

HALLIBURTON

iCem[®] Service

Crestone Peak Resources

Ft. Lupton District, CO

Cosslett East 1K-22H-H168 PRODUCTION

Job Date: Saturday, May 20, 2023

Sincerely,

Rafael Giorgana

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 1K-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 75 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 #:	05-123-51946-00
City, County:	Erie, Weld

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	5/20/23	1000
Called Out Time:	5/20/23	0240
Arrived On Location:	5/20/23	0820
Job Started:	5/20/23	2314
Job Completed:	5/21/23	0303
Departed Location:	5/21/23	0500

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	56
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9
4	Casing set depth (shoe)	ft	19509
5	TVD	ft	7788
6	Float collar depth	ft	19504
7	Length of rate hole	ft	4
8	Previous casing shoe depth	ft	2705
9	Pre-job mud circulation time	hh:mm	6:00
10	Pre-job mud circulation rate	bpm	10BPM
11	Pre-job mud circulation volume	bbls	3600

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	432.4
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120/75
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2500 @ 4BPM
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	59	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 (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	11.5	120	3.835	24.17	176	4247
Cap Cement	13	172.33	1.64	7.96	590	4297
Lead Cement	13	265.64	1.57	7.32	950	6954
Tail Cement	13.2	433.42	1.56	7.52	1560	11732
Top Plug	1	1				
Displacement Fluid	8.33					

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	5/20/2023	02:40:00	CREW CALLED OUT 5/50/2023 0240 HRS. REQUESTED ON LOCATION 5/20/2022 0100 HRS.
2	Pre-Convoy Safety Meeting	5/20/2023	07:00:00	DISCUSS ROUTE AND HAZARDS OF DRIVING
3	Crew Leave Yard	5/20/2023	07:45:00	CREW LEAVES YARD
4	Arrive At Loc	5/20/2023	08:20:00	ARRIVE AT LOCATION. MEET WITH CUSTOMER
5	Pre-Rig Up Safety Meeting	5/20/2023	08:45:00	DISCUSS RIG-UP AND ANY HAZARDS THAT MAY EXIST
6	Rig-Up Equipment	5/20/2023	08:50:00	RIG-UP EQUIPMENT
7	Start Job	5/20/2023	18:07:49	
8	Pre-Job Safety Meeting	5/20/2023	19:38:44	DISCUSS JOB PROCEDURES AND HAZARDS OF JOB, PRESSURE AND HAZARDS OF HES EQUIPMENT. RIG CIRCULATES 10/1200 PSI
9	Start Job	5/20/2023	23:14:56	BEGIN RECORDING DATA
10	Drop Bottom Plug	5/20/2023	23:15:01	CITADEL BOTTOM PLUG BY JOSH
11	Pressure Test	5/20/2023	23:19:04	TEST HES LINES 6700 PSI PER JOSE
12	Pump Spacer 1	5/20/2023	23:23:54	120 BBL TUNED PRIME SPACER. 11.5 PPG. MIX D-AIR ON FLY
13	Pump Cap Cement	5/20/2023	23:43:25	590 SACKS ELASTICEM CAP CEMENT. 172.33 BBL. 13 PPG. TOCC=0'

14	Pump Lead Cement	5/21/2023	00:03:46	950 SACKS ISO BOND LEAD CEMENT. 265.64 BBLS. 13 PPG. TOLC=2426' PRE-JOB CALCULATIONS
15	Pump Tail Cement	5/21/2023	00:38:47	1560 SACKS ELASTICEM TAIL CEMENT. 433.42 BBLS. 13.2 PPG. TOTC= 8888' PRE-JOB CALCULATIONS
16	Shutdown	5/21/2023	01:38:39	SHUTDOWN
17	Clean Lines	5/21/2023	01:40:17	CLEAN PUMPS AND LINES. APPROX 15 BBLS
18	Shutdown	5/21/2023	01:47:47	SHUTDOWN
19	Drop Top Plug	5/21/2023	01:49:13	CITADEL TOP PLUG BY JOSH
20	Pump Displacement	5/21/2023	01:49:17	432.4 BBLS FRESH WATER DISPLACEMENT. 1ST 20 BBLS HAS 10 GALLONS MICRO MATRIX CEMENT RETARDER. REMAINING DISPLACEMENT HAS 10 GALLONS BIOCIDES PROVIDED BY RIG
21	Slow Rate	5/21/2023	02:53:49	SLOW RATE
22	Bump Plug	5/21/2023	03:00:39	FCP 2500 PSI/4BPM' BUMP PRESSURE 3000 PSI
23	Check Floats	5/21/2023	03:02:27	FLOATS HOLD. 4.5 BBLS BACK.' 75 BBLS CMT TO SURFACE.
24	End Job	5/21/2023	03:03:50	STOP RECORDING DATA.' FLUSH RIG STACK WITH 30 BBLS OF WATER WITH 100# SUGAR.' USE 45 GALLONS OF D AIR.' TOTAL WATER USED APPROXIMATELY 1140 BBLS TOTAL JOB.
25	Pre-Rig Down Safety Meeting	5/21/2023	03:20:00	DISCUSS HAZARDS OF RIG-DOWN AND ANY OTHER HAZARDS THAT MAY EXIST
26	Rig-Down Equipment	5/21/2023	03:25:00	RIG-DOWN EQUIPMENT
27	Rig-Down Completed	5/21/2023	03:50:00	RIG-DOWN COMPLETED
28	Crew Leave Location	5/21/2023	04:45:00	CREW DEPARTS LOCATION. THANK YOU FOR CHOOSING HALLIBURTON.

3.0 Attachments

3.1 Cosslett East 1k-22H-H168 JOB CHART.png

