HALLIBURTON

iCem® Service

NOBLE ENERGY INC-EBUS

Date: Monday, September 10, 2018

Emmy State H25-757 Production

Job Date: Thursday, August 09, 2018

Sincerely,

Adam McKay

Legal Notice

Disclaimer:

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Emmy State H25-757** 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

Sold To #: 345242	**Ship To #:** 3883631	**Quote #:**	**Sales Order #:** 0905050618
Customer: NOBLE ENERGY INC-EBUS		**Customer Rep:** Tommy Charvat	
Well Name: EMMY STATE	**Well #:** H25-757		**API/UWI #:** 05-123-46974-00
Field: WATTENBERG	**City (SAP):** KEENESBURG	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SE SW-25-3N-65W-285FSL-1253FWL			
Contractor: H & P DRLG	**Rig/Platform Name/Num:** H & P 517		
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB70026	**Srvc Supervisor:** Adam Covington		

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	230 degF
Job depth MD	17529ft		**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	1952	0	0
Casing		5.5	4.778	20			0	17529	0	0
Open Hole Section			8.5				2480	6671	0	0
Open Hole Section			8.5				6672	17529	0	7015

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	5.5			17529		**Top Plug**	5.5	1	HES
Float Shoe	5.5					**Bottom Plug**	5.5	2	HES
Float Collar	5.5					**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	3.78		4.5	

36.09 gal/bbl	**FRESH WATER**
0.60 gal/bbl	**MUSOL(R) A, 5 GAL PAIL (100064220)**
147.42 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
8.06 Gal		**FRESH WATER**							
0.90 %		**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	430	sack	13.2	1.68		8	8.06
0.45 %		**SCR-100 (100003749)**							
8.08 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	1222	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	387	bbl	8.33			9	

Cement Left In Pipe	**Amount**	47 ft	Reason		**Shoe Joint**
Mix Water:	pH ##	**Mix Water Chloride:**	## ppm	Mix Water Temperature:	**## °F °C**
Cement Temperature:	## °F °C	**Plug Displaced by:**	## lb/gal kg/m3 XXXX	Disp. Temperature:	**## °F °C**
Plug Bumped?	Yes/No	**Bump Pressure:**	#### psi MPa	Floats Held?	**Yes/No**
Cement Returns:	## bbl m3	**Returns Density:**	## lb/gal kg/m3	Returns Temperature:	**## °F °C**

Comment TD-8.5" 17544' TP-5.5" 17529' FC-17482 SC-9 5/8" 36# 1952'. ESTIMATED TOT 6,671', TOL2 3,510, TOL1 2,480'. 5 BBLS OF SPACER BACK TO SURFACE. WATER, 67 DEGREES, PH 7, SUL 0, CHLORIDES 0.

BUMPED PLUG. FCP- 1830 PSI BUMP-2350 PSI 500 PSI OVER HELD FOR 5 MINUTES.

