

HALLIBURTON

iCem[®] Service

Crestone Peak Resources

Ft. Lupton District, Colorado

COSSLETT EAST 1J-22H-H168 PRODUCTION

Job Date: Wednesday, May 17, 2023

Sincerely,

Rafael Giorgana

Legal Notice

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2.0 Cementing Job Summary

2.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Cosslett East 1J-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 55 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

2.2 Job Overview

Job Details	
API #:	0512351947
City, County:	Dacono, Weld County

Job Times		
	Date (mm/dd/yyyy)	Time (hh:mm)
Requested Time On Location:	05/16/2023	19:30
Called Out Time:	05/16/2023	14:00
Arrived On Location:	05/16/2023	18:30
Job Started:	05/16/2023	23:31
Job Completed:	5/17/2023	3:18
Departed Location:	5/17/2023	4:30

	Description	Units	Value
1	Surface temperature at the time of the job	degree F	60
2	Mud type (OBM, WBM, Synthetic, Water, Brine)	-	OBM
3	Mud density	ppg	9.1
4	Casing set depth (shoe)	ft	19555
5	TVD	ft	7907
6	Float collar depth	ft	19550
7	Length of rate hole	ft	2
8	Previous casing shoe depth	ft	2660
9	Pre-job mud circulation time	hh:mm	02:00
10	Pre-job mud circulation rate	bpm	10

11	Pre-job mud circulation volume	bbls	1000
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	432.00
16	Job displaced by	Rig/HES	HES
17	Estimated returns % during job	%	100
18	Fluid returns to surface	Spacer/Cement, bbls	120/55
19	Final circulation pressure, rate prior to plug bump	psi @ bpm	2400
20	Number of Centralizers	-	
21	Number of bottom plugs	-	1

2.3 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	200	ppm	3000 ppm	Can shorten thickening time

2.4 Actual Pump Schedule

	Density (ppg)	Volume (bbls)	Yield (ft3/sk)	Water Requirement (gal/sk)	Bulk Sacks (sks)	Total Water (gals)
Spacer Fluid	11.5	120	3.83	24.17		4252
Cap Cement	13	171	1.64	7.96	585	4656
Lead Cement	13	264	1.57	7.32	945	6917
Tail Cement	13.2	436	1.56	7.52	1570	11806
Top Plug	1					
Displacement Fluid	8.33	432				

3.0 Real-Time Job Summary

3.1 Job Event Log

Seq No.	Activity	Date	Time	Comments
1	Call Out	5/16/2023	14:00:00	Crew called out at 01400 on 5/16/2023 for a requested-on location time of 1930 on 5/16/2023.
2	Safety Meeting	5/16/2023	17:15:00	Pre convoy safety meeting discussed route to location and hazards of driving during rain storm.
3	Crew Leave Yard	5/16/2023	17:30:00	Crew Leaves yard in convoy at 1730 hrs.
4	Arrive At Loc	5/16/2023	18:30:00	Crew arrived on location at 1830 hrs. Meet with costumer TD 19557', 8.5 OH, TP 19555 5.5' 20#, FC 19550', TVD 7907', P/C 2660' 9.625 36#, OBM WEIGHT 9.1 PPG.
5	Safety Meeting - Pre Rig-Up	5/16/2023	18:45:00	Discuss hazards around rig up area.
6	Rig-Up Completed	5/16/2023	20:00:00	Rig up completed.
7	Safety Meeting - Pre Job	5/16/2023	23:20:00	Pre job safety meeting discussed all hazards prior to job and reviewed job procedure.
8	Start Job	5/16/2023	23:31:38	Start recording data.
9	Drop Bottom Plug	5/16/2023	23:32:04	Bottom plug verified by DSR.
10	Test Lines	5/16/2023	23:33:27	Pressure tested HES lines to 4900 psi, no leaks electronic kick outs working.
11	Pump Spacer 1	5/16/2023	23:37:14	Pumped 120.000 bbls of Tuned Prime spacer @11.5ppg/3.83ft3/24.17gal/sack. Pre calculated mix gallons was 4,252 gal. Average rate was 6 bpm with 300 psi on the line.
12	Check Weight	5/16/2023	23:43:09	Weight verified by mud scales.

13	Pump Cap Cement	5/17/2023	00:01:52	Pumped 171.00 bbls (585.00 sks) of ElastiCem Cap cement @13ppg/1.64ft3/7.96gal/sack. Pre calculated mix gallons was 4,656 gal. Average rate was 6bpm with 350 psi on the line. 55 bbls back to surface. HOCC=2,404'.
14	Check Weight	5/17/2023	00:19:03	Weight verified by Mud scales.
15	Pump Lead Cement	5/17/2023	00:27:26	Pumped 264.00 bbls (945.00 sks) of IsoBond Lead cement @13ppg/1.57ft3/7.32gal/sack. Pre calculated mix gallons was 6,917 gal. Average rate was 8.5 bpm with 600 psi on the line. HOLC=8,871' TOLC=2,404'.
16	Check Weight	5/17/2023	00:30:08	Weight verified by Mud scales.
17	Pump Tail Cement	5/17/2023	00:59:52	Pumped 436.00 bbls (1570.00 sks) of ElastiCem Tail cement @13.2ppg/1.56ft3/7.52gal/sack. Pre calculated mix gallons was 11,806 gal. Average rate was 8.5bpm with 850 psi on the line. TOTC=8,871
18	Check Weight	5/17/2023	01:04:17	Weight verified by Mud scales.
19	Shutdown	5/17/2023	01:55:32	Shutdown to swap over to wash up pit. Washed pumps and lines with 20 bbls of fresh water.
20	Pump Displacement	5/17/2023	02:10:41	Pumped 432.00 bbls of freshwater displacement with 10 gal of MMCR added in the first 20 bbls then 10 gal of biocide provided by rig, threw out displacement.
21	Bump Plug	5/17/2023	03:15:37	FCP @4bpm was 2400 psi, bumped up to 3000 psi.
22	Other	5/17/2023	03:18:12	4.5 bbls back to pump truck floats are holding.
23	End Job	5/17/2023	03:18:16	Stop recording data, washed rig stack with 40 bbls freshwater and added 100lbs of sugar.
24	Safety Meeting - Pre Rig-Down	5/17/2023	03:20:00	Discuss blow down and any new hazards that could have come up during job.
25	Rig-Down Completed	5/17/2023	04:20:00	Rig down completed.
26	Pre-Convoy Safety Meeting	5/17/2023	04:25:00	Fit for duty check and check road conditions.
27	Crew Leave Location	5/17/2023	04:30:00	Crew departs location. Thank you for using Halliburton

Attachments

3.2 Real Time iCem Job Chart

