

# Impacts of Silica Mining

**Silica sand, also known as fracking sand, quartz sand, white sand, or industrial sand, is made up of two main elements: silica and oxygen. Specifically, silica sand is made up of silicon dioxide (SiO<sub>2</sub>). (Shaw Resources)**

## Location in Missouri and Primary Use

**Location:** Possible locations throughout the state

**Uses:** Used in the hydrologic fracturing (or fracking) process for natural gas.



Shaw Resources. What is Silica Sand and How Is It Different From Regular Sand? <https://shawresources.ca/what-is-silica-sand/>

## Health Effects

- Crystalline silica is a human carcinogen.
- Workers are at particular risk given direct and long-term exposure.
- The mining, transport, processing, and use of silica sand in the fracking process for natural gas create the air pollutants PM 2.5 and respirable crystalline silica. Respirable crystalline silica can cause major problems when inhaled, including lung-related diseases and kidney disease.

## Environmental Effects

- Mines disrupt the land's structure, natural drainage, depletion of ground water sources, stacking of mine waste, topsoil loss, degraded forests, and harm to aquatic life in nearby waterways.
- Removal of natural vegetation inherently disrupts the local ecosystem causing biodiversity loss.
- Large extraction of groundwater is often needed, lowering the local groundwater table. Additionally, mining activities, with the sites' lack of vegetation, can lead to surface erosion as well as buildup of mud, silt, and sand, which impacts the land's capacity to drain water and the nearby waterways' degradation from sedimentation.
- PM generated by silica mining and the mining waste accumulate on leaves of nearby plants, disrupting the plants' natural processes necessary for plant health.



Discover. (2019). The Midwestern Sand Mines Feeding the Fracking Industry. <https://www.discovermagazine.com/environment/the-midwestern-sand-mines-feeding-the-fracking-industry/what-is-silica-sand/>

### Sources:

- Health Effects of Particulate Matter and Silica Exposure, UW-Eau Claire, <https://www.uwec.edu/academics/college-arts-sciences/departments-programs/watershed-institute/explore-opportunities/sand-mining-research/impact-silica/health-effects/#> (last visited December 8, 2022).
- Anna Lin-Schweitzer, Integrated effort needed to mitigate fracking while protecting both humans and the environment (2022), <https://ysph.yale.edu/news-article/integrated-effort-needed-to-mitigate-fracking-while-protecting-both-humans-and-the-environment/#>.

**Protect Missouri's people and environment.**