

# HALLIBURTON

iCem<sup>®</sup> Service

## **NOBLE ENERGY INC-EBUS**

Date: Tuesday, July 31, 2018

### **Hurley H26-730 Production**

Job Date: Sunday, July 15, 2018

Sincerely,

Adam McKay

*The Road to Excellence Starts with Safety*

Sold To #: 345242		Ship To #: 3877172		Quote #:		Sales Order #: 0904989907	
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: John Drahota			
Well Name: HURLEY			Well #: H26-730		API/UWI #: 05-123-46763-00		
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO	
Legal Description: SE NE-26-3N-65W-2234FNL-1019FEL							
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	15870ft	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	1941	0	0
Casing		5.5	4.778	20			0	15870	0	0
Open Hole Section			8.5				2250	6964	0	0
Open Hole Section			8.5				6964	15870	0	0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			15870	Top Plug	5.5	1	
Float Shoe	5.5				Bottom Plug	5.5	2	
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		
36.09 gal/bbl		<b>FRESH WATER</b>								

0.60 gal/bbl	<b>MUSOL(R) A, 5 GAL PAIL (100064220)</b>
147.42 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		8	8.04
8.04 Gal		<b>FRESH WATER</b>							
0.90 %		<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	503	sack	13.2	1.68		8	8.06
0.45 %		<b>SCR-100 (100003749)</b>							
8.06 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	978	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	352	bbl	8.33			10	

Cement Left In Pipe	Amount	Reason	Shoe Joint
Mix Water:	pH 7	Mix Water Chloride: 0 ppm	Mix Water Temperature: 65 °F °C
Cement Temperature:	65 °F °C	Plug Displaced by: 8.33 lb/gal	Disp. Temperature: 65 °F °C
Plug Bumped?	Yes	Bump Pressure: 1920 psi	Floats Held? Yes
Cement Returns:	0 bbl m3	Returns Density: ## lb/gal	Returns Temperature: ## °F °C

**Comment**  
 TD-15884', 8.5" TP-15870' 5.5" 20# FC-15825' TVD-6974' PREVIOUS CASING-1941' 9 5/8" 36#. WATER 65 DEGREES, CHLORIDES-0, PH-7, SULFATES-0. 16 BBLS OF SPACER BACK TO SURFACE. ESTIMATED TOP OF TAIL CEMENT-(6,964'), ESTIMATED TOP OF 2ND LEAD -(3,276'), ESTIMATED TOP OF 1ST LEAD -(2,250'). 16 BBLS OF SPACER BACK.

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Comments
Event	1	Call Out	Call Out	7/14/2018	20:00:00	USER				CALLED OUT BY SERVICE COORDINATOR FOR O/L AT 0200
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/15/2018	00:00:00	USER				HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	3	Depart Shop for Location	Depart Shop for Location	7/15/2018	00:10:00	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	7/15/2018	01:40:00	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	7/15/2018	01:50:00	USER				DISCUSSED RIGGING UP HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/15/2018	05:12:00	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	7/15/2018	05:29:50	COM4				FILLED LINES WIT 3 BBLs OF FRESH WATER. 2 BPM, 100 PSI.
Event	8	Drop Bottom Plug	Drop Bottom Plug	7/15/2018	05:30:07	COM4				CO. MAN DROPPED THE FIRST BOTTOM PLUG. ADAM COVINGTON WITNESSED.
Event	9	Test Lines	Test Lines	7/15/2018	05:36:02	COM4	2982.00	8.22		PERFORMED A 500 PSI KICKOUT TEST, FOLLOWED BY A 5TH GEAR STALL. AFTER THOSE WE STARTED PRESSURING UP ON THE RIGS LINE, UP TO 3000 PSI. HELD FOR 30 SECONDS JUST TO MAKE SURE IT WAS HOLDING. BLED PRESSURE BACK TO THE TRUCK. THEN I CLOSED THE 2" VALVE ON THE FLOOR SO WE COULD PRESSURE UP ON OUR LINE. PRESSURED UP TO 4500 PSI. HAD TO GIVE IT A BUMP. HELD FOR A COUPLE MINUTES. NO LEAKS.
Event	10	Pump Spacer 1	Pump Spacer 1	7/15/2018	05:47:33	COM4	404.00	11.63	3.00	PUMPED 120 BBLs OF 11.5#, 3.78y, 23.5wr, TUNED SPACER. PUMPED AT 4 BPM, 350 PSI. USED 75 GALLONS OF MUSOL A AND 75 GALLONS OF DUAL SPACER B WITH 20 GALLONS OF D-AIR.

