



What to know about Lung Cancer & Iron Mining

Asbestos: What is it?

Asbestos is the name for a category of natural minerals, specifically any one of six long, thin, fiber-like silicates.

Asbestos has a number of unique properties, like high resistance to heat and fire. Because of these properties, it was used for a number of purposes throughout the 19th and 20th centuries.

Why isn't it used anymore?

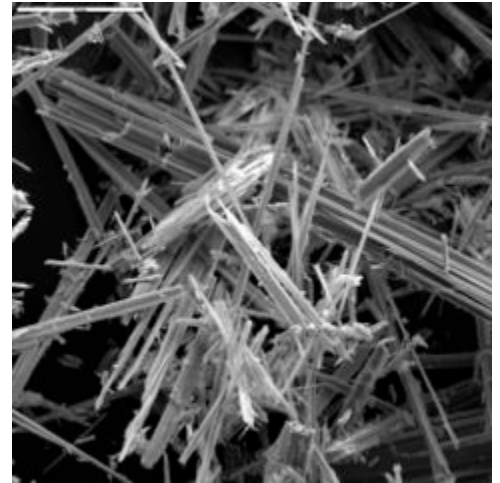
Asbestos has been widely banned since it was discovered to be highly toxic, causing mesothelioma and other types of lung cancer and disease. Over 100,000 people die each year from diseases caused by asbestos,² including thousands annually in the United States.³

Mesothelioma: What is it?

Mesothelioma is a rare and dangerous cancer caused by inhaling asbestos. It is nearly untreatable⁴ and while symptoms often don't develop until 30 years or more after exposure,⁵ average survival times after diagnosis range from 4 to 18 months.⁶

Connection to Iron Mining

Asbestos and asbestos-like mineral fibers can occur naturally near iron deposits. When they do, they can be easily disturbed and released into the air by mining activities such as blasting, excavating, crushing, and/or hauling materials.



Scanning electron microscope image of asbestos, from United States Geological Survey

There is no "safe" level of asbestos exposure¹

What's in the range?

Grunerite is an iron-containing silicate mineral that exists naturally in a number of forms.

One form is a fibrous asbestos often called "amosite" or "brown asbestos," which can cause the lung disease mesothelioma.

It is widespread throughout the Ironwood Iron Range of the Penoque Hills.⁷

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Could this happen around the Gogebic Iron Range?

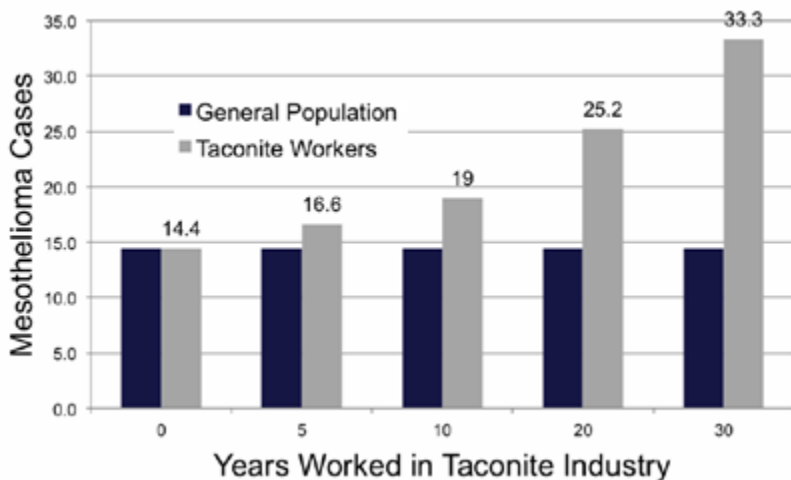
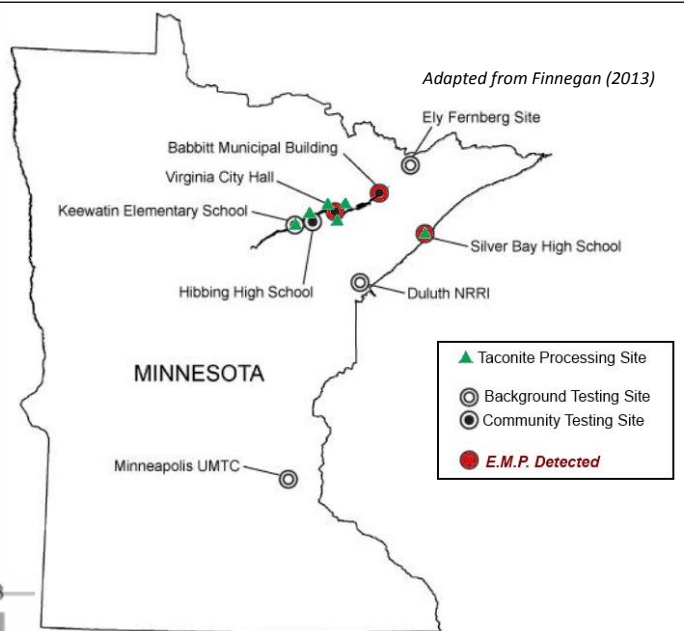
Yes. Recently, the Wisconsin Department of Natural Resources confirmed the discovery of the asbestos form of grunerite in area around the proposed Gogebic Taconite mine in Northern Wisconsin.⁸

Much more research will now be needed before Gogebic Taconite can prove that the proposed mining project will not release the asbestos particles into the air and impact public health.

The Minnesota Experience

A recent multi-million-dollar study by researchers at the University of Minnesota found asbestos-like “elongated mineral particles” in the air at iron mines and in nearby communities.

While older studies in Minnesota were unable to find a link between taconite mining there and mesothelioma, the new, more comprehensive study found that iron workers in the state developed mesothelioma at a rate nearly 200% higher



than expected.

The researchers noted that “the longer people worked in the taconite [iron mining] industry, the higher their risk for mesothelioma.”

Information, graphics, and quotes from: J Finnegan and J Mandel, "Taconite Workers Health Study, Progress Report to the Minnesota Legislature." 2013.

Sources:

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2. World Health Organization, "Asbestos: elimination of asbestos-related diseases." Fact sheet N°343, July 2010.
3. Reuters Health, "Asbestos-related cancer deaths still rising in U.S." *New York*: Apr 23, 2009.
4. M Britton, "The epidemiology of mesothelioma." *Semin Oncol.* 29(1):18-25.
5. T Barreiro and P Katzman, "Malignant Mesothelioma: A Case Presentation and Review." *J Am Osteopath Assoc* 106(12):699-704.
6. American Cancer Society, "Malignant Mesothelioma." 2012.
7. Wisconsin Geological Survey, "Grunerite." Web. Retrieved 2013.
8. L Bergquist, "Asbestos fibers found in rock of proposed Wisconsin mine." *Journal Sentinel*, Oct 7, 2013.

For more information, see www.cleanwisconsin.org/enviropedia