



STATE OF MICHIGAN
DEPARTMENT OF HEALTH AND HUMAN SERVICES
LANSING

RICK SNYDER
GOVERNOR

NICK LYON
DIRECTOR

April 4, 2018

Mr. Brian Kelly
U.S. EPA, Region 5
9311 Groh Road
Grosse Ile, MI 48138

Dear Mr. Kelly:

This letter is in response to your request for a public health evaluation of the asbestos in the area surrounding the C&H Mineral Building, located at 52986 Highway M-26 in Hubbell, Houghton County, Michigan.

MDHHS concludes that there are physical hazards on the C&H Mineral Building property, including the building, and that continually falling roofing material may also be a physical hazard on the property and on and along M-26. Additionally, asbestos fibers are likely being released from the asbestos containing roofing materials falling from the building. Damage to the roofing material may release more asbestos fibers if the material lands in the M-26 right-of-way or is damaged by vehicle traffic on M-26 or on the property. There is a potential exposure to asbestos fibers in the nearby residential areas and to individuals using the adjacent parking lot.

Background

Construction of the C&H Mineral Building (Mineral Building) was completed in 1929, and the building is approximately four stories tall and 290 by 80 feet. The Mineral Building was constructed of reinforced concrete foundation and has compartments for storage of minerals. The property includes 2.9 acres, with minimal vegetation, and approximately 35 waste piles are located on the property. The waste piles consist of both mining era debris and more recent construction and demolition waste. Immediately adjacent to the Mineral Building property is the right-of-way along M-26, which is maintained by the Michigan Department of Transportation, to the northwest; a vacant property (mining era industrial property – coal dock) to the northeast; a currently operating chemical manufacturing facility to the southwest; and Torch Lake to the southeast. There is a chain link fence on the northwest (along M-26) and southwest property boundaries. There is no fence between the coal dock property (on the northeast) and the Mineral Building, however, there are locked gates in the fencing along M-26. There is still a possibility that trespassers can hop the fence, or walk onto the site along the shore of Torch Lake. Mineral building doors were found open in the fall of 2017, and remain open currently.¹ A residential area is approximately less than 0.1 mile to the northwest, across M-26.

The U.S. Environmental Protection Agency capped a strip of the property along the Torch Lake shoreline, as part of the response to the Torch Lake Superfund site, but has not taken other remedial actions at this property. The Michigan Department of Environmental Quality

¹ Amy Keranen, personal communication, February 16, 2018.

Remediation and Redevelopment Division conducted a site investigation from 2014 to 2017. During the site investigation, asbestos containing materials were identified on the property and in the right-of-way of M-26. The asbestos containing materials on and off the property are primarily roofing materials from the Mineral Building. The MDEQ removed and disposed of approximately 11.8 tons of actual or suspected asbestos containing material in June and July of 2016 and another 1.8 tons of actual or suspected asbestos containing material in September and October of 2016. In July 2017, after about 14 tons were removed, roofing materials containing asbestos were identified in 10 locations in the right-of-way, outside of the property fence on both sides of M-26. Asbestos containing materials (roofing materials) were again found in August 2017 and November 2017.²

Environmental data, summary of potential asbestos exposure, and physical hazards

Samples of the material were collected and examined in 2014 and 2017 to confirm the presence of asbestos. Out of the 33 samples examined in 2014, asbestos levels ranged from non-detect to 70% chrysotile, a specific type of asbestos. Out of the 76 samples of material examined in 2017, asbestos levels ranged from non-detect to 70% chrysotile. Asbestos levels in samples from the M-26 right-of-way collected in July 2017 ranged from non-detect to 30% chrysotile. Amosite and anthophyllite, two other types of asbestos, were also observed in the asbestos containing material.²

The asbestos in all identified samples collected in 2017 was considered friable or had the potential to become friable, meaning that fibers could be easily released from the material.² Asbestos fibers are inert and do not undergo significant degradation in the environment. Small asbestos fibers can remain in the air for a long time, and be carried a long distance away from sources. People living near asbestos containing waste sites or buildings with deteriorating asbestos containing material may be breathing elevated levels of asbestos fibers in the air. Although many asbestos fibers that people breathe in will be cleared from the lungs, some of the fibers will remain in the lungs. Over time, the asbestos fibers could cause damage to the lungs and may also increase people's risk of developing cancer, especially for people who also smoke.³

In areas with asbestos containing material, it is difficult to fully evaluate the risk of the exposure unless there is specific sampling to measure how many asbestos fibers are released to the air during certain activities at that location. This is called activity based sampling. The sampling consists of disturbing the soil in ways that are expected to happen at the location and measuring the asbestos fibers in the air during the activity.⁴ For example, to simulate potential residential exposure, gardening activities may be carried out by an individual wearing personal protective equipment while sampling for asbestos fibers in the air.

