

# HALLIBURTON

iCem<sup>®</sup> Service

## **CRESTONE PEAK RESOURCES-EBUS**

Ft. Lupton District, Colorado

**Cosslett East 1F-22H-H168 Production**

Job Date: Monday, May 01, 2023

Sincerely,

**Meghan Van Zyl**

## Legal Notice

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### Disclaimer:

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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 **Cosslett East 1F-22H-H168 - 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 30 bbls of spacer 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 #:	05-123-51950
City, County:	Erie, Weld County

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	05/01/2023	05:00
Called Out Time:	04/30/2023	23:00
Arrived On Location:	05/01/2023	02:30
Job Started:	05/01/2023	10:54
Job Completed:	05/01/2023	14:55
Departed Location:	05/01/2023	17:00

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	55
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	8.6
4	Casing set depth (shoe)	ft	18921
5	TVD	ft	8013
6	Float collar depth	ft	18916
7	Length of rate hole	ft	10
8	Previous casing shoe depth	ft	2578
9	Pre-job mud circulation time	hh:mm	01:30
10	Pre-job mud circulation rate	bpm	10
11	Pre-job mud circulation volume	bbls	850

12	Mud circulation pressure at start of cement	psi	230
13	Annual flow before the start of job	Y/N	Yes
14	Pipe movement during cement job	Y/N	No
15	Calculated displacement	bbls	418.00
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	75
18	Fluid returns to surface	Spacer/Cement, bbls	30 spacer
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2320
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1

### 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>	200	ppm	3000 ppm	Can shorten thickening time

### 1.4 Actual Pump Schedule

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	Density (ppg)	Volume (bbls)	Yield (ft <sup>3</sup> /sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
<b>Spacer Fluid</b>	11.5	120	3.83	24.17		4252
<b>Cap Cement</b>	13	169	1.64	7.96	580	4616
<b>Lead Cement</b>	13	239	1.57	7.32	855	6258
<b>Tail Cement</b>	13.2	433	1.56	7.52	1560	11731
<b>Top Plug</b>	1					
<b>Displacement Fluid</b>	8.33	418				

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	4/30/2023	23:00:00	Crew called out at 2300 on 4/30/2023 for a requested-on location time of 0500 on 5/1/2023.
2	Safety Meeting	5/1/2023	01:50:00	Pre convoy safety meeting discussed route to location and hazards of driving at night.
3	Crew Leave Yard	5/1/2023	02:00:00	Crew Leaves yard in convoy at 0200 hrs.
4	Arrive At Loc	5/1/2023	02:30:00	Crew arrived on location at 0230 hrs. Meet with customer TD 18931', 8.5 OH, TP 18921 5.5' 20#, FC 18916', TVD 8016', P/C 2578' 9.625 36#, OBM WEIGHT 8.6 PPG.
5	Safety Meeting - Pre Rig-Up	5/1/2023	02:45:00	Discuss hazards around rig up area.
6	Rig-Up Completed	5/1/2023	04:45:00	Rig up completed.
7	Safety Meeting - Pre Job	5/1/2023	10:45:00	Pre job safety meeting discussed all hazards prior to job and reviewed job procedure.
8	Start Job	5/1/2023	10:54:53	Start Recording data.
9	Drop Bottom Plug	5/1/2023	10:54:57	Bottom plug verified by DSR.
10	Test Lines	5/1/2023	10:56:39	Pressure tested HES lines to 4600 psi, electronic kick outs working properly.
11	Pump Spacer 1	5/1/2023	11:09:14	Pumped 120.00 bbls of Tuned Prime spacer @11.5ppg/3.83ft3/24.17gal/sack. Pre calculated mix gallons was 4,252 gal. Average rate was 4.5bpm with 100 psi on the line.
12	Check Weight	5/1/2023	11:16:39	Weight verified by mud scales.

13	Pump Cap Cement	5/1/2023	11:37:09	Pumped 169.00 bbls (580.00 sks) of ElastiCem cap cement @13ppg/1.64ft3/7.96gal/sack. Pre calculated mix gallons was 4,616 gal. Average rate was 9bpm with 560 psi on the line. HOCC=2,901', TOCC= 1879'.
14	Pump Lead Cement	5/1/2023	11:57:18	Pumped 239.00 bbls (855.00 sks) of IsoBond lead cement @13ppg/1.57ft3/7.32gal/sack. Pre calculated mix gallons was 6,258 gal. Average rate was 9bpm with 700 psi. HOLC=8,758', TOLC= 2,901'.
15	Pump Tail Cement	5/1/2023	12:28:25	Pumped 433.00 bbls (1560.00 sks) of ElastiCem tail cement @13.2ppg/1.56ft3/7.52gal/sack. Pre calculated mix gallons was 11,731 gal. Average rate was 9 bpm with 900 psi on the line. TOTC= 8,758'.
16	Check Weight	5/1/2023	12:29:39	Weight verified by mud scales.
17	Shutdown	5/1/2023	13:27:47	Shutdown to swap over to wash up pit.
18	Clean Lines	5/1/2023	13:29:38	Washed pumps and lines with 15 bbls of water.
19	Drop Top Plug	5/1/2023	13:35:56	Top plug verified by DSR.
20	Pump Displacement	5/1/2023	13:35:58	Pumped 418.00 bbls of freshwater displacement @6bpm. First 20 bbls added 10 gal of MMCR and 10 Gal of bellacide threw out provided by rig.
21	Bump Plug	5/1/2023	14:53:03	FCP @3bpm was 2320 psi, bumped up to 2920 psi.
22	Other	5/1/2023	14:55:47	4.5 bbls back to pump truck floats holding. 30 bbls of spacer to surface.
23	End Job	5/1/2023	14:55:50	Stop recording data.
24	Safety Meeting - Pre Rig-Down	5/1/2023	15:00:00	Discuss blow down and any new hazards that could have come up during job.
25	Rig-Down Completed	5/1/2023	16:30:00	Rig down completed.
26	Pre-Convoy Safety Meeting	5/1/2023	16:45:00	Fit for duty check and check road conditions.
27	Crew Leave Location	5/1/2023	17:00:00	Crew departs location. Thank you for using Halliburton.

3.0 Attachments

3.1 Real Time iCem Job Chart

