

HALLIBURTON

iCem[®] Service

CRESTONE PEAK RESOURCES-EBUS

For: Josh Johnson and Sam Mares

Date: Thursday, March 16, 2023

COSSLETT 1G-22H-H168

COSSLETT 1G-22H-H168

Job Date: Thursday, March 16, 2023

Sincerely,

Nick Roles and Crew

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 1G-22H-H168 CONDUCTOR 2 STAGE. 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 25bbls 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 #:	05-123-51941
County:	Weld
Field:	Wattenberg
Legal Discription:	SENE SEC 22 TOWN 1N RANGE 68W

Job Times			
	Date (mm/dd/yyyy)	Time (hh:mm)	Time Zone
Requested Time On Location:	03/16/2023	11:30	MTN
Called Out Time:	03/16/2023	05:30	MTN
Arrived On Location:	03/16/2023	05:30	MTN
Job Started:	03/16/2023	11:55	MTN
Job Completed:	03/16/2023	21:57	MTN
Departed Location:	03/16/2023	23:00	MTN

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	35
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	WBM
3	Mud density	ppg	8.8
4	Casing set depth (shoe)	ft	603
5	TVD	ft	603
6	Float collar depth	ft	555
7	Length of rate hole	ft	10
8	Previous casing shoe depth	ft	145
9	Pre-job mud circulation time	hh:mm	00:30

10	Pre-job mud circulation rate	bpm	5
11	Pre-job mud circulation volume	bbls	60
12	Pre-job mud circulation pressure	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	Cement
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	110
20	Number of Centralizers	-	15
21	Number of 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	
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						
1st stage Cement	14.2	116	1.15	5.74	567	3254
2nd stage Cement	14.2	72.4	1.15	5.74	353	2026
Tail Cement	NA					
Top Plug	2					
1st stage Displacement Fluid	8.33	86				3612
2nd stage Displacement Fluid	8.33	47				1974

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)	Mix Wtr Stg Tot (gal)	Comments
Event	1	Call Out	Call Out	3/16/2023	05:30:00	USER						Called out by service coordinator for OL time of 1130.
Event	2	Arrive at Location from Service Center	Arrive at Location from Service Center	3/16/2023	06:00:00	USER						Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
Event	3	Other	Other	3/16/2023	11:00:00	USER						Mix water test results- PH-7, Chlo-0, Temp-65F.
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/16/2023	11:15:00	USER						Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and

											closest emergency location as well as coordinates.	
Event	5	Rig-Up Equipment	Rig-Up Equipment	3/16/2023	11:30:00	USER						Begin rig up with crew.
Event	6	Rig-Up Completed	Rig-Up Completed	3/16/2023	11:45:00	USER	8.23	0.00	-26.99	0.00	0.0	Complete rig up for job to nearest point before red zone.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/16/2023	11:45:00	USER	8.23	0.00	-26.99	0.00	0.0	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
Event	8	Start Job	Start Job	3/16/2023	11:55:06	NONE	8.27	0.00	-0.79	0.00	0.0	TD-613', TP-603' 13.375" 54.5#, FC-555', OH-17.5", Cond.-145' 20# 19.5" ID, MUD-8.7#
Event	9	Pump Cement	Pump Cement	3/16/2023	12:01:34	NONE	8.27	0.00	-2.55	0.00	0.0	Pumped 567sks or 116bbbls of 14.2# 1.15y 5.74g/s SwiftCem at 4bpm 100psi.
Event	10	Check Weight	Check Weight	3/16/2023	12:10:36	NONE	13.97	6.01	358.17	25.94	899.5	Weight verified with pressurized mud scales.
Event	11	Check Weight	Check Weight	3/16/2023	12:13:16	NONE	14.22	4.22	227.19	38.91	1256.7	Weight verified with pressurized mud scales.