2.0 Real-Time Job Summary

2.1 Job Event Log

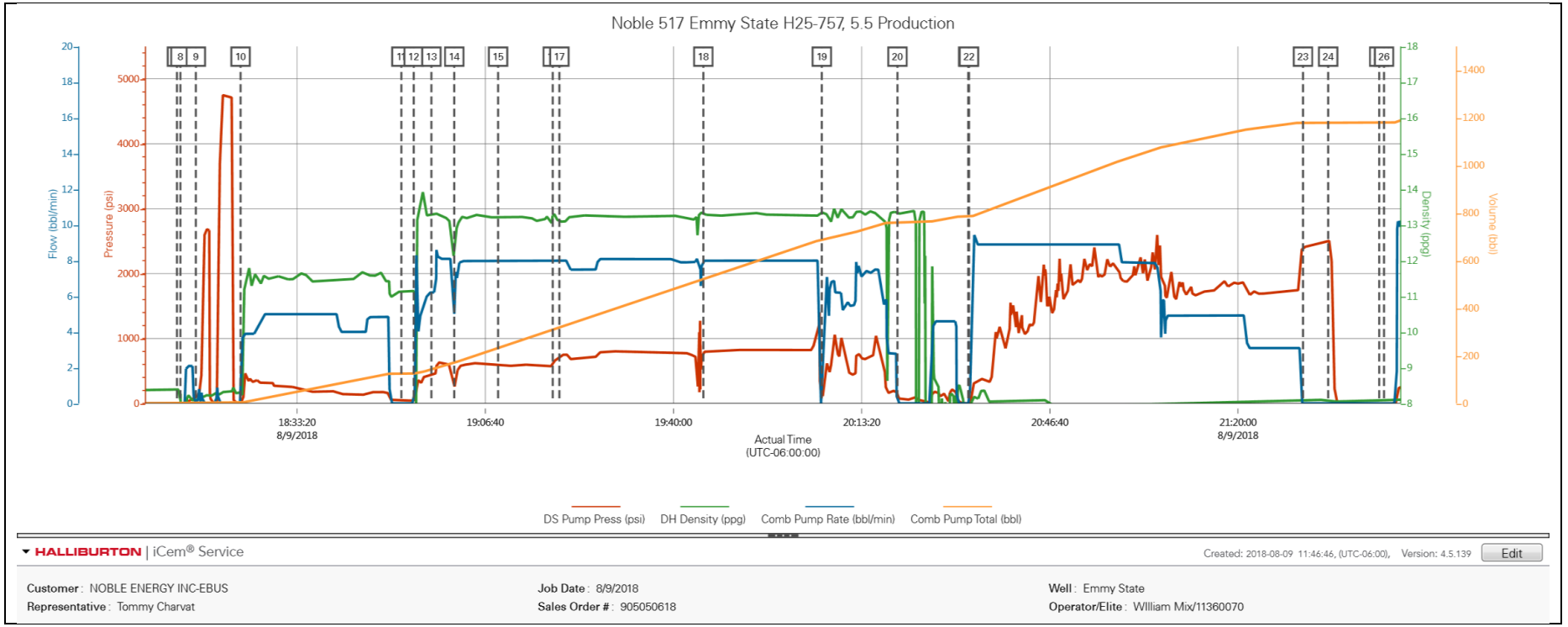
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	8/9/2018	05:30:00	USER				CALLED OUT BY SERVICE COORDINATOR FOR O/L AT 1030
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/9/2018	09:20:00	USER				HELD MEETING WITH ALL HES EMPLOYESS IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	3	Depart Shop for Location	Depart Shop for Location	8/9/2018	09:30:00	USER				HELD MEETING WITH ALL PERSONNEL IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	4	Arrive At Loc	Arrive At Loc	8/9/2018	10:10:00	USER				UPON ARRIVAL MET WITH COMPANY MAN TO DISCUSS JOB DETAILS AND CALCULATIONS, PERFORMED HAZARD HUNT AND SITE ASSESSMENT.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	8/9/2018	10:20:00	USER				DISCUSSED RIGGING UP HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/9/2018	17:30:00	USER				HELD SAFETY MEETING WITH ALL JOB ASSOCIATED PERSONNEL TO DISCUSS JOB PROCEDURE, HAZARDS AND STOP WORK AUTHORITY. Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Start Job	Start Job	8/9/2018	18:12:03	COM4				FILLED LINES WITH 3 BBLS OF FRESH WATER. 2 BPM, 85 PSI. FULL RETURNS.
Event	8	Drop Plug	Drop Bottom Plug	8/9/2018	18:12:40	USER				CO. MAN DROPPED 1ST HALLIBURTON 5.5" BOTTOM PLUG. ADAM COVINGTON WITNESSED.
Event	9	Test Lines	Test Lines	8/9/2018	18:15:24	COM4	2687.00	8.23		PRESSURE TESTED RIGS LINE TO 3,000 PSI. HELD TO MAKE SURE THERE WAS NO LEAKS. THEN PRESSURE TEST OUR IRON TO 5,000 PSI. AFTER PERFORMING A 500 PSI KICKOUT TEST AND A 5TH GEAR STALL. HELD FOR A COUPLE MINUTES. BLED BACK. NO LEAKS.
Event	10	Pump Spacer 1	Pump Spacer 1	8/9/2018	18:23:19	COM4	379.00	11.34	3.90	PUMPED 120 BBLS OF 11.5#, 3.78y, 23.5wr. TUNED SPACER III WITH 70 GALLONS OF MUSOL A, 70 GALLONS OF DUAL SPACER B AND 20 GALLONS OF D-AIR MIXED INTO A TOTE, USED A PUMP TO PUMP IT OUT OF TOTE INTO DOWN HOLE SIDE OF MIX TUB. 4 BPM, 320 PSI.

