

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

Ft. Lupton District, COLORADO

For: Josh Johnson

Date: Saturday, March 18, 2023

COSSLETT EAST

COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR

Job Date: Saturday, March 18, 2023

Sincerely,

Cody Haley

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.....	14
COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR-Custom Results (1).png.....	14
COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR-Custom Results (2).png.....	15
COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR-Custom Results (3).png.....	16

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR. 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 25 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
County:	Weld
Field:	Wattenberg
Legal Discription:	SENE SEC 22 TOWN 1N RANGE 68W

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	03/18/2023	12:30
Called Out Time:	03/18/2023	6:30
Arrived On Location:	03/18/2023	10:30
Job Started:	03/18/2023	12:45
Job Completed:	03/18/2023	15:00
Departed Location:	03/18/2023	16:30

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	45
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	WBM
3	Mud density	ppg	8.8
4	Casing set depth (shoe)	ft	593
5	TVD	ft	606
6	Float collar depth	ft	555.2
7	Length of rate hole	ft	10

8	Previous casing shoe depth	ft	145
9	Pre-job mud circulation time	hh:mm	00:15
10	Pre-job mud circulation rate	bpm	5
11	Pre-job mud circulation volume	bbls	40
12	Mud circulation pressure at start of cement	psi	50
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	86
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	50
18	Fluid returns to surface	Spacer/Cement, bbls	25 CEMENT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	160
20	Number of Centralizers	-	15
21	Number of bottom 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	Can can pre-mature setting of cement
Chlorides	<3000	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						
Cap Cement	14.2	116	1.15	5.74	567	3254
Lead Cement	14.2	72.4	1.15	5.74	353	2026
Tail Cement	NA					
Top Plug	2					
Displacement Fluid	8.33	86				3612

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump B Pressure (psi)	Cmb Stg Total (bbl)	Comments
Event	1	Call Out	Call Out	3/18/2023	06:30:00	USER					Crew called out at 0630 on 3/18/2023 for a requested-on location time of 1230 on 3/18/2023.
Event	2	Crew Leave Location	Crew Leave Location	3/18/2023	10:27:29	USER					Crew departs location. Thank you for using Halliburton
Event	3	Arrive At Loc	Arrive At Loc	3/18/2023	10:30:00	USER					Crew arrived on location at 1030 hrs. Meet with costumer TD 603', 17.5 OH, TP 593 13.375' 54.5#, FC 546', TVD 606', P/C 145' 20' 94#, OBM WEIGHT 8.7 PPG.
Event	4	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	3/18/2023	11:30:00	USER					Discuss hazards around rig up area.

Event	5	Rig-Up Completed	Rig-Up Completed	3/18/2023	12:15:00	USER					Rig up completed.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/18/2023	12:30:00	USER	-1.24	0.00	-22.74	0.00	Pre job safety meeting discussed all hazards prior to job and reviewed job procedure.
Event	7	Start Job	Start Job	3/18/2023	12:48:52	USER	8.21	0.00	-8.05	0.00	Start recording data.
Event	8	Test Lines	Test Lines	3/18/2023	12:50:52	USER	8.32	0.10	738.22	2.99	Pumped 5bbbls fresh water to fill lines, shutdown, closed manifold, performed 500psi k/o function test, continued with 5th gear stall at 1350psi, proceeded to bring pressure to 3500psi. Held well, no leaks.
Event	9	Pump Cement	Pump Cement	3/18/2023	12:56:20	NONE	8.31	0.00	-3.50	0.00	Pumped 553sk or 115bbbls of 14.2# 1.15y 5.74g/s SwiftCem at 5bpm 320psi.
Event	10	Check Weight	Check Weight	3/18/2023	13:03:12	NONE	13.93	5.56	396.43	19.66	Weight verified with pressurized mud scales.

Event	11	Check Weight	Check Weight	3/18/2023	13:09:37	NONE	14.04	5.53	325.62	55.42	Weight verified with pressurized mud scales.
Event	12	Shutdown	Shutdown	3/18/2023	13:20:31	NONE	15.03	0.00	130.49	109.99	Shutdown to drop plug.
Event	13	Pump Displacement	Pump Displacement	3/18/2023	13:26:32	NONE	14.83	0.00	8.22	0.00	Displaced first 10bbbls with cement water, followed by 76bbbls fresh water, total 86bbbl displacement. Slowed down to 3bpm at 75bbbls away,
Event	14	Drop Top Plug	Drop Top Plug	3/18/2023	13:26:36	USER	14.79	1.29	16.35	0.03	Dropped by tool hand witnessed by HES supervisor and company man.
Event	15	Bump Plug	Bump Plug	3/18/2023	13:47:45	NONE	8.36	0.00	640.21	83.98	final circulating pressure-69psi, Bump Pressure 600psi.

