

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Date: Friday, January 19, 2018

Shufly State Y34-714 Production

Job Date: Saturday, January 13, 2018

Sincerely,

Adam McKay

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Shufly State Y34-714** 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]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3830942		Quote #:		Sales Order #: 0904551933				
Customer: NOBLE ENERGY INC - EBUS						Customer Rep: .				
Well Name: SHUFLY STATE			Well #: Y34-714			API/UWI #: 05-123-45621-00				
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO				
Legal Description: SE SE-34-2N-64W-300FSL-750FEL										
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 517						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB70026				Srv Supervisor: Kyle Langston						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST		230 degF				
Job depth MD		19763ft		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		J-55	0	2142	0	2142
Casing	0	5.5	4.778	20	BUTTRESS	P-110	0	19763	0	0
Open Hole Section			8.5				2142	7364	2500	7014
Open Hole Section			8.5				7364	19763		
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III w/ Chems	Tuned Spacer III	80	bbl	11.5	3.73		6		
34.70 gal/bbl		FRESH WATER								
0.60 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
149.34 lbm/bbl		BARITE, BULK (100003681)								
0.60 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	ElastiCem Cap	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		6	7.53	
0.80 %		SCR-100 (100003749)								
7.53 Gal		FRESH WATER								

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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal																				
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	582	sack	13.2	1.6		8	7.69																				
0.45 %		SCR-100 (100003749)																											
7.69 Gal		FRESH WATER																											
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal																				
4	NeoCem NT1	NeoCem TM	1467	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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal																				
5	Displacement	Displacement	434	bbl	8.33			10																					
<table border="1"> <tr> <td>Cement Left In Pipe</td> <td>42 FT Amount</td> <td>Reason</td> <td>Shoe Joint</td> </tr> <tr> <td>Mix Water: pH 6</td> <td>Mix Water Chloride: 0 ppm</td> <td>Mix Water Temperature: 52 °F</td> <td></td> </tr> <tr> <td>Cement Temperature:</td> <td>Plug Displaced by: 8.33 PPG</td> <td>Disp. Temperature:</td> <td></td> </tr> <tr> <td>Plug Bumped? YES</td> <td>Bump Pressure: 2700 psi</td> <td>Floats Held? YES</td> <td></td> </tr> <tr> <td>Cement Returns:</td> <td>Returns Density:</td> <td>Returns Temperature:</td> <td></td> </tr> </table>										Cement Left In Pipe	42 FT Amount	Reason	Shoe Joint	Mix Water: pH 6	Mix Water Chloride: 0 ppm	Mix Water Temperature: 52 °F		Cement Temperature:	Plug Displaced by: 8.33 PPG	Disp. Temperature:		Plug Bumped? YES	Bump Pressure: 2700 psi	Floats Held? YES		Cement Returns:	Returns Density:	Returns Temperature:	
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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	1/13/2018	15:00:00	USER				CALLED OUT TO BE ON LOCATION @ 2100
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/13/2018	17:00:00	USER				HELD SAFETY MEETING WITH HES CREW. DISCUSSED DESIGNATED ROUTE, POTENTIAL HAZARDS, POSSIBLE STOPS AND SWA.
Event	3	Crew Leave Yard	Crew Leave Yard	1/13/2018	17:30:00	USER				HES DEPARTED YARD
Event	4	Arrive At Loc	Arrive At Loc	1/13/2018	19:00:00	USER				HES ARRIVED ON LOCATION. RIG RUNNING CASING
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/13/2018	19:23:46	USER				HELD SAFETY MEETING WITH HES CREW. DISCUSSED PLAN TO RIG UP, JSA, SWA, AND INCIDENT REPORTING.
Event	6	Rig-Up Equipment	Rig-Up Equipment	1/13/2018	19:24:21	USER				RIG UP ALL CEMENT EQUIPMENT
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/13/2018	19:24:39	USER				HELD SAFETY MEETING WITH ALL RIG SITE PERSONNEL. DISCUSSED JOB PROCEDURE, JSA, SWA, AND INCIDENT REPORTING
Event	8	Test Lines	Test Lines	1/14/2018	01:00:22	COM5	5332.00	8.06		TEST KICKOUTS TO 500 PSI. TEST LINES TO 5000 PSI
Event	9	Pump Spacer 1	Pump Spacer 1	1/14/2018	01:04:33	COM5	290.00	11.48	4.60	PUMPED 80 BBLS OF TUED SPACER III @ 11.5 PPG
Event	10	Pump Cap Cement	Pump Cap Cement	1/14/2018	01:23:34	COM5	368.00	13.58	6.50	PUMPED 42 BBLS OF CAP CEMENT @ 13.2 PPG
Event	11	Check Weight	Check weight	1/14/2018	01:30:01	COM5	382.00	13.51	6.60	SCALED @ 13.2 PPG
Event	12	Pump Lead Cement	Pump Lead Cement	1/14/2018	01:32:02	COM5	370.00	13.41	6.50	PUMPED 166 BBLS OF LEAD CEMENT @ 13.2 PPG
Event	13	Pump Tail Cement	Pump Tail Cement	1/14/2018	01:56:09	COM5	571.00	13.22	7.90	PUMPED 533 BBLS OF TAIL CEMENT @ 13.2 PPG
Event	14	Pump Displacement	Pump Displacement	1/14/2018	03:20:39	COM5	328.00	8.10	9.00	PUMPED 434 BBLS OF FRESH WATER DISPLACEMENT.
Event	15	Bump Plug	Bump Plug	1/14/2018	04:10:23	COM5	2219.00	8.08	0.80	BUMPED ON CALCULATED. FINAL CIRCULATING PRESSURE 2100. BUMPED @ 2700 PSI
Event	16	Check Floats	Check Floats	1/14/2018	04:14:19	USER				FLOATS HELD 4.5 BBLS BACK

Event	17	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/14/2018	04:30:00	USER	HELD SAFETY MEETING WITH HES CREW. DISCUSSED PLAN TO RIG UP, JSA, SWA, AND INCIDENT REPORTING.
Event	18	Rig-Down Equipment	Rig-Down Equipment	1/14/2018	04:45:00	USER	RIG DOWN ALL CEMENT EQUIPMENT
Event	19	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/14/2018	06:00:00	USER	HELD SAFETY MEETING WITH HES CREW. DISCUSSED DESIGNATED ROUTE, POTENTIAL HAZARDS, POSSIBLE STOPS AND SWA.
Event	20	Crew Leave Location	Crew Leave Location	1/14/2018	06:15:00	USER	HES DEPARTED LOCATION. THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES. KYLE LANGSTON - SERVICE SUPERVISOR I

3.0 Attachments

3.1 Case 1-Custom Results.png