Event	12	Check Weight	Check Weight	3/16/20 23	12:21:3 3	NONE	14.25	5.93	344.63	87.67	2603.3	Weight verified with pressurized mud scales.
Event	13	Shutdown	Shutdown	3/16/20 23	12:26:0 6	NONE	14.79	0.00	132.18	110.70	3119.1	
Event	14	Drop Top Plug	Drop Top Plug	3/16/20 23	12:31:4 4	NONE	14.66	0.00	9.51	110.70	3184.1	Dropped by tool hand witnessed by HES supervisor and company man.
Event	15	Pump Displacement	Pump Displacement	3/16/20 23	12:31:4 6	NONE	14.66	0.00	9.30	0.00	0.0	Displaced first 10bbbls with cement water, followed by 76bbbls fresh water, total 86bbbl displacement.
Event	16	Shutdown	Shutdown	3/16/20 23	13:01:1 9	NONE	8.30	0.00	-16.39	96.70	3831.0	Due to not bumping plug.
Event	17	Other	Other	3/16/20 23	13:09:1 1	NONE	8.28	0.00	-9.07	96.70	3831.0	Pumped 86bbbls of fresh water to try and pump plug. No success.
Event	18	Shutdown	Shutdown	3/16/20 23	13:29:3 2	NONE	8.28	0.00	107.51	87.56	3677.6	Wait on co rep decision to move forward.
Event	19	Drop Top Plug	Drop Top Plug	3/16/20 23	13:39:3 7	NONE	8.26	0.00	-13.75	0.00	0.0	Second top plug Dropped by tool hand witnessed by HES supervisor and company man.

Event	20	Pump Displacement	Pump Displacement	3/16/2023	13:39:39	NONE	8.26	0.00	-13.76	0.00	0.0	Pumped additional 86bbls fresh water at 10bpm to try and seat plug. no success.
Event	21	Shutdown	Shutdown	3/16/2023	13:51:08	USER	8.25	0.29	78.58	94.22	3735.2	Decided to pull casing and find issue to resolve correctly. Wait on rig.
Event	22	Start Job	Start Job	3/16/2023	19:22:50	NONE	8.26	0.00	-0.47	0.00	0.0	Second 1st stage cement start.
Event	23	Test Lines	Test Lines	3/16/2023	19:26:02	NONE	8.32	0.00	36.45	3.19	0.0	Pumped 5bbls 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	24	Pump Cement	Pump Cement	3/16/2023	19:29:24	NONE	8.26	0.00	23.55	0.00	133.4	Pumped 567sks or 116bbls of 14.2# 1.15y 5.74g/s SwiftCem at 4bpm 100psi.
Event	25	Check Weight	Check Weight	3/16/2023	19:37:33	NONE	15.32	3.08	117.94	15.98	743.8	Weight verified with pressurized mud scales.

Event	26	Check Weight	Check Weight	3/16/20 23	19:43:4 1	NONE	14.46	4.17	213.55	42.46	1365.6	Weight verified with pressurized mud scales.
Event	27	Check Weight	Check Weight	3/16/20 23	19:57:0 2	NONE	14.10	4.17	198.62	98.60	2710.5	Weight verified with pressurized mud scales.
Event	28	Shutdown	Shutdown	3/16/20 23	20:02:1 4	NONE	16.06	0.00	133.41	119.55	3107.8	
Event	29	Drop Top Plug	Drop Top Plug	3/16/20 23	20:05:1 3	NONE	15.74	0.00	18.73	119.55	3157.8	Dropped by tool hand witnessed by HES supervisor and company man.
Event	30	Pump Displacement	Pump Displacement	3/16/20 23	20:05:1 5	NONE	15.74	0.00	18.91	0.00	0.0	Slowed down to 3bpm at 76bbls away, final circulating pressure-40psi, Bump Pressure 550psi.
Event	31	Bump Plug	Bump Plug	3/16/20 23	20:27:4 4	NONE	8.40	0.00	449.41	85.82	3803.6	Inflate packer to 850, 980psi until opened at 1085psi and fell to 929psi
Event	32	Other	Other	3/16/20 23	20:32:4 1	NONE	8.42	0.00	960.91	86.16	3826.8	Inflate packer to 850, 980psi until opened at 1085psi and fell to 929psi
Event	33	Other	Other	3/16/20 23	20:34:3 4	NONE	8.41	0.00	893.61	86.16	3826.8	Released pressure to 460psi, 1/4bbl back.

