

# HALLIBURTON

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## **CIVITAS RESOURCES-EBUS**

Ft. Lupton District, CO

**For: Civitas Resources**

Date: Friday, August 16, 2024

**Lussing Trust 4-64 19-20 2AH – 5.5in Production Casing**

**API: 05-005-07565**

Job Date: Wednesday, August 14, 2024

Sincerely,

**William Mix & Juan H Martinez**

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Lussing Trust 4-64 19-20 2AH 5.5 CMT 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.

**This space is provided to enter in a brief summary of the job. Below are some important items to discuss:**

- **Quality of circulation – Prejob 95% , While pumping Cement 95%, While Pumping Displacement 95%**
- **Final Circulating Pressure 2600 and Pump Rate 4BPM**
- **Returns to Surface 54BBLs**
- **Any deviation from plan NO**
- **Abnormalities on job chart NO**

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 #:	05-005-07565-00
City, County:	Watkins, Arapahoe
SO#:	909523033

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	8/14/24	1100
Called Out Time:	8/14/24	0600
Arrived On Location:	8/14/24	1000
Job Started:	8/14/24	1558
Job Completed:	8/14/24	1913
Departed Location:	8/14/24	2100

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	65
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.2
4	Casing set depth (shoe)	ft	18,155
5	TVD	ft	7,629
6	Float collar depth	ft	18,150
7	Length of rate hole	ft	30
8	Previous casing shoe depth	ft	3,335
9	Pre-job mud circulation time	hh:mm	2:00
10	Pre-job mud circulation rate	bpm	11

11	Pre-job mud circulation volume	bbls	750
12	Mud circulation pressure at start of cement	psi	300
13	Annual flow before the start of job	Y/N	Y
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	402.9
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	95
18	Fluid returns to surface	Spacer/Cement, bbls	54 CMT
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2600
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1
22	Number of trucks used preparing/during job	-	11
23	Add hours? If Yes, put #	Y/N and hours	N
24	NPT? If Yes, put #	Y/N and hours	N

### 1.3 Water Field Test

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	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
<b>pH</b>	7		6.0 - 8.0	Chemicals in water can cause severe retardation
<b>Temperature</b>	65	F	60 - 80 F	Can can pre-mature setting of cement
<b>Chlorides</b>	800	ppm	3000 ppm	Can shorten thickening time

### 1.4 Actual Pump Schedule

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#### Stage 1

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
<b>Spacer Fluid</b>	11.5	120	2.57	16.2		4247
<b>Cap Cement</b>	13	198.3	1.65	8.02	675	5413
<b>Lead Cement</b>	13	185.7	1.58	7.38	660	4870
<b>Tail Cement</b>	13.2	434.8	1.56	7.5	1565	11732
<b>Top Plug</b>	1	1				
<b>Displacement Fluid</b>	8.33	402				

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Pump A Pressure <i>(psi)</i>	Dwnhole Density <i>(ppg)</i>	Cmb Pump Rate <i>(bbl/min)</i>	Cmb Stg Total <i>(bbl)</i>	Pump B Pressure <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	8/14/2024	06:00:00	USER						Call out
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/14/2024	08:45:00	USER						Pre-Convoy Safety Meeting
Event	3	Crew Leave Yard	Crew Leave Yard	8/14/2024	09:00:00	USER						Crew Leave Yard
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	8/14/2024	10:00:00	USER						Arrive at Location from Service Center
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/14/2024	10:30:00	USER						Pre-Rig Up Safety Meeting, Be aware of your surroundings, Use two spotters one in front and one in back of vehicle, Utilize hearing protection, Have good communication and make sure Line of Fire is clear before swinging hammer

