

See How Close You Live to the 'Threat Radius' of an Oil & Gas Site

More than 17 million Americans live near an active upstream facility that could cause health problems, as a new interactive map illustrates.

More than 17 million Americans, including nearly 4 million children, are currently living within half a mile (0.8 kilometers) of an active upstream oil and gas facility and could be at risk of health impacts, an exhaustive new geospatial analysis released Tuesday finds. An updated [interactive map](#), called the Oil and Gas Threat Map, released in conjunction with the analysis, allows people to view specific data on facilities that may be near their homes or their children's schools.

The tool is being released as the U.S. Environmental Protection Agency prepares to strengthen its [rules](#) around methane pollution and other air pollution related to oil and gas production, as well as to create a [supplemental rule](#) to impose even more regulations on common oil and gas production techniques like [venting and flaring](#), which create air pollution.

"This map gives the president 17 million more reasons—living, breathing reasons—to make sure that his EPA finalizes the strongest rules possible under the Clean Air Act to cut oil and gas methane and to work to end the extraction of fossil fuels," Josh Eisenfeld, a campaigner at Earthworks, said on a press call Tuesday.

The analysis finds that this half-mile radius for possible health impacts encompasses 212,747 square miles (551,012 square kilometers)—bigger

than twice the size of the state of Colorado—and includes an estimated 17,295,499 people, including 5,723,805 people of color, living within this radius. That huge swath of the country also includes 12,445 schools, enrolling some 3,185,097 students.

Both the map and analysis, created by advocacy organizations Earthworks and FracTracker, use data on active upstream oil and gas facility locations, including wells, compressors, and processors, sourced from state government agencies in 2020 and 2021. The researchers then compared the map of sites to population statistics calculated by Census Bureau data to estimate how many people live within a half-mile radius of each site. The researchers also used Department of Education data to record the number of K-12 schools within this radius.

The half-mile radius used in the tool, which researchers call the “health threat radius,” was [developed](#) based on an analysis of several different peer-reviewed studies that link proximity to oil and gas sites with health impacts like birth defects, infant mortality, preterm births, blood disorders, and

elevated cancer risks. While methane emissions from oil and gas production have been [connected to decreased air quality](#), there's a whole host of other air pollutants that come from upstream production that cause direct harm on human health—including benzene, which causes a terrifying laundry list of problems, including blood disease and cancers.

“Benzene levels are considerably elevated around oil and gas sites, and this threat extends out much further than most cities and states have as their setback distances,” Anne Epstein, a fellow of the American College of Physicians and a professor at Texas Tech University Health Sciences Center, said on the call.

It's important to note that the radius does not necessarily mean that health impacts *will* occur within a half-mile of oil and gas facilities. The studies used in the analysis focus on populations living between 0.1 miles and 2 miles away from oil and gas facilities; the half-mile “threat radius,” the authors note, was developed from looking at this group of studies. What's more, many of these studies used in the analysis focus on leaks, blowouts, and other accidents; there's less peer-reviewed research on the direct impacts of routine air pollution that comes merely from living *near* a site.

Even with these caveats, using the map is a mindfuck. There's a pretty clear and heavy concentration of facilities in swathes of the country like the Permian Basin and chunks of Pennsylvania and Appalachia. My own home in New York City is free of the yellow radius, but it's especially jarring to zoom in on Texas, where my friends are planning to raise children near Houston and Austin, to see the huge chunks of the state that fall into these danger zones.

The authors also note that half of a mile is a conservative estimate, since some research has recorded health impacts from upstream oil and gas

facilities from as far as 150 miles (241 kilometers) away. The analysis also does not include [downstream refineries](#) or [inactive wells and facilities](#)—both of which have been linked to health impacts.

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“This is a great tool for everyday citizens to educate and advocate for themselves, but I want to underline how important it is for leaders of all kinds utilize this information,” Kayley Shoup, a community organizer living in Carlsbad, New Mexico, said on the call. “When people learn that they are in danger, they need a place to turn.”