

HALLIBURTON

iCem[®] Service

CIVITAS RESOURCES-EBUS

For: JOSH KLIESEN

Date: Monday, January 15, 2024

WATKINS 4-64 30-29

CIVITAS - WATKINS 4064 30-29 3AH

Job Date: Monday, January 15, 2024

Sincerely,

ANDREW GLOVER

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **WATKINS 4064 30-29 3AH- 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 100% , While pumping Cement 100%, While Pumping Displacement 100%**
- **Final Circulating Pressure and Pump Rate 2500 PSI @ 4 BPM**
- **Returns to Surface 30 BBLS CEMENT**
- **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 #:	5-005-07550-00
City, County:	TKINS, ARAPAHOE
SO#:	909094997

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	1/15/24	10:00
Called Out Time:	1/15/24	4:00
Arrived On Location:	1/15/24	8:50
Job Started:	1/15/24	13:45
Job Completed:	1/15/24	18:20
Departed Location:	1/15/24	19:45

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	-6
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9
4	Casing set depth (shoe)	ft	18073
5	TVD	ft	7692
6	Float collar depth	ft	18068
7	Length of rate hole	ft	5
8	Previous casing shoe depth	ft	3282
9	Pre-job mud circulation time	hh:mm	1:30
10	Pre-job mud circulation rate	bpm	13

11	Pre-job mud circulation volume	bbls	1170
12	Mud circulation pressure at start of cement	psi	1120
13	Annual flow before the start of job	Y/N	N
14	Pipe movement during cement job	Y/N	N
15	Calculated displacement	bbls	401
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	CEMENT,30 BBLS
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2500 @ 4
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1
22	Number of trucks used preparing/during job	-	2
23	Add hours? If Yes, put #	Y/N and hours	1
24	NPT? If Yes, put #	Y/N and hours	N

1.3 Water Field Test

	Recorded Value	Unit	Acceptable Limit	Potential Problems if Values Exceed the Limit
pH	6		6.0 - 8.0	Chemicals in water can cause severe retardation
Temperature	75	F	60 - 80 F	Can can pre-mature setting of cement
Chlorides	0	ppm	3000 ppm	Can shorten thickening time

1.4 Actual Pump Schedule

Stage 1

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	11.5	120	2.57	16.2	262	4242
Cap Cement	13	204	1.65	8.07	695	5607
Lead Cement	13	159	1.58	7.42	565	4200
Tail Cement	13.2	454	1.57	7.5	1625	12180
Top Plug						
Displacement Fluid	8.4	401				16842

Stage 2

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid						
Cap Cement						
Lead Cement						
Tail Cement						
Top Plug						
Displacement Fluid						

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	Cmb Pump Rate (bbl/min)	Dwnhole Density (ppg)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
Event	1	Summit Crew Notified Date/Time	Crew Notified Date/Time	1/15/20 24	04:00:1 7	USER					Crew called out for CIVITAS Production
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/15/20 24	06:30:1 8	USER					Discussed route and possible hazards
Event	3	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/15/20 24	07:00:2 1	USER					Depart yard w/ 1 pump, 660, 1 pickup and 4 personnel.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	1/15/20 24	08:50:2 2	USER					Requested on location @ 1000
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	1/15/20 24	09:00:2 3	USER					Discussed location and possible hazards. Water test: Temp - 75, Chlorides - 0, PH - 6, Sulfates - <200. 8 1/2 TD @ 18077'. Production casing set @ 18073'. 5.5" 20# P110, ST - 5' .0222 bbl/ft. CSG/OH - .0408 bbl/ft. CSG/CSG - .0479 bbl/ft. 9 5/8" 36# J55 set @ 3282'.

