

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 345242	<b>Ship To #:</b> 3919005	<b>Quote #:</b>	<b>Sales Order #:</b> 0905564679
<b>Customer:</b> NOBLE ENERGY INC-EBUS		<b>Customer Rep:</b> Drahota	
<b>Well Name:</b> VOGLER STATE		<b>Well #:</b> D21-750	<b>API/UWI #:</b> 05-123-48562-00
<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-2519FEL			
<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>Srvc Supervisor:</b> Prince Perez	

Job				
<b>Formation Depth (MD)</b>	<b>Top</b>	0'	<b>Bottom</b>	17,630'
<b>Job depth MD</b>	17,618'		<b>Job Depth TVD</b>	6,843'
<b>Water Depth</b>			<b>Wk Ht Above Floor</b>	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	1929	0	1929
Casing		5.5	4.778	20			0	17618	0	6843
Open Hole Section			8.5				1950	17614	1929	6843

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make	
Guide Shoe	5.5	1		17,618	Top Plug	5.5	1	HES	
Float Shoe	5.5				Bottom Plug	5.5	2	HES	
Float Collar	5.5	1		17,571	SSR plug set	5.5			
Insert Float	5.5				Plug Container	5.5			
Stage Tool	5.5				Centralizers	5.5	204	SMT	

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	Spacer	Tuned Spacer III	120	bbl	11.5	3.77	23.5	4	4,182
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	Cap	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.68	8.04	6	1,126
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	Lead	ELASTICEM (TM) SYSTEM	428	sack	13.2	1.68	8.04	8	3,441
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	Lead	NeoCem TM	448.7	bbl	13.2	2.04	9.75	8	12,041
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	390.1	bbl	8.33				
Cement Left In Pipe	Amount	Reason			Shoe Joint				
Mix Water:	pH 8	Mix Water Chloride:	<300 ppm	Mix Water Temperature:	69 °F				
Cement Temperature:	## °F	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	69 °F				
Plug Bumped?	Yes	Bump Pressure:	1,847 psi	Floats Held?	Yes				
Cement Returns:	0 bbl	Returns Density:	## lb/gal	Returns Temperature:	## °F				
<b>Comment</b>									
Pumped 120 bbls of Tuned Spacer III with 70 gallons of Musol A, 70 gallons of Dual B, and 20 gallons of D-Air.									
Pumped 41.89 bbls of Elasticem.									
Pumped 128.06 of Elasticem with SCBL.									
Pumped 448.71 bbls of Neocem.									
Pumped 390.1 bbls of freshwater displacement with MMCR in the first 20 bbls and Aldacide throughout.									
4.5 bbls back on the floats.									
12 bbls of spacer back									

## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	3/29/2019	08:30:00	USER					CREW CALLED OUT AT 08:30, REQUESTED ON LOCATION 14:00. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660, 11633846, 11764054, 10867096, AND PUMP 11189145.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/29/2019	12:20:00	USER					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Shop	Crew Leave Shop	3/29/2019	12:30:00	USER					STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	3/29/2019	13:30:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9/58" 36 LB/FT @ 1,929', 5.5" CASING: 20 LB/FT TOTAL 17,618', 8 1/2" HOLE, TD 17,630', 47' SHOE TRAC, TVD- 6,843'. PUMP FRESH WATER DISPLACEMENT. CASING LANDED @ 17:00 03/29/2019.

Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	3/29/2019	13:40:00	USER		HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	3/29/2019	13:50:00	USER		RIG UP BULK AND MIXING EQUIPMENT.
Event	7	Rig-Up Completed	Rig-Up Completed	3/29/2019	18:20:00	USER		
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/29/2019	18:30:00	USER		MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	3/29/2019	18:52:57	COM4		BEGIN RECORDING JOB DATA.
Event	10	Drop Bottom Plug	Drop Bottom Plug	3/29/2019	18:53:07	COM4		PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	11	Test Lines	Test Lines	3/29/2019	18:59:02	COM4	4816.00	PRESSURE TESTED IRON TO 4,700 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 875 PSI, 5TH GEAR STALL OUT @ 2,000 PSI. 4,700 PRESSURE TEST KICKED OUT @ 4,550 PSI
Event	12	Test Lines	Test Lines	3/29/2019	19:04:49	COM4	2414.00	TESTED IBOP TO 2,300 PSI, KICKED OUT @ 2,400 PSI. HELD FOR 2 MINUTES.

