

HALLIBURTON

iCem® Service

CRESTONE PEAK RESOURCES-EBUS

Ft. Lupton District, co

Cosslett East 1H-22H-H168 Production

Job Date: Tuesday, May 09, 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 **Coslett East 1H-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 53 bbls 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 #:	05-123-51942
City, County:	ERIE, WELD

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	5/9/2023	0200
Called Out Time:	5/9/2023	0600
Arrived On Location:	5/9/2023	0910
Job Started:	5/9/2023	1056
Job Completed:	5/9/2023	1513
Departed Location:	5/9/2023	1800

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	62
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	8.9
4	Casing set depth (shoe)	ft	19080
5	TVD	ft	7864
6	Float collar depth	ft	19075
7	Length of rate hole	ft	10
8	Previous casing shoe depth	ft	2629
9	Pre-job mud circulation time	hh:mm	6:00
10	Pre-job mud circulation rate	bpm	6
11	Pre-job mud circulation volume	bbls	

12	Mud circulation pressure at start of cement	psi	400
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	422.9
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120/53
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2400/4
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1

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	62	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	LESS 200	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	3.835	24.17		4247
Cap Cement	13	172.34	1.64	7.96	590	4697
Lead Cement	13	244.66	1.57	7.32	875	6405
Tail Cement	13.2	433.42	1.56	7.52	1560	11732
Top Plug	1					
Displacement Fluid	8.33	422.9				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	5/9/2023	06:00:00	CREW CALLED OUT 5/9/2023 0600 HRS. REQUESTED ON LOCATION 5/9/2023 0200 HRS. CREW CAME OFF DAYS OFF AT 0700 HRS.
2	Pre-Convoy Safety Meeting	5/9/2023	08:00:00	DISCUSS ROUTE AND HAZARDS OF DRIVING
3	Crew Leave Yard	5/9/2023	08:30:00	CREW LEAVES YARD
4	Arrive At Loc	5/9/2023	09:10:00	ARRIVE AT LOCATION. MEET WITH CUSTOMER
5	Pre-Rig Up Safety Meeting	5/9/2023	09:15:00	DISCUSS RIG-UP AND ANY HAZARDS THAT MAY EXIST
6	Rig-Up Equipment	5/9/2023	09:20:00	RIG-UP EQUIPMENT
7	Pre-Job Safety Meeting	5/9/2023	10:45:00	DISCUSS JOB PROCEDURES AND HAZARDS OF JOB, PRESSURE AND HAZARDS OF HES EQUIPMENT
8	Start Job	5/9/2023	10:56:19	BEGIN RECORDING DATA
9	Drop Bottom Plug	5/9/2023	10:57:24	BOTTOM PLUG VERIFIED BY JOSH
10	Test Lines	5/9/2023	10:58:40	TEST HES LINES 4900 PSI
11	Pump Spacer	5/9/2023	11:07:31	120 BBLS TUNED PRIME SPACER, 11.5 PPG, 3.835 YIELD, 24.17 GAL/SACK
12	Pump Cap Cement	5/9/2023	11:31:44	590 SACKS ELASTICEM CAP CEMENT. 172.34 BBLS. 13 PPG PPG, 1.64 YIELD, 7.96 GAL/SACK TOCC=0' APPROX 53 BBLS CEMENT TO SURFACE
13	Pump Lead Cement	5/9/2023	12:00:42	875 SACKS ISOBOND LEAD CEMENT. 244.66 BBLS, 13 PPG, 1.57 YIELD, 7.32 GAL/SACK TOLC=2484'

14	Pump Tail Cement	5/9/2023	12:39:08	1560 SACKS ELASTICEM TAIL CEMENT. 433.42 BBLs. 13.2 PPG, 1.56 YIELD, 7.52 GAL/SACK TOTC=8459'
15	Shutdown	5/9/2023	13:54:55	SHUTDOWN
16	Clean Lines	5/9/2023	13:56:00	CLEAN PUMPS AND LINES APPROX 23 BBLs
17	Shutdown	5/9/2023	14:05:45	SHUTDOWN
18	Drop Top Plug	5/9/2023	14:06:27	TOP PLUG VERIFIED BY JOSH
19	Pump Displacement	5/9/2023	14:06:30	422.9 BBLs FRESH WATER DISPLACEMENT. 1ST 20 BBLs HAS 10 GALLONS MICRO MATRIX CEMENT RETARDER. REMAINING HAS RIG PROVIDED BIOCIDES.
20	Bump Plug	5/9/2023	15:08:00	FCP 2400 PSI/4 BPM, BUMP PRESSURE 3000 PSI. LOST JOB DATA RIGHT BEFORE BUMP PLUG
21	Check Floats	5/9/2023	15:10:04	FLOATS HOLD. 4.5 BBLs BACK
22	End Job	5/9/2023	15:13:30	STOP RECORDING DATA. FLLUSH RIG STACK 35 BBLs WATER/100 LBS SUGAR. USED 60 GALLONS D-AIR. USED APPROX 1130 BBLs WATER TOTAL JOB
23	Pre-Rig Down Safety Meeting	5/9/2023	15:30:27	DISCUSS HAZARDS OF RIG-DOWN AND ANY OTHER HAZARDS THAT MAY EXIST
24	Rig-Down Equipment	5/9/2023	15:35:00	RIG-DOWN EQUIPMENT
25	Rig-Down Completed	5/9/2023	16:00:00	RIG-DOWN COMPLETED
26	Crew Leave Location	5/9/2023	18:00:00	CREW LEAVES LOCATION. THANK YOU FOR CHOOSING HALLIBURTON.

3.0 Attachments

3.1 Real Time iCem Job Chart