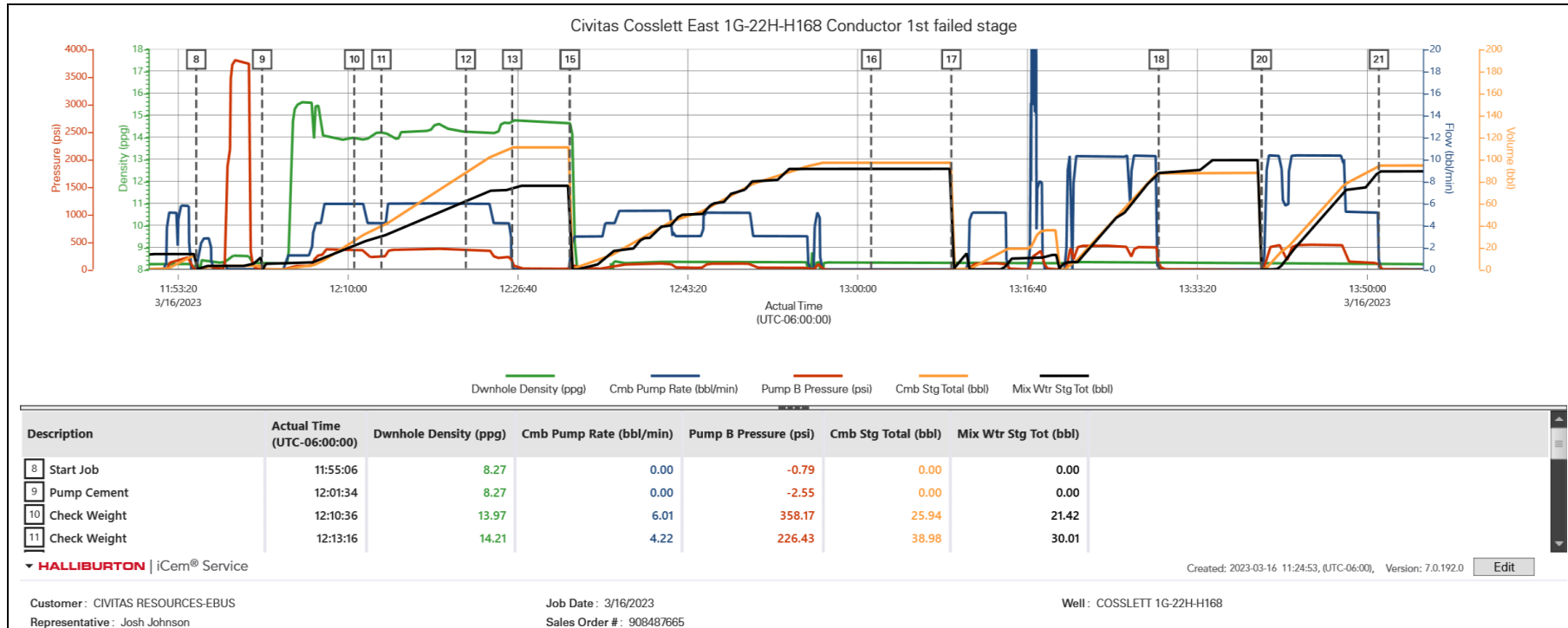
Event	34	Other	Other	3/16/20 23	20:36:5 5	NONE	8.42	0.00	916.13	86.42	3838.9	Brought pressure up to 850psi, 1140psi, released to 1326psi, dropped to 600psi. Closed at 1060psi. released to 950psi getting 3/4bbl back.
Event	35	Other	Other	3/16/20 23	20:44:5 8	NONE	8.42	0.00	1058.42	87.28	3838.9	Released pressure and got 1.5bbls back, floats held.
Event	36	Other	Other	3/16/20 23	20:48:0 0	NONE	8.31	0.00	2.19	87.28	3838.9	2nd stage DV TOOL-306', Upper PACKER-309', Lower PACKER-545.8', OH-17.5", Conductor 145' 19.5" ID, MUD-8.7#
Event	37	Drop Ball	Drop Ball	3/16/20 23	20:56:0 7	NONE	-1.12	0.00	-1.30	0.00	0.0	Dropped Bomb Opened Tool at 1bpm to 360psi, 1bbl to open. Pumped additional 50bbls fresh water at 5bpm to ensure circulation and circulate bottoms up.
Event	38	Pump Cement	Pump Cement	3/16/20 23	21:11:1 9	NONE	8.36	0.00	4.56	0.00	0.0	Pumped 353sks or 72.4bbl of 14.2# 1.15y 5.74g/s SwiftCem at 5bpm 110psi.

