

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

Cosslett East Fed 1A-22H-H168 Production

Job Date: Saturday, April 08, 2023

Sincerely,

Meghan Van Zyl

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 **Cosslett East Fed 1A-22H-H168 - Production**. 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 56bbls of cement were 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 Rockies Cement Team

1.2 Job Overview

Job Details	
API #:	05-123-51945
City, County:	Erie, Weld

	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	04/08/2023	12:00
Called Out Time:	04/08/2023	05:30
Arrived On Location:	04/08/2023	11:30
Job Started:	04/08/2023	16:47
Job Completed:	04/08/2023	20:15
Departed Location:	04/08/2023	22:00

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	60
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.7
4	Casing set depth (shoe)	ft	18195
5	TVD	ft	7719
6	Float collar depth	ft	18190
7	Length of rate hole	ft	7
8	Previous casing shoe depth	ft	2640
9	Pre-job mud circulation time	hh:mm	3
10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	1500

12	Pre-job mud circulation pressure	psi	1400
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	403
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	Cement, 56bbls
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	3060psi @4bpm
20	Number of Centralizers	-	
21	Number of plugs	-	2

1.3 Water Field Test

	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
pH	7		6.0 - 8.0	Chemicals in water can cause severe retardation
Temperature	65	F	60 - 80 F	
Chlorides	0	ppm	3000 ppm	Can shorten thickening time

1.4 Actual Pump Schedule

	Density (ppg)	Volume (bbls)	Yield (ft ³ /sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	11.5	120	3.83	24.17	176	4246
Cap Cement	13	165	2	10.17	465	4729
Lead Cement	13	231	1.81	8.55	715	6113
Tail Cement	14.5	417	1.51	6.56	1550	18438
Top Plug	1					
Displacement Fluid	8.33	403				16926

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	4/8/2023	05:30:00	Called out by service coordinator for OL time of 1200.
2	Other	4/8/2023	08:00:00	While in yard, operator checking on pump truck. it was found that we had an issue starting passenger side deck engine and could not fix quick enough. It was then we called out for another pump on a different location.
3	Pre-Convoy Safety Meeting	4/8/2023	10:15:00	Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.
4	Depart from Service Center or Other Site	4/8/2023	10:30:00	Depart from service center or other job site.
5	Arrive at Location from Service Center	4/8/2023	11:30:00	Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
6	Pre-Rig Up Safety Meeting	4/8/2023	12:00:00	Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.
7	Rig-Up Equipment	4/8/2023	12:15:00	Begin rig up with crew.
8	Circulate Bottoms Up	4/8/2023	12:15:00	Rig began to circulate bottoms up.
9	Other	4/8/2023	13:00:00	Mix water test results- PH-7, Chlo-0, Temp-65F.
10	Rig-Up Completed	4/8/2023	13:00:00	Complete rig up for job to nearest point before red zone.
11	Safety Meeting - Pre Job	4/8/2023	16:00:00	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.

12	Start Job	4/8/2023	16:47:06	TD-18201', OH-8.5", TP-18195' 20#, FC-18190', TVD-7719', SURF-2640' 9.625" 36#, MUD-9.3#.
13	Test Lines	4/8/2023	16:49:00	Pumped 5bbls fresh water to fill lines at 4bpm 320psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1800psi, proceeded to bring pressure to 5000psi, pressure stabilized and held with no leaks.
14	Pump Spacer 1	4/8/2023	16:55:56	Pumped 120bbls of 11.5# 3.83y 24.17g/s FDP Spacer with 10g D-air at 6bpm 447psi.
15	Pump Cap Cement	4/8/2023	17:11:14	Pumped 465sks or 165bbls of 13# 2y 10.17g/s Elasticem at 9bpm 498psi. Calculated mix gallons-4729g
16	Check Weight	4/8/2023	17:16:00	Weight verified with pressurized mud scales.
17	Pump Lead Cement	4/8/2023	17:29:44	Pumped 715sks 231bbls 13# 1.81y 8.55g/s Isobond at 9bpm 550psi. Calculated mix gallons-6113g
18	Pump Tail Cement	4/8/2023	17:56:31	Pumped 1550sks or 417bbls 14.5# 1.51y 6.56g/s Elasticem at 9bpm _psi. Calculated mix gallons-10168g
19	Check Weight	4/8/2023	18:04:40	Weight verified with pressurized mud scales.
20	Shutdown	4/8/2023	18:51:02	Shutdown, washed up through pumps and lines with fresh water. Pumped total of 20bbls until clean.
21	Drop Top Plug	4/8/2023	18:58:00	Dropped by HES supervisor, witnessed by company man.
22	Pump Displacement	4/8/2023	18:58:39	Pumped 403bbls fresh water at 10bpm.
23	Bump Plug	4/8/2023	19:59:02	Slowed down at 380bbls away to 4bpm, final circulating pressure-3060psi. Bump pressure-3600psi.
24	Other	4/8/2023	20:00:33	Released pressure and got 5.5bbls back. Floats held.
25	End Job	4/8/2023	20:02:31	Got 56bbls Cement to surface. Est TOT-7974', TOL-2352'. Used total of 1050bbls fresh water for job.

26	Pre-Rig Down Safety Meeting	4/8/2023	20:15:00	Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
27	Rig Down Lines	4/8/2023	20:30:00	Begin rig down
28	Rig-Down Completed	4/8/2023	21:30:00	Rig down complete with no injuries, spills or damage to equipment.
29	Pre-Convoy Safety Meeting	4/8/2023	21:45:00	Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.
30	Depart Location for Service Center or Other Site	4/8/2023	22:00:00	Depart location if applicable journey will be submitted.

3.0 Attachments

3.1 Real Time iCem Job Chart

