

Cost Saving Solution for Low Bottom Hole Pressure Wells  
GeoSweep LCM replaces nitrogen with savings up to 10X

# GeoSweep LCM

GeoSweepLCM is a patent-pending “all-in-one” suspension aid, self-dissolving lost circulation material, and friction reducer that forms a temporary barrier to reduce/stop fluid loss to formation in well interventions that lack sufficient bottom hole pressure to support fluid circulation.

GeoSweepLCM is available in three particle sizes



GeoSweepLCM UltraFine

SIZE RANGE	MESH	MICRONS	INCHES
MAX	20	595	0.033
AVG	60	250	1.010
MIN	140	105	0.004



GeoSweepLCM Coarse

SIZE RANGE	MESH	MICRONS	INCHES
MAX	12	1680	0.033
AVG	30	595	1.010
MIN	100	149	0.004



GeoSweepLCM Flake

SIZE RANGE	MESH	MICRONS	INCHES
MAX	3	6730	0.265
AVG	14	1410	0.056
MIN	25	707	0.028

\*Slight size variation may exist between the minimum, average and maximum size distribution between different lots of product.

## The decomposition rate is both temperature and flow dependent

The proprietary GeoSweep LCM naturally breaks down at temperatures above 90F in the presence of water (fresh or formation fluid).

### Static ( No Flow) Decomposition (%wt)

60% @ 140 F in 220 hrs (9 days, 4 hrs)
80% @ 160 F in 150 hrs (6 days, 6 hrs)
95% @ 190 F in 80 hrs (3 days, 8 hrs)

### Dynamic Flow Decomposition (%wt)

50% @ 90 F in 24 hrs (1 day)
75% @ 90 F in 36 hrs (1 day, 12 hrs)
100% @ 90 F in 56 hrs (2 days, 8 hrs)

GeoSweepLCM can be used in new well completions, workovers, cleanouts, and any other low-bottom-hole pressure intervention procedures to reduce or even eliminate the cost, logistics, and procedural risks associated with nitrogen.

- **Easy to Mix** GeoSweepLCM is mixed in batches on surface as “pills” or “sweeps” and pumped as needed in order to maintain sufficient circulation of the fluid back to surface
- **Easy to Measure** The concentration and quantity of sweeps is determined by continuously monitoring the fluid returns to surface and applying sufficient GeoSweepLCM to maintain the desired circulating rate. Emerald Surf offers flow sensing and monitoring options that can be viewed on and off-site with the OpsViewer data-visualization platform.
- **Multi-Purpose Product** The soluble polymers in GeoSweepLCM not only keep the LCM material evenly distributed in the pill over long periods of time (days), but also provide fluid-on-pipe friction-reduction and pseudo-plastic rheology that makes the pill easy to handle on surface and easy to pump downhole.
- **Economic Advantages** This product works on wells that would have historically required nitrogen to maintain fluid flow, clean wellbore debris out of the well, and prevent stuck tubulars at a significantly lower cost and ease of use than nitrogen or alternative LCM fluid systems.



View from the top of the LCMT mixing GeoSweepLCM

- **LCMT** To deliver the GeoSweepLCM, ESS offers the LCMT blending tub to mix and deliver the LCM pill to the coiled-tubing unit or workover rig. The LCMT and GeoSweepLCM can work in conjunction with the FRCS unit or be independently deployed.
- **Dyno Tested** GeoSweepLCM Ultra Fine & GeoSweepLCM Coarse have been dyno-tested in Data Driven Downhole (D3) 2.88” and 3.125” motors with excellent results and caused little to no incremental wear or clogging in tests simulating 100 bbls of continuous recirculation at 2.5 BPM.

\*\*Special attention should be given to the clearances and tolerances of each component of the BHA prior to selecting the best product(s) for the job.

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