

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC-EBUS

Guttersen C28-775

Production Casing

Job Date: Thursday, September 01, 2022

Sincerely,

Brandon Parker

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 Guttersen C28-775 production casing. 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.

Approximately 51 bbl. of spacer was returned to surface.

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 Fort Lupton

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3925508		Quote #:		Sales Order #: 0908084797				
Customer: NOBLE ENERGY INC-EBUS					Customer Rep: Clint					
Well Name: GUTTERSEN			Well #: C28-775			API/UWI #: 05-123-48938-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD			State: COLORADO			
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 460						
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX41066					Srvc Supervisor: Brandon Parker					
Job										
Job depth MD		17294ft			Job Depth TVD		6781ft			
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	1939	0	1939
Casing		5.5	4.892	17			0	17294	0	6781
Open Hole Section			8.5				1939	17303	1939	6781
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Float Shoe	5.5	1	Citadel	17294		Bottom Plug	5.5	4	Citadel	
Float Collar	5.5	1	Citadel	17287		Centralizers	5.5	216	Summit	
Ball Seat	5.5	1	Citadel	17275						

Fluid Data									
Stage #: 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 Prime Spacer	120	bbl	11.5	3.88	24.45	6	4246
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 Cement	EconoCem™	140	sack	13.2	1.58	7.99	6	1119
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 Cement	ElastiCem™	739	sack	13.2	1.67	8.03	8	5934
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	Tail Cement	NeoCem™	1132	sack	13.2	2.04	9.79	8	11082
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	Treated Fresh Water	401	bbl	8.33			7	16797
Cement Left In Pipe									
Amount		0 bbl.			Reason			Wet Shoe	
Mix Water:		pH 6			Mix Water Chloride:		0 ppm		
Plug Bumped?		Yes			Plug Displaced by:		8.33 lb/gal Treated Water		
Cement Returns:		0 bbl.			Bump Pressure:		2200 psi		
Floats Held?		Yes							
Comment: 51 bbl. spacer to surface, floats held 5bbls back									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Call Out	9/1/2022	00:00:00	hes crew called out to Chevron 5.5" production. On location time 06:00hrs. 1 elite pump trk 12632040, 1 pickup 12992454, 1 660 10784082 loaded with 140sks cap cmt 120bbls spacer, 3 silos on location. had no crews available to meet the 0600 on location time.
2	Pre-Convoy Safety Meeting	9/1/2022	08:45:00	meeting with all HES personnel to discuss route of travel and safety/hazards associated with traveling to location. also discussed cmt volumes on bulk trks, confirmed silo packet volumes. Depart 517 headed to 460
3	Depart Location 517	9/1/2022	08:50:00	crew convoyed to location, crew just finished Chevron H&P 517 for Mr. Kyle and Mr. Charles
4	Arrive at Location from Service Center	9/1/2022	09:15:00	arrived location. met with Mr. Clint and went over job numbers, water sources and iron placement. Rig was around 16300ft in with casing when crew arrived.
5	Assessment Of Location Safety Meeting	9/1/2022	09:16:00	checked silos for required cmt volumes, checked air compressors for fuel, started all unit to make sure everything was good, checked water upright volumes and tested water in all three uprights. chlo 0, water temp 70 deg, ph 6. TD 17302.6, TP 17294, SP 1939, SJ 7.04FT, Ball Seat 17274.8, TVD 6781, KOP 6040, EOB 7359, 5.5" 17# Casing, 9.625 36# Surface Casing, MW 10.2 OBM, OH 8.5", CNT used 216, (17330 to 894ft) Citadel plugs (4 bottom plugs), Citadel float equipment.
6	Safety Meeting - Pre Rig-Up	9/1/2022	09:20:00	meeting with HES personnel to discuss safety/hazards associated with rigging up hes equipment
7	Rig-Up Equipment	9/1/2022	09:25:00	hes rigged up bulk and water hoses. spotted pump, primmed pumping unit. Iron ran to 45ft buffer from catwalk
8	Standby	9/1/2022	10:30:00	HES went into standby mode while rig finished reaming and running casing.
9	Rig-up Lines	9/1/2022	11:30:00	ran iron to hes standpipe

