Hurricane Helene Devastated a High-Quality Quartz Mining Town — Here's How It Affects Everything From Smartphones to Semiconductors

Since Hurricane Helene made landfall on the Florida Gulf Coast on September 26, it has impacted six states and resulted in at least 230 deaths, making it the deadliest storm since Hurricane Katrina in 2005.

The storm swept away homes, destroyed towns, and flooded a major factory that supplies intravenous fluids to hospitals. It also devastated Spruce Pine, a 2,194-person mining town in North Carolina responsible for almost all of the world's supply of high-purity quartz, a mineral essential for the semiconductors used in smartphones, laptops, and AI chips.

Nvidia semiconductor chip on display. Photo Credit: I-Hwa Cheng/Bloomberg via Getty Images

Sibelco and The Quartz Corp. own the quartz mining operations in Spruce Pine. These two companies take the high-purity quartz mined in the area, refine it, and ship it out to manufacturers. The quartz then becomes a crucial building block for technology and ends up back in our hands within an iPhone or laptop.

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Spruce Pine received over two feet of rain from Hurricane Helene, causing Sibelco and The Quartz Corp. to stop operations on September 26. At the time of writing, it was unclear when the operations would resume.

“The initial assessment indicates that our operating facilities in the Spruce Pine region have only sustained minor damage,” Sibelco stated on October 3. “Detailed assessments are ongoing. Our dedicated teams are on-site, conducting cleanup and repair activities to restart operations as soon as we can.”

Spruce Pine is the only source of high-purity quartz in the U.S.; the town produces 90% of the mined and processed quartz used in electronics. Though Russia and Brazil have their own supplies of the mineral, “Spruce Pine has far and away the [largest amount] and highest quality,” economics expert Ed Conway told NPR.

Most semiconductors wouldn’t be functional without high-purity quartz, he stated.

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Dylan Patel, chief analyst at research firm SemiAnalysis, said in a post on X that the supply chain disruptions from the storm have been “exaggerated.” Companies have enough materials on hand, at least three months’ worth, to tide them over until mining operations resume. They also have ways of synthetically purifying minerals.

“High-purity quartz deposits are scarce, but purification methods exist even if they are time and resource intensive,” Patel wrote.

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