Event	13	Pump Spacer 1	Pump Spacer 1	3/29/2019	19:08:02	COM4	11.5	5.5	460	120	<p>PUMP 120 BBLS OF TUNED SPACER III @ 11.5 LB/GAL, 3.77 CUFT/SK, 23.5 GALL/SK. 20 GALS D-AIR, 70 GALLONS OF DUAL B, 70 GALLONS OF MUSOL A. HOS CALCULATED @ 2,480.3' WITH 5.11 BBLS CALCULATED TO SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 5.5 BBLS/MIN @ 460PSI.</p>
Event	14	Drop Bottom Plug	Drop Bottom Plug	3/29/2019	19:34:04	USER					<p>PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.</p>
Event	15	Pump Cap Cement	Pump Cap Cement	3/29/2019	19:37:46	COM4	13.2	6	620	41.89	<p>PUMPED 140 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.68 FT3/SK, 8.04 GAL/SK. 41.89 BBLS. HOC CALCULATED @ 1,026.7'. TOC CALCULATED @ 2,480.3'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBLS/MIN @ 620 PSI</p>
Event	16	Pump Lead Cement	Pump Lead Cement	3/29/2019	19:46:19	COM4	13.2	8	680	128.06	<p>PUMPED 428 SKS OF ELASTICEM W/SCBL @ 13.2 LB/GAL, 1.68 FT3/SK, 8.04 GAL/SK. 128.06 BBLS. HOL CALCULATED @ 3,138.7'; TOL CALCULATED @ 3,507'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 680 PSI</p>

Event	17	Pump Tail Cement	Pump Tail Cement	3/29/2019	20:03:38	COM4	13.2	8	1064.00	448.71	PUMP 1,235 SKS OF NEOCEM @ 13.2 LB/GAL, 2.04 FT3/SK, 9.75 GAL/SK, 448.71 BBLS. HOT CALCULATED @ 10,972.3', TOT CALCULATED @ 6,645.7'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 1,140 PSI.
Event	18	Shutdown	Shutdown	3/29/2019	21:16:14	COM4					SHUTDOWN TO WASH LINES.
Event	19	Drop Top Plug	Drop Top Plug	3/29/2019	21:29:42	COM4					PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	20	Pump Displacement	Pump Displacement	3/29/2019	21:34:36	COM4	8.33	9.5	2750	390.08	BEGIN CALCULATED DISPLACEMENT OF 390.08 BBLS WITH FRESH WATER. MMCR IN THE FIRST 20 AND ALDACIDE THROUGHOUT. PUMP RATE 9 BPM @ 2,750 PSI. CAUGHT CEMENT @ 40 BBLS INTO DISPLACEMENT. SPACER TO SURFACE @ 378 BBLS INTO DISPLACEMENT. 12 BBLS OF TUNED SPACER TO SURFACE. SLOW RATE TO 3 BPM @ 360 BBLS INTO DISPLACEMENT.
Event	21	Bump Plug	Bump Plug	3/29/2019	22:23:16	COM4			2347.00		PLUG BUMPED AT CALCULATED DISPLACEMENT. 1,847 PSI PRESSURED 500 PSI OVER BUMP. SHUTDOWN FOR 5 MINUTES.
Event	22	Check Floats	Check Floats	3/29/2019	22:32:04	USER					RELEASED PRESSURE, FLOATS HELD, 4.5 BBLS BACK.

Event	23	End Job	End Job	3/29/2019	22:34:19	COM4	STOP RECORDING JOB DATA.
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	3/29/2019	22:40:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	25	Rig-Down Equipment	Rig-Down Equipment	3/29/2019	22:50:00	USER	RIG DOWN BULK AND MIXING EQUIPMENT.
Event	26	Rig-Down Completed	Rig-Down Completed	3/30/2019	00:40:00	USER	
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	3/30/2019	00:50:00	USER	CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	28	Crew Leave Location	Crew Leave Location	3/30/2019	01:00:00	USER	THANK YOU FOR USING HALLIBURTON – PRINCE PEREZ AND CREW.