Identify points were hand/finger can get crushed

Event	6	Rig-Up Equipment	Rig-Up Equipment	8/14/2024	10:40:00	USER							Rig Up equipment as far as possible, Rig running casing
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/14/2024	15:30:24	USER		9.00					Safety Meeting-Pre job, Eyes on task Use impact gloves Have good communication to identify pinch points between steel hoses, iron and drill pipe and while making up the hammer unions. Identify points were hand/finger can get crushed
Event	8	Start Job	Start Job	8/14/2024	15:56:39	NONE	4.66	9.01	0.00	0.00	2.01		Start of cement job. Beginning of recording.
Event	9	Drop Bottom Plug	Drop Bottom Plug	8/14/2024	15:57:57	NONE		8.81					Dropped bottom plug with Josh and Driller.
Event	10	Test Lines	Test Lines	8/14/2024	15:58:59	NONE		8.31					Filled HES lines with 3BBLs of fresh water

													and Pressure tested to 6000PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	8/14/2024	16:03:27	NONE		8.39					Pumped 120BBLs of 11.5PPG Tuned Prime Spacer. Pumped at a rate of 6BPM with a pressure of 300PSI.
Event	12	Pump Cap Cement	Pump Cap Cement	8/14/2024	16:24:37	NONE	245.12	13.16	6.62	0.11	235.45		Pumped 675s / 198.3BBLs of 13PPG Elasticem Cap cement. Pumped at a rate of 8BPM with a pressure of 500PSI. Pre job calculated 54.4BBLs of cap to surface.
Event	13	Pump Lead Cement	Pump Lead Cement	8/14/2024	16:51:00	USER	503.59	12.94	8.44	204.37	525.00		Pumped 660s / 185.7BBLs of 13PPG Isobond Lead cement. Pumped at a rate of 8BPM with a pressure of 670PSI. PRe job calculated TOL cement was at 2,945.81FT
Event	14	Pump Tail Cement	Pump Tail Cement	8/14/2024	17:15:47	NONE	659.87	12.94	8.46	0.07	676.15		Pumped 1565s / 434.8BBLs of Elasticem Tail cement. Pumped at a rate of 8BPM with a pressure of 550PSI. Pre job calculated TOT

												cement was at 7,497.819FT.
Event	15	Shutdown	Shutdown	8/14/2024	18:10:16	NONE	166.85	13.95	0.00	450.19	143.23	Shutdown to wash up and drop plug.
Event	16	Clean Lines	Clean Lines	8/14/2024	18:11:36	NONE	38.10	13.97	0.00	450.19	9.57	Washed pumps and lines with 15BBLs of fresh water.
Event	17	Drop Top Plug	Drop Top Plug	8/14/2024	18:17:45	NONE	28.59	7.56	0.00	12.49	-0.02	Dropped top plug with Manny and driller.
Event	18	Pump Displacement	Pump Displacement	8/14/2024	18:17:48	NONE	28.23	7.55	0.00	0.00	-0.56	Pumped 402BBLs of fresh water displacement. First 20 bbls had MMCR inside. Rest of displacement pumped with Biocide throughout.
Event	19	Bump Plug	Bump Plug	8/14/2024	19:09:36	NONE	3122.25	8.35	0.00	395.37	3092.01	Bumped plug. FCP-2600PSI BMP - 3200PSI. 54BBLs CMT back.
Event	20	End Job	End Job	8/14/2024	19:11:37	NONE	88.73	8.14	0.00	395.37	39.61	END OF JOB.
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/14/2024	20:30:00	USER						Pre-Rig Down Safety Meeting
Event	22	Rig-Down Equipment	Rig-Down Equipment	8/14/2024	20:40:00	USER						Rig-Down Equipment
Event	23	Depart Location Safety Meeting	Depart Location Safety Meeting	8/14/2024	21:00:00	USER						Depart Location Safety Meeting, Verify all

equipment has been thoroughly pre-tripped. All safety and quality issues should be resolved before proceeding.

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Event	24	Crew Leave Location	Crew Leave Location	8/14/2024	21:10:00	USER	Crew leave location
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3.0 Attachments

Civitas- Patterson 572 - Lussing Trust 19-20 2AH- 5.5in Production Casing – Job Summary

