

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

Ft. Lupton District, CO

Property Reserve 4-65 3-4 4AH Production

Job Date: Saturday, February 25, 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 **Property Reserve 4-65 3-4 4AH - 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 54 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 #:	05-005-07513
City, County:	Watkins, Arapahoe

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	2/25/2023	0900
Called Out Time:	2/25/2023	0100
Arrived On Location:	2/25/2023	0830
Job Started:	2/25/2023	1331
Job Completed:	2/25/2023	1648
Departed Location:	2/25/2023	1830

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	50
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	obm
3	Mud density	ppg	9.2
4	Casing set depth (shoe)	ft	18020
5	TVD	ft	7939
6	Float collar depth	ft	18025
7	Length of rate hole	ft	4
8	Previous casing shoe depth	ft	3287
9	Pre-job mud circulation time	hh:mm	1.25
10	Pre-job mud circulation rate	bpm	12
11	Pre-job mud circulation volume	bbls	759

12	Mud circulation pressure at start of cement	psi	1300
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	398
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	50/54
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2550
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	65	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	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	50	3.83	24.16		1771
Cap Cement	13	171.02	1.67	8.25	575	4744
Lead Cement	13	209.8	1.55	7.16	760	5442
Tail Cement	13.2	432	1.59	9.33	1525	11865
Top Plug						
Displacement Fluid	8.33	398				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	2/25/2023	01:00:00	CREW CALLED OUT 2/25/2023 0100 HRS. REQUESTED ON LOCATION 2/25/2023 0100 HRS.
2	Pre-Convoy Safety Meeting	2/25/2023	06:30:00	DISCUSS ROUTE AND HAZARDS OF DRIVING
3	Crew Leave Yard	2/25/2023	07:00:00	CREW LEAVES YARD
4	Arrive At Loc	2/25/2023	08:30:00	ARRIVE AT LOCATION. MEET WITH CUSTOMER-TD 18034', 20# P-110 SHOE 18020', F/C 18025', 8.5" HOLE, TVD 7939', 36# J-55 SHOE 3287', OBM 9.2 PPG,
5	Pre-Rig Up Safety Meeting	2/25/2023	08:45:00	DISCUSS RIG-UP AND ANY HAZARDS THAT MAY EXIST
6	Rig-Up Equipment	2/25/2023	08:50:00	RIG-UP EQUIPMENT
7	Pre-Job Safety Meeting	2/25/2023	13:00:00	DISCUSS JOB PROCEDURES AND HAZARDS OF JOB, PRESSURE AND HAZARDS OF HES EQUIPMENT
8	Start Job	2/25/2023	13:31:50	START JOB
9	Drop Bottom Plug	2/25/2023	13:32:43	CITADEL BOTTOM PLUG BY MANNY
10	Test Lines	2/25/2023	13:34:55	TEST HES LINES 4700 PSI
11	Pump Spacer 1	2/25/2023	13:45:48	120 BBLS TUNED PRIME SPACER
12	Pump Cap Cement	2/25/2023	13:54:26	575 SACKS ELASTICEM CAP CEMENT. 171.02 BBLS. TOCC=0'

13	Pump Lead Cement	2/25/2023	14:18:05	760 SACKS ISO BOND LEAD CEMENT. 209.8 BBLs. TOLC=2448' PRE JOB-CALCULATIONS
14	Pump Tail Cement	2/25/2023	14:44:10	1525 BBLs ELASTICEM TAIL CEMENT. 432 BBLs. TOTC=7444' PRE JOB-CALCULATIONS
15	Shutdown	2/25/2023	15:40:21	SHUTDOWN
16	Clean Lines	2/25/2023	15:42:31	CLEAN PUMPS AND LINES. APPROX 16 BBLs
17	Shutdown	2/25/2023	15:48:44	SHUTDOWN
18	Drop Top Plug	2/25/2023	15:50:53	CITADEL TOP PLUG BY MANNY
19	Pump Displacement	2/25/2023	15:50:56	398 BBLs FRESH WATER DISPLACEMENT. 1ST 20 BBLs HAS 10 GALLONS MICRO MATRIX CEMENT RETARDER. REMAINING DISPLACEMENT HAS RIG PROVIDED BIOCIDES
20	Shutdown	2/25/2023	15:57:30	SHUTDOWN TO FIX LEAK ON IRON
21	Bump Plug	2/25/2023	16:45:29	FCP 2550 PSI/4 BPM, BUMP PRESSURE 3050 PSI. APPROX 54 BBLs CAP CEMENT TO SURFACE
22	Check Floats	2/25/2023	16:46:54	FLOATS HOLD/4.5 BBLs BACK
23	End Job	2/25/2023	16:48:16	STOP RECORDING DATA. FLUSH RIG STACK W/100 BBLs WATER AND 100 LBS SUGAR. USED APPROX 1233 BBLs WATER ENTIRE JOB
24	Pre-Rig Down Safety Meeting	2/25/2023	16:55:00	DISCUSS HAZARDS OF RIG-DOWN AND ANY OTHER HAZARDS THAT MAY EXIST
25	Rig-Down Equipment	2/25/2023	17:00:00	RIG-DOWN EQUIPMENT
26	Rig-Down Completed	2/25/2023	18:00:00	RIG-DOWN COMPLETED
27	Crew Leave Location	2/25/2023	18:30:00	CREW DEPARTS LOCATION. THANK YOU FOR CHOOSING HALLIBURTON.

3.0 Attachments

3.1 Real Time iCem Job Chart