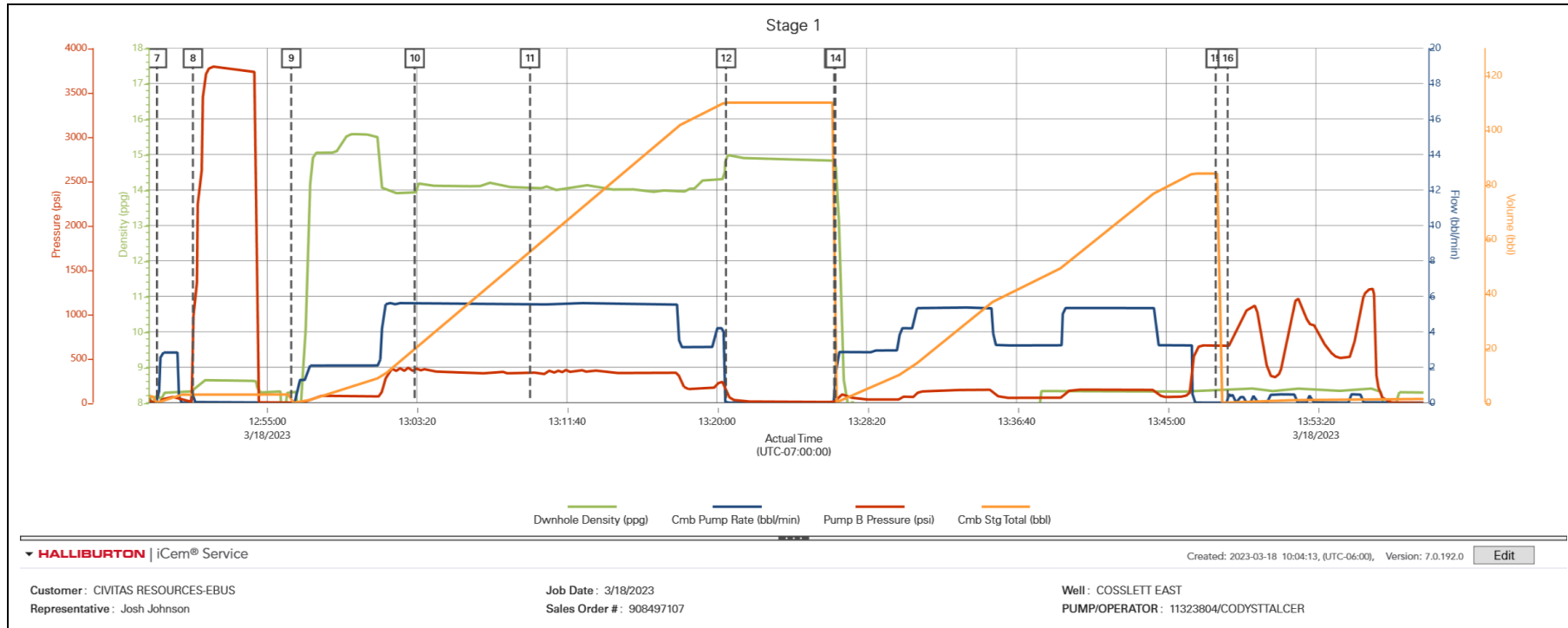
Event	16	Other	Other	3/18/2023	13:48:25	NONE	8.35	0.00	636.27	0.00	Inflate packer to 650, 850,1060, 1100, 1100psi until opened at 1100psi and fell to 600psi, brought up to 1200psi. Broke free there fell to 500 psi. Brought pressure up to 500psi, 700psi, 900 psi, 1100 psi, 1140 psi released at 1250psi. 1.5 bbls back floats holding.
Event	17	Drop Ball	Drop Ball	3/18/2023	14:03:54	NONE	-1.06	0.00	-1.17	1.42	Dropped by tool hand witnessed by HES supervisor and company man.
Event	18	Other	Other	3/18/2023	14:07:23	NONE	8.30	0.00	-1.68	0.00	Opened Tool at 1.2bpm to 860psi, 1.2bbl to open. Pumped 55 bbls of fresh water seen good returns 33 bbls away.
Event	19	Pump Cement	Pump Cement	3/18/2023	14:20:24	NONE	8.31	0.00	-3.47	0.00	Pumped 353sks or 72.4bbl of 14.2# 1.15y 5.74g/s SwiftCem at 5bpm 110psi.

