safety Meeting - Departing Location	4/4/2019	01:15:00	USER	Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	35	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	4/4/2019	01:30:00	USER	Pre journey management prior to departure.

