

# HALLIBURTON

iCem<sup>®</sup> Service

## **NOBLE ENERGY INC - EBUS**

Date: Friday, October 19, 2018

### **Emmy State H25-744 Production**

Job Date: Sunday, October 07, 2018

Sincerely,

Adam McKay

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Emmy State H25-744** cement **Production** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton [Ft. Lupton]**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 345242		<b>Ship To #:</b> 3883736		<b>Quote #:</b>		<b>Sales Order #:</b> 0905181911					
<b>Customer:</b> NOBLE ENERGY INC-EBUS						<b>Customer Rep:</b> John Drahota					
<b>Well Name:</b> EMMY STATE				<b>Well #:</b> H25-744		<b>API/UWI #:</b> 05-123-46970-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> KEENESBURG		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> SW SE-25-3N-65W-285FSL-1805FEL											
<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> Kamereon White							
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>			<b>Bottom</b>						
<b>Form Type</b>				<b>BHST</b>	230 degF						
<b>Job depth MD</b>		17254ft		<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>						
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Casing		9.625	8.921	36			0	1945	0	1945	
Casing		5.5	4.778	20			0	17254	0	6945	
Open Hole Section			8.5				2500	6520	2500	6520	
Open Hole Section			8.5				6520	17254	6520	6942	
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
						<b>Top Plug</b>	5.5	1	HES		
<b>Float Shoe</b>	5.5	1	HES	17237		<b>Bottom Plug</b>	5.5	2	HES		
<b>Float Collar</b>	5.5	1	HES	17192							
<b>Fluid Data</b>											
<b>Stage/Plug #:</b> 1											
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>			<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III			120	bbl	11.5	3.78	23.5	8	

[illegible]

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	10/6/2018	12:00:00	USER				Crew called out and was requested on location @ 1800.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	10/6/2018	16:30:00	USER				Crew left the yard and supervisor called in a journey management.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	10/6/2018	17:00:00	USER				Crew arrived on location early and the rig was running casing. Supervisor called and closed out journey management.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	10/6/2018	17:05:00	USER				Assessed location and discussed spot in procedure. Supervir met with the customer and got well information.OH-8.5" TD-17,254',TP-17,237', SJ-45',FC17,192', Cas-5.5" 20 # P110 ,TVD-6945' PC-9.625" 36# Set @ 1945', Mud # -9.6 OBM.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	10/6/2018	17:10:00	USER				Discussed the JSA and rig up procedures.
Event	6	Rig-Up Equipment	Rig Up Equipment	10/6/2018	17:30:00	USER				Rig up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig Up Completed	10/6/2018	18:30:00	USER				All HES equipment and lines rigged up safely no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	10/7/2018	08:15:00	USER				Discussed the job procedures and psi with all personnell involved with the cement job.
Event	9	Drop Bottom Plug	Drop Bottom Plug	10/7/2018	08:48:25	COM4				Customer witnessed the plug being loaded.
Event	10	Check Weight	Check Weight	10/7/2018	08:50:15	COM4				Checked the weight of the spacer with the pressurized mud scales scaled @ 11.5 ppg.
Event	11	Other	Other	10/7/2018	08:54:06	COM4				Fill Lines with 3 bbl of water 3 bpm 350 psi.
Event	12	Test Lines	Test Lines	10/7/2018	08:57:20	COM4	3108.00	8.62	0.00	Tested the I Bop to 3000 psi and held for 2 min no leaks.
Event	13	Test Lines	Test Lines	10/7/2018	09:01:47	COM4	6545.00	8.66	0.00	Tested HES lines to 500 psi and 6500 psi no leaks.
Event	14	Pump Spacer 1	Pump Spacer 1	10/7/2018	09:06:35	COM4	338.00	11.25	2.70	Pumped 120 bbls of tuned spacer @ 11.5 ppg 3.78 yield 23.5 gal/sk (120 bbls) 8 bpm 650 psi.
Event	15	Shutdown	Shutdown	10/7/2018	09:31:15	COM4				Shutdown and bled the psi off to load the second bottom plug,

customer witnessed.