Event	20	Check Weight	Check Weight	3/18/2023	14:26:11	NONE	15.38	2.74	102.69	6.11	Weight verified with pressurized mud scales.
Event	21	Check Weight	Check Weight	3/18/2023	14:27:50	NONE	15.26	3.24	132.83	11.47	Weight verified with pressurized mud scales.
Event	22	Check Weight	Check Weight	3/18/2023	14:35:32	NONE	14.03	5.48	316.69	53.28	Weight verified with pressurized mud scales.
Event	23	Shutdown	Shutdown	3/18/2023	14:41:12	NONE	14.99	0.00	100.88	79.14	Shutdown to drop top plug.
Event	24	Drop Top Plug	Drop Top Plug	3/18/2023	14:44:00	NONE	14.90	0.00	12.91	79.14	Dropped by tool hand witnessed by HES supervisor and company man.
Event	25	Pump Displacement	Pump Displacement	3/18/2023	14:44:03	NONE	14.90	0.00	13.08	0.00	Displaced first 10bbls with cement water, followed by 37bbls fresh water, total of 47bbls Fresh water Displacement.
Event	26	Bump Plug	Bump Plug	3/18/2023	14:57:09	NONE	7.57	0.00	1529.60	47.03	FCP @4BPM 160 PSI, BUMPED UP TO 1672 PSI.
Event	27	Other	Check Floats	3/18/2023	14:58:43	NONE	7.57	0.00	1670.31	47.03	1 BBL back floats holding. 25 bbls of cement to surface.
Event	28	End Job	End Job	3/18/2023	15:00:10	NONE	7.42	0.00	1.55	0.00	Stop recording data.

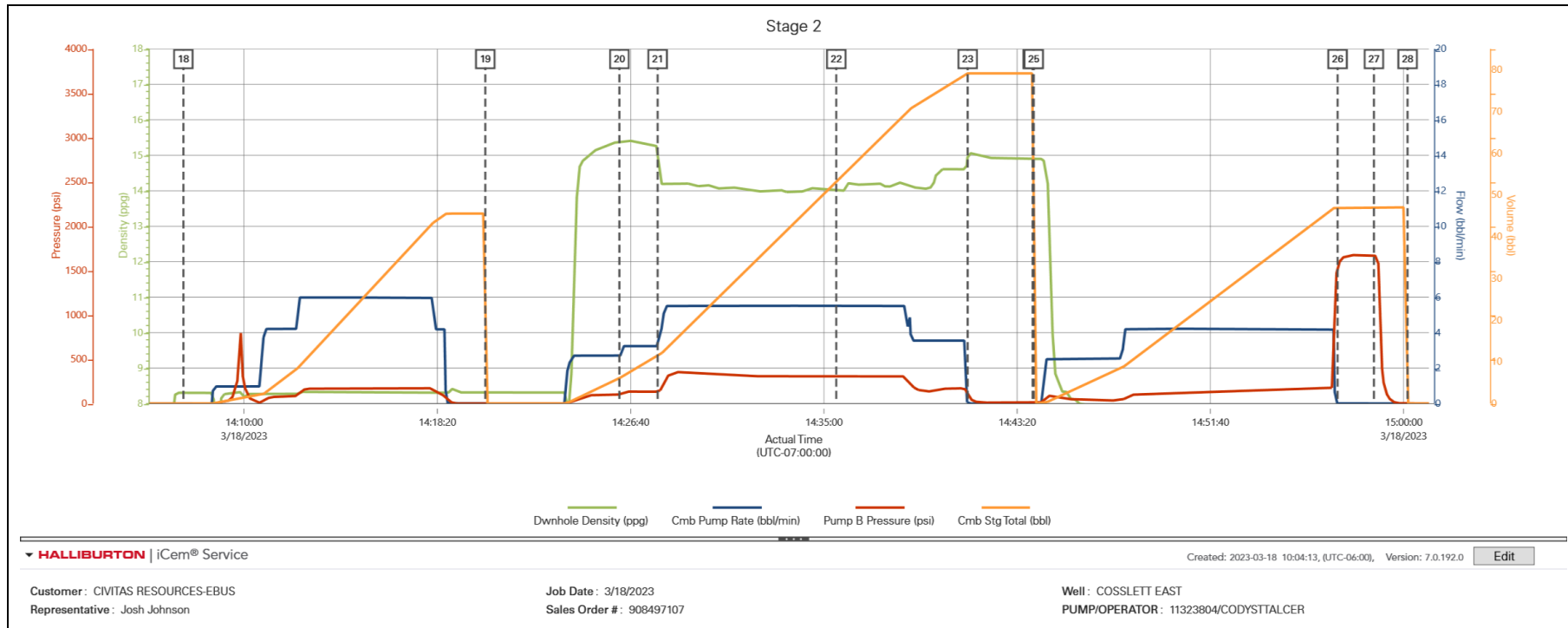
Event	29	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	3/18/2023	15:05:00	USER	-1.50	0.00	-1.38	0.00	Discuss blow down and any new hazards that could have come up during job.
Event	30	Rig-Down Completed	Rig-Down Completed	3/18/2023	16:30:00	USER					Rig down completed.

3.0 Attachments

3.1 COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR-Custom Results (1).png



3.2 COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR-Custom Results (2).png



3.3 COSSLETT EAST 1K-22H-H16 13.375' CONDUCTOR-Custom Results (3).png