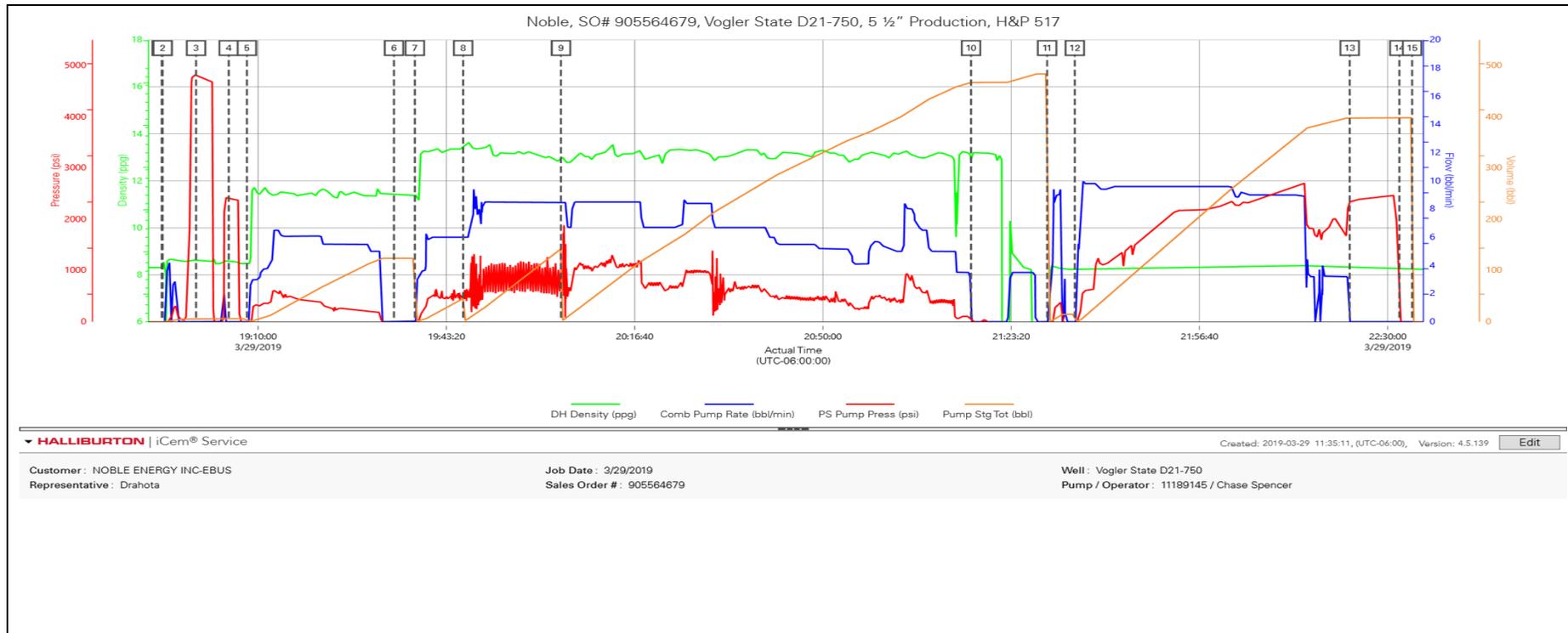
## 2.0 Attachments

### 2.1 Noble Vogler State D21-750-Custom Results.png

Description	Actual Time (UTC-06:00:00)	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)
1 Start Job	18:52:57	8.55	0.00	-79.00	0.00
2 Drop Bottom Plug	18:53:07	8.61	0.00	-80.00	0.00
3 Test Lines	18:59:02	8.63	0.00	4816.00	5.20
4 Test Lines	19:04:49	8.59	0.00	2414.00	6.00
5 Pump Spacer 1	19:08:02	8.47	0.00	-44.00	6.00
6 Drop Bottom Plug	19:34:04	11.43	0.00	-44.00	124.00
7 Pump Cap Cement	19:37:46	11.39	0.00	-43.00	0.00
8 Pump Lead Cement	19:46:19	13.53	6.00	446.00	0.10
9 Pump Tail Cement	20:03:38	12.99	8.50	1064.00	0.10
10 Shutdown	21:16:14	13.01	0.00	46.00	467.10
11 Drop Top Plug	21:29:42	-0.09	0.00	-84.00	483.60
12 Pump Displacement	21:34:36	8.23	0.00	-48.00	15.00
13 Bump Plug	22:23:16	8.36	0.00	2347.00	398.30
14 Check Floats	22:32:04	8.28	0.00	449.00	398.30
15 End Job	22:34:19	8.23	0.00	-79.00	0.00

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Created: 2019-03-29 11:35:11, (UTC-06:00), Version: 4.5.139 [Edit](#)

2.2 Noble Vogler State D21-750-Custom Results (1).png



## 2.3 Noble Vogler State D21-750-Custom Results (2).png