Event	16	Check Weight	Check Weight	10/7/2018	09:32:06	COM4				Checked the weight of the Cap Cement with the pressurized mud scales scaled @ 13.2 ppg.
Event	17	Drop Bottom Plug	Drop Bottom Plug	10/7/2018	09:32:53	COM4				Customer witnessed.
Event	18	Pump Lead Cement	Pump Lead Cement	10/7/2018	09:35:11	COM4	867.00	13.66	8.00	Pumped 42 bbls of cap cement @ 13.2 ppg, 1.68 yield 8.04 gal/sk (140 sks) 8 bpm 850 psi.
Event	19	Pump Lead Cement	Pump Lead Cement	10/7/2018	09:45:23	COM4	326.00	13.21	4.00	Pumped 123 bbls of Lead cement @ 13.2 ppg, 1.68 yield 8.06 gal/sk (409 sks) 8 bpm 775 psi.
Event	20	Check Weight	Check Weight	10/7/2018	09:59:13	COM4	720.00	13.17	8.10	Checked the weight of the Lead Cement with the pressurized mud scales scaled @ 13.2 ppg.
Event	21	Pump Tail Cement	Pump Tail Cement	10/7/2018	10:03:14	COM4	683.00	13.13	8.10	Pumped 440 bbls of Tail cement @ 13.2 ppg 2.04 yield, 9.75 gal/sk (1210 sks) 8 bpm 1030 psi.
Event	22	Check Weight	Check Weight	10/7/2018	10:04:03	COM4	856.00	13.17	8.10	Checked the weight of the Tail Cement with the pressurized mud scales scaled @ 13.2 ppg.
Event	23	Check Weight	Check Weight	10/7/2018	10:10:26	COM4	920.00	13.31	7.00	Checked the weight of the Tail Cement with the pressurized mud scales scaled @ 13.2 ppg.
Event	24	Shutdown	Shutdown	10/7/2018	11:06:40	COM4	45.00	11.72	0.00	Shutdown to wash up pumps and lines and to blow air back through to the wash up tank.
Event	25	Clean Lines	Clean Lines	10/7/2018	11:14:04	COM4				Cleaned the pumps and lines.
Event	26	Drop Top Plug	Drop Top Plug	10/7/2018	11:14:52	COM4				Customer witnessed the top plug being loaded.
Event	27	Pump Displacement	Pump Displacement	10/7/2018	11:24:47	COM4	387.00	8.32	8.00	Pumped 381 bbls of fresh water with the first 20 bbls with MMCR. the remainder of displacement with biocide, but the last 20 bbls fresh.
Event	28	Bump Plug	Bump Plug	10/7/2018	12:30:31	COM4	1861.00	8.39	2.90	Bumped the plug, the final circulating psi was 2100 psi and took 500 psi over to 2600 psi and shutdown the pump. Pressure held for 30 sec and than fell off during our casing test because the packing on the CRT was leaking.
Event	29	Other	Other	10/7/2018	12:36:51	COM4				Checked the floats and the floats held, we got 4 bbls back to the truck.
Event	30	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/7/2018	12:40:00	USER				Discussed the rig down procedures.



Event	31	End Job	End Job	10/7/2018	12:40:02	COM4	Cement Job Complete, we got 4 bbls of spacer back to surface during displacement.
Event	32	Rig Down Lines	Rig Down Lines	10/7/2018	12:50:00	USER	Rig down all HES equipment and lines.
Event	33	Rig-Down Completed	Rig-Down Completed	10/7/2018	13:50:00	USER	All HES equipment and lines rigged down safely.
Event	34	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	10/7/2018	14:00:00	USER	Kamereon White and Crew would like to thank you for your business and choosing Halliburton Cement, Please give us a call if you have any questions.

3.0 Attachments

3.1 Cement job with events.png