Event	11	Drop Bottom Plug	Drop Bottom Plug	8/9/2018	18:51:48	COM4				CO. MAN DROPPED 2ND HALLIBURTON 5.5" BOTTOM PLUG. ADAM COVINGTON WITNESSED.
Event	12	Pump Lead Cement	Pump Lead Cement	8/9/2018	18:53:59	COM4	433.00	13.26	6.20	PUMPED 41.8 BBLS (140 SKS) OF 13.2#, 1.68y, 8.04wr, ELASTICEM CAP CEMENT AT 8 BPM, 665 PSI. FULL RETURNS.
Event	13	Check Weight	Check Weight	8/9/2018	18:57:07	COM4	448.00	13.30	6.20	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	14	Pump Lead Cement	Pump Lead Cement	8/9/2018	19:01:10	COM4	254.00	12.17	5.00	PUMPED 128.6 BBLS (430 SKS) OF 13.2#, 1.68y, 8.06wr, ELASTICEM 2ND CEMENT. FULL RETURNS. 8 BPM 670 PSI.
Event	15	Check Weight	Check Weight	8/9/2018	19:08:56	COM4	591.00	13.21	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	16	Pump Tail Cement	Pump Tail Cement	8/9/2018	19:18:37	COM4	608.00	13.32	8.00	PUMPED 443.9 BBLS (1222 SKS) OF 13.2#, 2.04y, 9.75wr, NEOCEM TAIL CEMENT AT. FULL RETURNS. 8 BPM, 714 PSI.
Event	17	Check Weight	Check Weight	8/9/2018	19:19:47	COM4	718.00	13.11	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	18	Check Weight	Check Weight	8/9/2018	19:45:17	COM4	793.00	13.30	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	19	Shutdown	Shutdown	8/9/2018	20:06:16	USER				PRESSURE SPIKED TO 2000 PSI AND HIT KICKOUTS SO IT KICKOUT PUMPS.
Event	20	Shutdown	Shutdown	8/9/2018	20:19:40	COM4				SHUTDOWN TO WASH PUMPS AND LINES.
Event	21	Drop Top Plug	Drop Top Plug	8/9/2018	20:32:12	COM4				CO. MAN DROPPED HALLIBURTON 5.5" TOP PLUG. ADAM COVINGTON WITNESSED.
Event	22	Pump Displacement	Pump Displacement	8/9/2018	20:32:21	COM4	347.00	8.12	8.90	PUMPED 387 BBLS OF ALDECIDE WATER DISPLACEMENT, WITH THE FIRST 20 BBLS HAVING MMCR IN IT. THE REST HAVING THE ALDECIDE. 9 BPM 370 PSI. CAUGHT CEMENT AT 35 BBLS AWAY.
Event	23	Bump Plug	Bump Plug	8/9/2018	21:31:30	COM4	1748.00	8.06	3.10	BUMPED PLUG. FCP- 1830 PSI BUMP-2350 PSI 500 PSI OVER HELD FOR 5 MINUTES.
Event	24	Other	Other	8/9/2018	21:35:58	USER				CHECKED FLOATS. GOT 4.5 BBLS BACK TO THE TRUCK, INDICATING THAT THE FLOATS HELD.
Event	25	Safety Meeting - Pre Rig-Down	Pre-Rig Down Safety Meeting	8/9/2018	21:45:00	USER				DISCUSSED RIGGING DOWN HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	26	End Job	End Job	8/9/2018	21:45:51	COM4				TD-8.5" 17544' TP-5.5" 17529' FC-17482 SC-9 5/8" 36# 1952'.

							ESTIMATED TOT 6,671', TOL2 3,510, TOL1 2,480'. 5 BBLS OF SPACER BACK TO SURFACE. WATER, 67 DEGREES, PH 7, SUL 0, CHLORIDES 0.
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/9/2018	23:20:00	USER	HELD MEETING WITH ALL HES EMPLOYESS IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	28	Depart Location	Depart Location	8/9/2018	23:30:00	USER	PRE JOURNEY MANAGEMENT PRIOR TO DEPARTURE.

3.0 Attachments

3.1 Emmy State H25-757-Custom Results (1).png



3.2 Emmy State H25-757-Custom Results.png