10	Casing on Bottom	9/1/2022	11:45:00	rig landed casing. mountain states casing
11	Circulate Well	9/1/2022	12:00:00	rig began circulating well at 10bpm, 12100 strokes and average psi 733.
12	Pre-Job Safety Meeting	9/1/2022	13:50:00	meeting with all personnel on location to discuss safety/hazards associated with job. also covered job procedures, all personnel signed jsa
13	Ko Mud Pumps	9/1/2022	14:08:00	ko rig mud pumps. blow down crt, rig up hes lines
14	Rig-Up Floor	9/1/2022	14:20:00	rig up hoses on rig floor, hes cmt plug container was not used. pumped cmt job through CRT
15	Start Job	9/1/2022	14:38:00	start recording real time data
16	Drop Bottom Plug	9/1/2022	14:38:33	loaded bottom plug into the 5.5casing prior to filling lines with fw. 1000psi bottom plug was loaded by Mr. Clint with Chevron and witnessed by HES supervisor
17	Fill Lines FW	9/1/2022	14:38:52	pumped 4bbls of fw at 3bpm and top psi was 270
18	Test Lines	9/1/2022	14:41:31	test eko on both pumps, 5th gear stall and tested lines to 7116, held for two minutes, final psi 7145
19	Test IBOP	9/1/2022	14:50:31	closed ibop, hes tested ibop to 2390, psi held
20	Pump Tuned Prime	9/1/2022	14:56:56	pumped 120bbls of tuned prime 11.5ppg, 3.88 yield and 24.45 gal/sk. pumped at 6 bpm and average psi was 450. calculated 74 bbls of spacer to surface. weight confirmed using pressurized mud scales.
21	Check Weight	9/1/2022	15:01:59	
22	Shutdown	9/1/2022	15:15:26	HES shutdown to drop second bottom plug. 1000psi
23	Drop Bottom Plug	9/1/2022	15:21:02	second bottom plug(1000psi) loaded by Mr. Clint with Chevron and witnessed by HES supervisor
24	Pump Cap Cement	9/1/2022	15:21:28	pumped cap cmt, 140sks, 39.4bbls, 13.2ppg, 1.58 yield, 7.99gal/sk pumped at 6bpm and average psi was 450. weight confirmed using pressurized mud scales, weight confirmed by hes supervisor and operator. wet sample left on location. calculated top of cap cmt at 960.71ft. MW 1119, 70BC 6:09hrs
25	Check Weight	9/1/2022	15:26:12	