TVD @ 7692'. Mud Weight - 9ppg

Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	1/15/20 24	09:15:2 7	USER						Discussed rig up and possible hazards.
Event	7	Rig-up Lines	Rig-up Lines	1/15/20 24	09:30:2 9	USER						Rig up equipment
Event	8	Casing on Bottom	Casing on Bottom	1/15/20 24	12:00:1 2	USER						
Event	9	Circulate Well	Circulate Well	1/15/20 24	12:40:1 3	USER	0.00	0.00	-0.77	0.00		Rig circulating well 13 bpm @ 1120 psi
Event	10	Safety Meeting - Pre Job	Safety Meeting - Pre Job	1/15/20 24	13:40:1 4	USER		0.00				Discussed job and possible hazards with everyone on location.
Event	11	Start Job	Start Job	1/15/20 24	14:01:2 5	NONE		8.28				
Event	12	Pump Spacer 1	Fill Lines	1/15/20 24	14:03:1 6	USER	0.00	8.86	39.76	0.07		Pumped 3 bbls of FW
Event	13	Drop Bottom Plug	Drop Bottom Plug	1/15/20 24	14:04:2 2	USER	2.43	8.68	371.07	1.10		
Event	14	Pressure Test	Pressure Test	1/15/20 24	14:05:2 1	USER	0.00	8.29	257.12	3.14		Test lines to 6500 psi
Event	15	Pump Spacer 1	Pump Tuned Spacer	1/15/20 24	14:10:2 4	USER	0.00	7.87	12.30	0.00		Pumped 120 bbls of 11.5 ppg of Tuned Spacer. 2.57 cuft/sk and 16.2 gal/sk. Verified weight with pressurized mud scales.

Event	16	Check Weight	Check Weight	1/15/20 24	14:25:2 2	NONE	5.65	11.58	154.39	72.05	
Event	17	Pump Lead Cement	Pump Cap Cement	1/15/20 24	14:31:3 6	USER	5.65	10.99	128.74	0.24	Pumped 204 bbls of 13 ppg Elasticem. 695 sks, 1.65 cuft/sk, and 8.07 gal/sk. Verified weight with pressurized mud scales.
Event	18	Check Weight	Check Weight	1/15/20 24	14:35:4 3	NONE	6.02	13.02	372.02	24.75	
Event	19	Pump Lead Cement	Pump Lead Cement	1/15/20 24	15:09:2 2	USER	7.79	12.96	443.16	283.25	Pumped 159 bbls of 13 ppg Isobond cmt. 565 sks, 1.58 cuft/sk, and 7.42 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 3083.67'
Event	20	Check Weight	Check Weight	1/15/20 24	15:16:2 2	NONE	7.88	13.12	633.16	49.97	
Event	21	Pump Tail Cement	Pump Tail Cement	1/15/20 24	15:26:1 0	USER	7.55	12.97	555.05	125.76	Pumped 454 bbls of 13.2 ppg Elasticem. 1625 sks, 1.57 cuft/sk, and 7.5 gal/sk. Verified weight with pressurized mud scales. Estimated TOC @ 6945.55'
Event	22	Check Weight	Check Weight	1/15/20 24	15:42:5 8	NONE	7.88	13.22	518.86	38.89	
Event	23	Shutdown	Shutdown/Flush Lines	1/15/20 24	17:09:1 2	USER	0.00	17.48	92.35	587.19	

Event	24	Drop Top Plug	Drop Top Plug	1/15/20 24	17:20:1 3	USER	0.00	8.29	16.64	27.32	3rd party rupture plug
Event	25	Pump Displacement	Pump Displacement	1/15/20 24	17:21:1 8	USER	0.00	8.24	33.99	0.00	Pumped 401 bbls of displacement. 1st 20 bbls FW w/ MMCR FW w/ Chemicals
Event	26	Bump Plug	Bump Plug	1/15/20 24	18:15:2 0	USER	0.00	8.25	3058.71	394.74	Bump plug 2500 - 3000 psi
Event	27	End Job	End Job	1/15/20 24	18:17:1 9	NONE	0.00	8.08	-8.62	394.74	Got 30 bbls of cement back to surface
Event	28	Check Floats	Check Floats	1/15/20 24	18:17:2 1	USER					Floats are good. Got 4 bbls back.
Event	29	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/15/20 24	18:25:2 8	USER	0.00	-0.20	-27.98	394.74	
Event	30	Rig-Down Equipment	Rig-Down Equipment	1/15/20 24	18:35:2 9	USER					
Event	31	Depart Location Safety Meeting	Depart Location Safety Meeting	1/15/20 24	19:30:3 1	USER					
Event	32	Depart Location	Depart Location	1/15/20 24	19:45:3 2	USER					Thank you for using Halliburton cement. Andrew Glover and crew.

3.0 Attachments

3.1 CIVITAS - WATKINS 4064 30-29 3AH-Custom Results.png

