

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

Ft. Lupton District, CO

Shelton 25W-25-05 Production

Job Date: Thursday, February 23, 2023

Sincerely,

Meghan Van Zyl

Legal Notice

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Table of Contents

Cementing Job Summary 4

 Executive Summary 4

 Job Overview 5

 Water Field Test 7

 Actual Pump Schedule 7

Real-Time Job Summary 8

 Job Event Log 8

Attachments 10

 Real Time iCem Job Chart 10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Shelton 25W-25-05 - 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 45 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 #:	05-123-51884-00
City, County:	LA SALLE, WELD

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	2/22/23	0000
Called Out Time:	2/22/23	18:00
Arrived On Location:	2/22/23	23:45
Job Started:	2/23/23	03:35
Job Completed:	2/23/23	08:41
Departed Location:	2/23/23	11:45

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	MINUS 8
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.2
4	Casing set depth (shoe)	ft	20610
-85	TVD	ft	7033
6	Float collar depth	ft	20605
7	Length of rate hole	ft	16
8	Previous casing shoe depth	ft	1919
9	Pre-job mud circulation time	hh:mm	1:30
10	Pre-job mud circulation rate	bpm	10.5
11	Pre-job mud circulation volume	bbls	854

12	Mud circulation pressure at start of cement	psi	1350
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	455.4
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	50/45
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2450
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	80	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 (ft ³ /sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	11.5	50	3.83	24.17		1772
Cap Cement	13	165.56	1.66	8.32	560	4659
Lead Cement	13	204.28	1.55	7.16	740	5298
Tail Cement	13.2	536.62	536.62	7.78	1895	14743
Top Plug						
Displacement Fluid	8.33	455.4				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	2/22/2023	18:00:00	CREW CALLED OUT 2/22/2023 1800 HRS. REQUESTED ON LOCATION 2/22/23 0000 HRS.
2	Pre-Convoy Safety Meeting	2/22/2023	22:45:00	DISCUSS ROUTE AND HAZARDS OF DRIVING
3	Crew Leave Yard	2/22/2023	23:00:00	CREW LEAVES YARD
4	Arrive At Loc	2/22/2023	23:45:00	ARRIVE AT LOCATION. MEET WITH CUSTOMER TD 20626', 20# P-110 SHOE 20610', F/C 20605', 8.5" HOLE, TVD 7033', 36# J-55 SHOE 1919', OBM 9.2 PPG, WATER 82 DEGREES, PH7, CHLORIDES LESS 200 PPM, MAX PSI 3500
5	Pre-Rig Up Safety Meeting	2/23/2023	00:05:00	DISCUSS RIG-UP AND ANY HAZARDS THAT MAY EXIST
6	Rig-Up Equipment	2/23/2023	00:10:00	RIG-UP EQUIPMENT
7	Pre-Job Safety Meeting	2/23/2023	03:00:00	DISCUSS JOB PROCEDURES AND HAZARDS OF JOB, PRESSURE AND HAZARDS OF HES EQUIPMENT
8	Start Job	2/23/2023	03:36:04	BEGIN RECORDING DATA
9	Drop Bottom Plug	2/23/2023	03:37:07	CITADEL BOTTOM PLUG
10	Test Lines	2/23/2023	03:41:41	TEST HES LINES 4500 PSI
11	Pump Spacer 1	2/23/2023	03:48:38	50 BBLS TUNED PRIME SPACER. 11.5 PPG, 3.83 YIELD, 24.17 GAL/SACK. MIX D-AIR ON FLY
12	Shutdown	2/23/2023	03:58:51	SHUTDOWN TO SWAP HOSES, AND CAP SILO WAS NOT BUILDING PRESSURE

13	Pump Cap Cement	2/23/2023	04:11:19	560 SACKS ELASTICEM CAP CEMENT. 165.56 BBLS. 13 PPG, 1.66 YIELD, 8.32 GAL/SACK. TOCC=0'
14	Shutdown	2/23/2023	04:20:57	SHUTDOWN DUE TO LOW AIR PRESSURE ON SILO
15	Resume Pumping	2/23/2023	04:30:50	RESUME PUMPING CAP CEMENT
16	Pump Lead Cement	2/23/2023	05:20:35	740 SACKS ISO BOND LEAD CEMENT. 204.28 BBLS. 13 PPG, 1.55 YIELD, 7.16 GAL/SACK. TOLC=2453' PRE-JOB CALCULATIONS
17	Pump Tail Cement	2/23/2023	05:52:11	1895 SACKS ELASTICEM TAIL CEMENT. 536.62 BBLS. 13.2 PPG, 1.59 YIELD, 7.78 GAL/SACK. TOTC=7460' PRE-JOB CALCULATIONS
18	Shutdown	2/23/2023	07:13:32	SHUTDOWN
19	Clean Lines	2/23/2023	07:15:52	CLEAN PUMPS AND LINES. APPROX 22 BBLS
20	Shutdown	2/23/2023	07:26:26	SHUTDOWN
21	Drop Top Plug	2/23/2023	07:29:32	CITADEL TOP PLUG BY JOSH
22	Pump Displacement	2/23/2023	07:29:34	455.4 BBLS FRESH WATER DISPLACEMENT. 80 GALLONS MICRO MATRIX CEMENT RETARDER PRE LOADED IN 400 BBL UPRIGHT. RIG SUPPLIED 10 GALLONS BIOCID
23	Bump Plug	2/23/2023	08:23:31	FCP 2450 PSI/4 BPM, BUMP PRESSURE 2950 PSI. APPROX 45 BBLS CEMENT TO SURFACE
24	Check Floats	2/23/2023	08:36:03	FLOATS HOLD. 5.5 BBLS BACK TO PUMP TRUCK
25	End Job	2/23/2023	08:41:01	STOP RECORDING DATA. FLUSH RIG STACK/APPROX 30 BBLS. USED APPROX 1139 BBLS TOTAL JOB.
26	Pre-Rig Down Safety Meeting	2/23/2023	09:15:00	DISCUSS HAZARDS OF RIG-DOWN AND ANY OTHER HAZARDS THAT MAY EXIST
27	Rig-Down Equipment	2/23/2023	09:20:00	RIG-DOWN EQUIPMENT
28	Crew Leave Location	2/23/2023	10:30:00	CREW DEPARTS LOCATION. THANK YOU FOR CHOOSING HALLIBURTON.
29	Rig-Down Completed	2/23/2023	10:30:00	RIG-DOWN COMPLETED

3.0 Attachments

3.1 Real Time iCem Job Chart