26	Pump Lead Cement	9/1/2022	15:27:36	pumped lead cmt, 739sks, 227.8bbls, 13.2ppg, 1.67 yield, 8.03 gal/sk pumped at 8bpm and average psi was 700. weight confirmed using pressurized mud scales. calculated top of lead cmt at 1783.26 MW 5934, 70BC 5:58hrs
27	Slow Rate	9/1/2022	15:57:14	slow rate from 8bpm to 6bpm to assure lead silo was mt
28	Pump Tail Cement	9/1/2022	16:01:00	pumped tail cmt, 1132sks, 411.3bbls 13.2ppg, 2.04 yield, 9.79 gal/sk pumped at 8bpm and average psi was 1000. weight confirmed using pressurized mud scales, weight confirmed by hes supervisor and operator. calculated top of tail cmt 7143.51ft. MW 11082, 70BC 4:18hrs
29	Slow Rate	9/1/2022	16:33:00	slow rate from 8bpm to 6bpm to assure tail silo was mt
30	Slow Rate	9/1/2022	16:50:47	slow rate from 8bpm to 6bpm to assure last tail silo was mt and to maintain 13.2ppg density at the end of the job
31	Shutdown	9/1/2022	16:53:27	done pumping cmt
32	Clean Lines	9/1/2022	17:01:19	sting out with crt, rig up wash up pup to clean lines and pumps to 4sided tank. pumped 22bbls of fw
33	Shutdown	9/1/2022	17:11:08	
34	Pump Green Dye	9/1/2022	17:13:54	pumped green dye/mmcr water until green dye was verified at wash up tank. total 3bbls.
35	Shutdown	9/1/2022	17:15:24	driller closed ibop
36	Drop Top Plug	9/1/2022	17:19:56	top plug loaded by Mr. Clint and witnessed by HES supervisor. 1500psi Citadel Plug, 3rd plug
37	Pump Displacement	9/1/2022	17:20:04	pumped 3bbls of greendye/mmcr water displacement. FC set at 17287 X .0232= 401bbls. pumped at 2bpm psi 48
38	Shutdown	9/1/2022	17:21:32	shutdown, closed ibop, sting out and load 4th plug 3000psi
39	Drop Top Plug	9/1/2022	17:23:54	top plug loaded by Mr. Clint with Chevron and witnessed by HES supervisor. 3000psi Citadel Plug
40	Resume FW Displacement	9/1/2022	17:24:01	pumped the remaining 398bbls of fw treated with 10gal of MMCR in the first 20bbls of displacement, 5 gallons of D-Air and 10 gallons MC MX 820-6 and 20 gallons Bellacide 300W. FC set at 17287X .0232 (5.5" 17# casing factor) = 401bbls
41	Slow Rate	9/1/2022	18:05:34	slow rate at 375bbls, 6bpm 2750 to 2bpm 2200psi

42	Bump Plug	9/1/2022	18:16:26	bumped 1500psi plug at calculated volume 401bbbls. fcp 2200psi ko pump at 2750, psi climbed to 2930 and held. plug bump verified by MR. Clint with Chevron and HES supervisor
43	Check Floats	9/1/2022	18:21:14	Citadel floats held, 5bbbls back. confirmed by Mr. Clint and hes supervisor
44	Resume Pumping	9/1/2022	18:24:17	hes came back online to rupture 1500psi plug. pumped the 5bbbls back in at 1bpm, plus an additional .25bbbl to psi up, plug ruptured at 3291psi
45	Rupture/Wet Shoe	9/1/2022	18:29:31	ruptured disc on third plug at 3291psi, pumped 3bbbls after rupture. confirmed my Mr. Clint Ellison and HES supervisor
46	Bump Plug	9/1/2022	18:32:32	citadel 3000psi plug bumped right at the 3bbl wet shoe mark. fcp 2100, kicked out pumps at 2600psi climbed to 2760 and held solid. held psi for 5 minutes. confirmed by Mr. Clint and HES supervisor
47	Check Floats	9/1/2022	18:36:29	citadel floats held 4.5bbbls back to the pump truck
48	Flowback	9/1/2022	18:37:00	monitor flow back for 30 minutes. gain .50bbbls. 4.5bbl before plus the .5bbl= 5bbbls back
49	End Job	9/1/2022	19:07:23	
50	Spacer Returns to Surface	9/1/2022	19:08:00	rig took back 51bbbls of tuned prime spacer
51	Pre-Rig Down Safety Meeting	9/1/2022	19:10:00	meeting with all hes personnel to discuss safety/hazards associated with rigging down hes equipment
52	Rig-Down Equipment	9/1/2022	19:12:00	
53	Pre-Convoy Safety Meeting	9/1/2022	20:30:00	meeting with all hes personnel to discuss safety/hazards associated with traveling to call center
54	Depart Location for Service Center or Other Site	9/1/2022	20:45:00	
55	Other	9/1/2022	20:46:00	Thank You for Choosing Halliburton Cement. Parker and Crew. (970)397-4969

3.0 Attachments

3.1 Job Chart