Event	39	Check Weight	Check Weight	3/16/20 23	21:22:0 0	NONE	14.04	3.05	154.94	11.21	516.1	Weight verified with pressurized mud scales.
Event	40	Check Weight	Check Weight	3/16/20 23	21:24:0 6	NONE	14.13	2.99	147.01	17.54	689.2	Weight verified with pressurized mud scales.
Event	41	Shutdown	Shutdown	3/16/20 23	21:35:5 1	NONE	14.60	0.00	62.30	78.84	2217.9	
Event	42	Pump Displacement	Pump Displacement	3/16/20 23	21:39:5 0	NONE	14.35	0.00	18.10	0.00	0.0	Displaced first 10bbls with cement water, followed by 37bbls fresh water, total of 47bbls Fresh water Displacement.
Event	43	Drop Top Plug	Drop Top Plug	3/16/20 23	21:39:5 7	NONE	14.34	0.00	17.14	0.00	0.0	Dropped by tool hand witnessed by HES supervisor and company man.
Event	44	Bump Plug	Bump Plug	3/16/20 23	21:53:1 9	NONE	8.39	0.00	1115.47	47.49	2054.0	Slowed down to 3bpm at 36bbls away, final circulating pressure-110psi, Bump Pressure 620psi.
Event	45	Other	Other	3/16/20 23	21:56:1 7	NONE	8.38	0.00	1217.85	47.49	2056.0	Released pressure and got 1.5bbls back, floats held.
Event	46	End Job	End Job	3/16/20 23	21:57:5 3	NONE	8.27	0.00	4.68	0.00	0.0	Got 25bbls cement to surface.

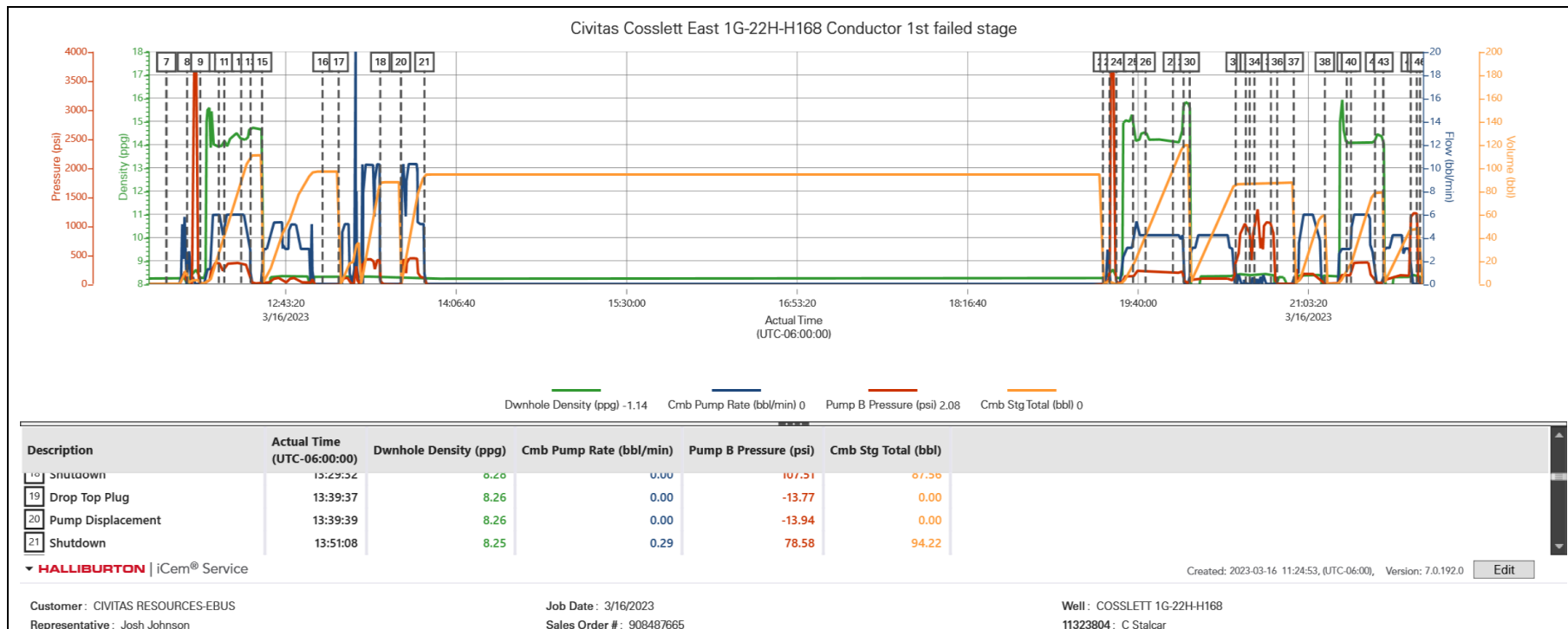
Event	47	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/16/2023	22:00:00	USER	8.26	0.00	2.39	0.00	60.5	Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
Event	48	Rig Down Lines	Rig Down Lines	3/16/2023	22:15:00	USER						Begin rig down
Event	49	Rig-Down Completed	Rig-Down Completed	3/16/2023	22:30:00	USER						Rig down complete with no injuries, spills or damage to equipment.