Event	11	Drop Bottom Plug	Drop Bottom Plug	7/15/2018	06:18:44	COM4				COMPANY MAN DROPPED 2ND 5.5" BOTTOM PLUG. ADAM COVINGTON WITNESSED.
Event	12	Pump Lead Cement	Pump Lead Cement	7/15/2018	06:22:48	COM4	594.00	13.28	7.60	PUMPED 41.88 BBLS (140 SKS) OF 13.2#, 1.68y, 8.04wr 1ST ELASTICEM LEAD CEMENT. 8 BPM, 550 PSI. FULL RETURNS.
Event	13	Pump Lead Cement	Pump Lead Cement	7/15/2018	06:28:43	COM4	652.00	13.38	8.00	PUMPED 150.5 BBLS (503 SKS) OF 13.2#, 1.68y, 8.06wr 2ND LEAD ELASTICEM CEMENT. 8 BPM, 700 PSI. FULL RETURNS.
Event	14	Check Weight	Check Weight	7/15/2018	06:40:43	COM4	663.00	13.31	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	15	Pump Tail Cement	Pump Tail Cement	7/15/2018	06:48:46	COM4	760.00	13.35	8.00	PUMPED 355.5 BBLS (978 SKS) OF 13.2#, 2.04y, 9.75 wr TAIL CEMENT. 8 BPM, 890 PSI. FULL RETURNS.
Event	16	Check Weight	Check Weight	7/15/2018	07:01:13	COM4	783.00	13.26	7.50	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	17	Check Weight	Check Weight	7/15/2018	07:04:28	COM4	819.00	13.26	7.50	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	18	Shutdown	Shutdown	7/15/2018	07:36:49	COM4				SHUTDOWN TO DROP PLUG AND WASH UP TUB, PUMPS AND LINES.
Event	19	Drop Top Plug	Drop Top Plug	7/15/2018	07:47:50	COM4				CO. MAN DROPPED NON HALLIBURTON 5.5" TOP PLUG. ADAM COVINGTON WITNESSED.
Event	20	Pump Displacement	Pump Displacement	7/15/2018	07:47:54	COM4	457.00	8.01	10.10	PUMPED 352 BBLS OF WATER DISPLACEMENT. FIRST 20 HAD MMCR MIXED IN IT. THEN THE REST HAD BIOCIDES ADDED THROUGHOUT. 10 BPM, 380 PSI. FULL RETURNS. 16 BBLS OF SPACER BACK TO SURFACE.
Event	21	Bump Plug	Bump Plug	7/15/2018	08:30:22	COM4	1887.00	8.06	2.80	BUMPED NON HALLIBURTON 5.5" TOP PLUG. CO. MAN WITNESSED. FCP-1920 PSI, BUMP-2305 PSI. HELD FOR 5 MINUTES AS PER CO. MAN.
Event	22	Other	Other	7/15/2018	08:35:54	COM4				bled pressure back to truck. GOT 4 BBLS BACK, INDICATING THAT THE FLOATS HELD.
Event	23	End Job	End Job	7/15/2018	08:38:46	COM4				TD-15884', 8.5" TP-15870' 5.5" 20# FC-15825' TVD-6974' PREVIOUS CASING-1941' 9 5/8" 36#. WATER 65 DEGREES, CHLORIDES-0, PH-7, SULFATES-0. 16 BBLS OF SPACER BACK TO SURFACE. ESTIMATED TOP OF TAIL CEMENT-(6,964'), ESTIMATED TOP OF 2ND LEAD -(3,276'), ESTIMATED TOP OF 1ST LEAD-(2,250')
Event	24	Safety Meeting - Pre	Pre-Rig Down Safety	7/15/2018	08:50:00	USER				DISCUSSED RIGGING DOWN HAZARDS AND PROCEDURE

		Rig-Down	Meeting				ACCORDING TO HMS.
Event	25	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/15/2018	10:50:00	USER	HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	26	Depart Location	Depart Location	7/15/2018	11:00:00	USER	PRE JOURNEY MANAGEMENT PRIOR TO DEPARTURE.

3.0 Attachments

3.1 Case 1-Custom Results.png

