

Letter Health Consultation

Onsite Residence Indoor Air Sampling

POWHATAN MINING COMPANY

WOODLAWN, BALTIMORE COUNTY, MARYLAND

FEBRUARY 23, 2012

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

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WOODLAWN, BALTIMORE COUNTY, MARYLAND

Prepared By:

Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Site and Radiological Assessment Branch



Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

February 23, 2012

Mr. Jack Kelly
On Scene Coordinator
Removal Response Program (Mail Code 3HS31)
USEPA - Region 3
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Dear Mr. Kelly:

Thank you for the opportunity for the Agency for Toxic Substances and Disease Registry (ATSDR) to provide technical assistance to the U.S. Environmental Protection Agency (EPA) for the past two years regarding the investigation of and demolition activities at the Powhatan Mining Company site in Woodlawn, Maryland. This site is a former asbestos manufacturing facility. Asbestos was found on the site and in soils of several nearby properties. Asbestos was detected in the indoor air of a building on the site that was formerly used for both asbestos drying operations and for personnel to wash and change clothes after work at the facility. This building was reportedly power-washed, with asbestos waste removed, before having drywall added and being converted to residential use in the mid- to late 1980s. The current homeowner is aware of the potential health risk and chooses to stay in the home.

In November 2011, ATSDR evaluated the indoor air and dust sample results from this home. We recommended cleaning the home using wet methods and high efficiency particulate air (HEPA) vacuuming. It is our understanding the home was cleaned using wet wiping and standard vacuuming methods in January 2012. Per your request, this letter health consultation provides ATSDR's public health conclusions and recommendations from our review of EPA's recent post-cleaning indoor air and dust sample asbestos results from this on-site home.

Description of Sampling and Results

The sampling was performed on January 18, 2012. Two dust microvac samples were collected from surface areas that contained visible dust. Air samples were collected from 4 rooms downstairs and 4 rooms upstairs. In each room, an oscillating fan and ceiling fan were running while collecting an air sample from a stationary monitor.

You shared preliminary results with ATSDR on January 28, 2012. Similar to the October pre-cleaning samples, surface dust samples showed non-detect results, with a sensitivity of 776 structures per square centimeter. This sensitivity is not generally different from background asbestos levels in settled dust.¹

ATSDR typically focuses its evaluation on air results, since air concentrations best represent inhalation exposures, the pathway of greatest concern. The table below summarizes the pre- and

¹ Millette JR and Hays SM. Settled asbestos dust sampling and analysis. Boca Raton: CRC Press, 1994.

post-cleaning air sample results.

Comparison of Pre- and Post-Cleaning Indoor Air Sample Results, Powhatan Residence on Site⁺

Location	Pre-Cleaning (10/12/11)		Post-Cleaning (1/18/12)	
	Concentration (s/cc)	Sensitivity (s/cc)	Concentration (s/cc)	Sensitivity (s/cc)
Lower Floor Living Room 1	0.019	0.00065	0.0018	0.00061
Lower Floor Living Room 2	0.012	0.00065	0.00059	0.00059
Lower Floor Bedroom	0.017	0.00064	0.00054	0.00054
Lower Floor Kitchen	0.011	0.00066	<0.00059	0.00059
Upper Floor Bedroom	0.012	0.00069	0.0024	0.0006
Upper Floor Living Room 1	0.0091	0.0007	0.0018	0.0006
Upper Floor Living Room 2	0.0095	0.00064	-	-
Upper Floor Laundry Area	-	-	0.0012	0.00059

⁺ Source: email from Jack Kelly, EPA Region 3 On-Scene Coordinator to Jill Dyken, ATSDR, Subject: Interior Air/Dust Sampling for Owner's Home on Site - pre and post owner DIY cleaning, January 28, 2012.
s/cc = phase contrast microscopy equivalent structures per cubic centimeter
“-“ means not sampled

Discussion of Results

The homeowner’s cleaning efforts reduced airborne asbestos concentrations by about an order of magnitude. However, 4 out of the 7 post-cleaning air samples still exceed the health-based benchmark concentration of 0.0009 phase contrast microscopy equivalent (PCMe) structures per cubic centimeter (s/cc)². The benchmark represents a theoretical risk of no more than 1 excess cancer in 10,000 people exposed for a 30-year period. The asbestos concentrations remaining in the home represent a low to moderate increased risk of cancer. We recommend additional cleaning using wet methods such as wiping or steam cleaning and HEPA vacuuming to reduce asbestos air concentrations to the benchmark level or lower, representing no apparent to low excess cancer risk. It is not clear whether repeating the cleaning methods used before this sampling (standard, non-HEPA vacuum and wet wiping) can achieve the benchmark. Presumably, using a HEPA vacuum would capture more asbestos fibers and achieve the benchmark more quickly.

Assuming the additional cleaning meets the health-based benchmark and regular cleaning maintains it, normal living conditions in this home would not be expected to result in asbestos exposures high

² Contaminants of Potential Concern (COPC) Committee of the World Trade Center Indoor Air Task Force Working Group. World Trade Center indoor environment assessment: selecting contaminants of potential concern and setting health-based benchmarks. Contributors from U.S. Environmental Protection Agency, New York City Department of Public Health and Mental Hygiene, Agency for Toxic Substances and Disease Registry, New York State Department of Health, and Occupational Safety and Health Administration. May 2003.

which would increase the risk above EPA's target risk range for Superfund.

We understand EPA has observed no signs that undetected sources of asbestos are entering the living space of the home. However, given the past use of the home for asbestos operations, ATSDR notes that inaccessible areas of the structure could contain asbestos contamination that would not have been released in this type of sampling. Further assessment would be needed if the property were to be renovated or converted to another use. Some mechanism for informing future occupants of the home's history and this potential concern is needed.

Summary of ATSDR's Conclusion and Recommendations

- The cleaning performed in January 2012 reduced asbestos air concentrations by about an order of magnitude. However, several rooms still exceed the health-based benchmark for residential occupancy.
- Further cleaning using wet methods such as wiping or steam cleaning and HEPA vacuuming is recommended to reduce asbestos air concentrations to the benchmark.
- Given the past use of the home for asbestos operations, we recommend a mechanism for informing future occupants of the home's history. Further assessment would be needed if the home were renovated or converted to another use.

Thank you for including ATSDR in your site work. Please do not hesitate to contact me if you have any questions or concerns. I can be reached at (770) 488-0768 or by email at JDyken@cdc.gov.

Sincerely,



Jill J. Dyken, PhD, PE
Environmental Health Scientist
Site and Radiological Assessment Branch
Division of Health Assessment and Consultation

cc:

Lora Werner, ATSDR/DRO Region 3