3.0 Attachments

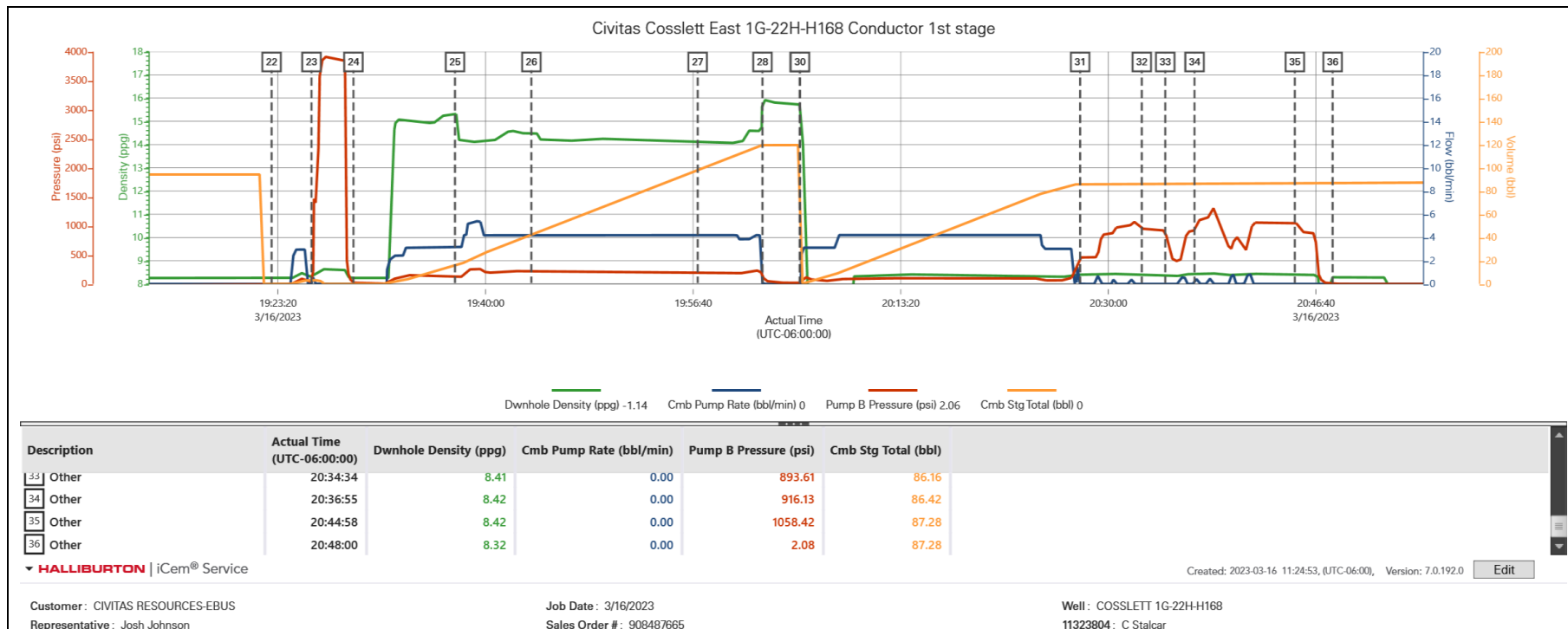
3.1 1st failed stage .png



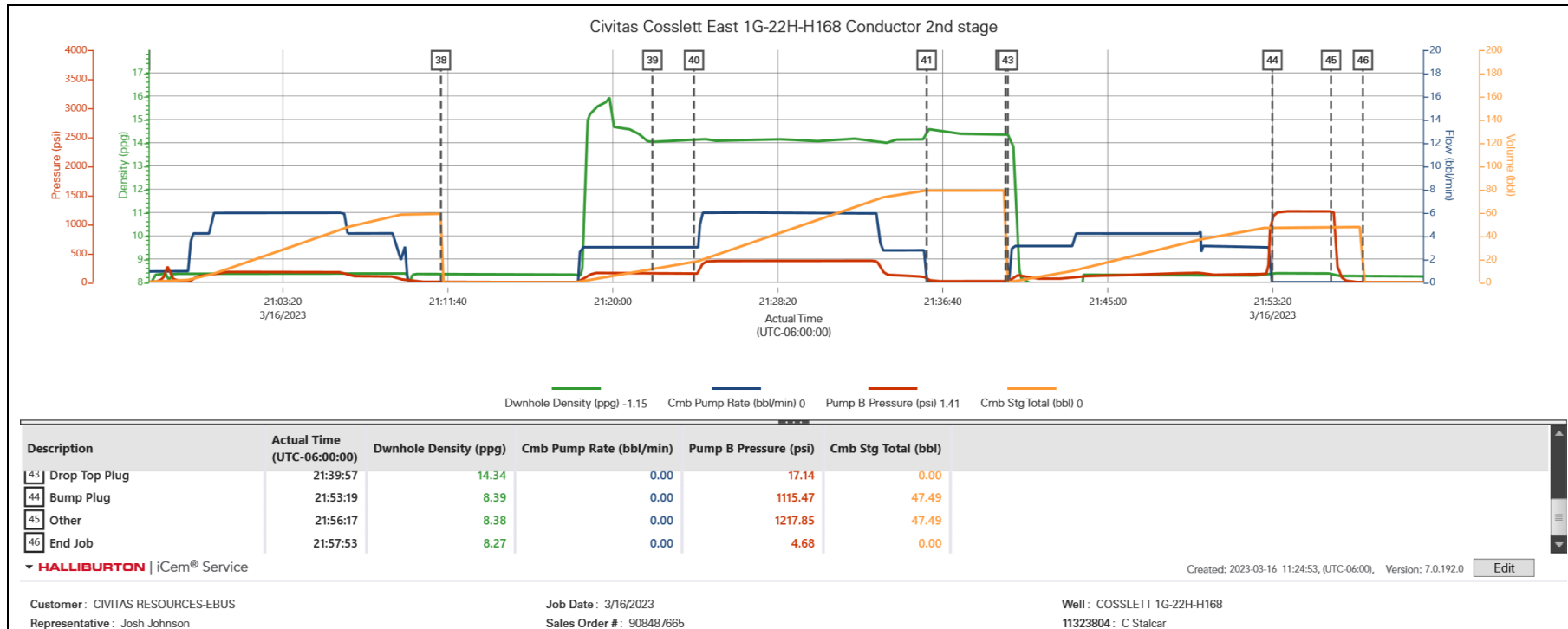
3.2 COSSLETT 1G-22H-H168-Custom Results.png



3.3 1st stage .png



3.4 2nd lstage .png



3.5 COSSLETT 1G-22H-H168-Custom Results (1).png