However, activity based sampling only represents the levels of asbestos fibers that could be in the air based on those currently on the ground. The Mineral Building appears to be continually shedding asbestos containing roofing materials. Additionally, the M-26 right-of-way is maintained, and mowing or other maintenance activities may greatly damage the asbestos containing roofing materials, allowing larger amounts of asbestos fibers to go in the air.

² Tetra Tech, Inc. January 5, 2018. C&H Mineral Building Roof Overview (revision 3) Letter Report. Technical Direction Document No.: S05-0001-1711-007 Document Tracking No.: 2224C.

³ Agency for Toxic Substances and Disease Registry (ATSDR). 2001. Toxicological profile for Asbestos. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

⁴ U.S. Environmental Protection Agency (EPA) 2008. Framework for Investigating Asbestos-Contaminated Superfund Sites. OSWER Directive #9200.0-68. U.S. EPA, Office of Solid Waste and Emergency Response.

Individuals driving on the roadway may also release asbestos fibers when driving over asbestos containing roofing materials. People may breathe in elevated levels of asbestos fibers while driving by this area or in locations near the Mineral Building, including the parking lot of the chemical manufacturing facility and the nearby residential areas. Because the amounts of asbestos containing material on the ground varies over time, any activity based sampling would only reflect current conditions and not the potential future risk from asbestos containing material being continually deposited on and around the property.

There are also physical hazards at the Mineral Building. Roofing materials are falling off and landing along, and perhaps in, M-26. Additionally, the Mineral Building is an attractive nuisance, and people may go onto the property to scavenge for copper or mining era artifacts or damage and access the interior of the building.¹ The Mineral Building mineral storage bins/pits are 20 feet deep and contain miscellaneous debris. (See photo 1 and 2.) There are also approximately 18 waste piles containing mining era waste and debris and another 17 waste piles that contain construction, demolition, roadwork, and woody debris on the Mineral Building property. People may also disturb the asbestos containing material if they are looking for items of interest from mining related activities in those piles.

Conclusions

- MDHHS concludes that the Mineral Building property could be a physical hazard to trespassers. Additionally, roofing material continually shedding from the building may also be a physical hazard to individuals in the right-of-way along M-26 and drivers using M-26.
 - The Mineral Building itself has pits (former mineral storage bins) that are 20 feet below the floor. The floor also appears uneven and has debris and material from former uses. See photo 1 and 2.
 - Individuals digging through or moving waste piles around the property may encounter physical hazards from mining era activities or construction demolition.
 - Drivers and individuals along M-26 may encounter roofing material being shed from the building.
 - Michigan Department of Transportation workers mowing the grass in the M-26 right-of-way would be expected to encounter and significantly disturb the roofing material.
- People are expected to be exposed to asbestos fibers from the roofing material both on and off the Mineral Building property. However, MDDHS cannot make conclusions regarding the risk of people's exposure to asbestos fibers in the air on the property, in the right-of-way along M-26, and in residential neighborhoods near the Mineral Building as no measurements of asbestos fibers in the air have been collected. In general, increasing amounts of friable asbestos containing material on the ground tends to release more asbestos fibers. Over time, as the asbestos containing material degrades, more asbestos fibers will be released.
 - Activity based sampling is typically used to evaluate the people's risk of health effects from exposure to asbestos fibers. However, activity based sampling would have to be done recurrently to evaluate future exposure as there is further decay of the Mineral Building and release of additional asbestos containing roofing material.

Recommendations

- MDHHS recommends that the release of asbestos containing material be prevented, both to stop the potential release of asbestos fibers, and potential human exposure, and also the physical hazard of falling roofing material in a roadway.
 - Complete removal of the asbestos-containing roofing material would eliminate the continuing release of the asbestos containing material.
 - If the release of asbestos containing material continues, activity based sampling at regular intervals should be conducted to ensure that people are not being exposed to elevated levels of asbestos fibers. It should be noted, however, that a single sampling event would not adequately characterize the potential exposure to asbestos fibers. Due to the changing amounts of asbestos containing material being deposited around the building, sampling would have to be repeated frequently and the sampling design would have to capture potential exposure on the property, in the M-26 right-of-way, and also in the nearby residential neighborhood.
 - Unless the roofing material release is prevented, the physical hazards of the asbestos containing roofing material falling in and around the roadway will continue.
- MDHHS recommends that appropriate signage indicating that asbestos is present be maintained or placed to notify adjacent property owners and people using the right-of-way or entering the property of the potential presence of asbestos containing materials.
- MDHHS recommends that the Michigan Department of Transportation be notified of the potential presence of asbestos containing roofing material in the M-26 right-of-way.

Please contact me (517-281-3483 or grayj@michigan.gov) if you have any questions.

Sincerely,

Jennifer Gray, PhD

CC: Deb MacKenzie-Taylor, MDHHS
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Photo 1: Mineral Building interior, looking southwest, with the bins (pits) on the right (MDEQ 2014)



Photo 2: Mineral Building interior, boat in bin (pit) (MDEQ 2014)