

Date: July 26, 2005

**Requestor:** private citizen

**Description of Information:**

A June 16, 2005 joint press release issued by the Illinois Attorney General, Illinois Department of Public Health, Illinois EPA, Illinois Department of Natural Resources, and the USEPA

**Specific reason(s) why information does not comply with OMB, HHS or CDC guidelines:**

The ATSDR Public Health Assessment at IBSP used sampling strategies and analytical methods that have been proven by Federal research to have no correlation to health risk. This includes the use of 1) a "hybrid" asbestos bulk sampling and analytical method; 2) inappropriate use of personal and aggressive air clearance testing; and, 3) failure to differentiate the higher risk from exposure to amphibole asbestos fibers as a means to measure asbestos health risks from asbestos contaminated beach sand. In addition, new analytical testing performed at the site by Dr. D. Wayne Berman (Waukegan Park District study 2002) identified tremolite asbestos and the University of Illinois-Chicago (IBSP: Determination of Asbestos Contamination, 2005) identified the presence of "significantly elevated" levels of serpentine AND amphibole asbestos fibers (greater than 10 microns) including tremolite asbestos in the study area. The lack of using appropriate testing methods, the recent findings of "significantly elevated" serpentine and amphibole fibers in the area, and the invalidation of the risk tools used in the IBSP study require immediate actions by your office to prevent this report from being cited or quoted by others as a valid public health assessment. The scope of the Public Health Assessment was defined as, "The Illinois Department of Public Health (IDPH) and the Illinois Environmental Protection Agency (Illinois EPA) were asked to assist in this investigation and to determine whether conditions at the beach are a threat to visitors and workers at the Park. IDNR specifically asked IDPH to evaluate the data collected from the sand, water, and air at the Park and to determine whether asbestos was present at levels that posed a health hazard" (ATSDR report pg. 1). To perform this hazard evaluation the study evaluated OSHA occupational exposure air testing data, bulk sampling results (PLM and TEM), aggressive air clearance following AHERA protocol, and water testing based on the safe drinking water standard. All four types of analytical data used by the IEPA and IDPH are not valid asbestos hazard risk assessment tools for public exposure to amphibole and serpentine asbestos contaminated beach sand. Yet the IDPH claimed in the public health assessment that "From the extensive sampling and the pathways evaluated, IDPH concludes that the asbestos at Illinois Beach State Park is not a public health hazard for visitors and workers" (ATSDR pg.1). Supporting Documentation 1. Use of non-risk based PLM bulk sampling methods and 1% threshold - The first error used by the IDPH in the 2000 public health assessment at IBSP was to use PLM analysis and the 1% asbestos or less threshold as "sufficient to determine that the asbestos content of the sand was below a level of health concern" (ATSDR pg.6). A June 10, 2004 USEPA Memorandum from Michael B. Cook, Director of the Office of Superfund Remediation and Technology Innovations stated "Regions should not assume that materials containing less than 1% asbestos do not pose an unreasonable risk to human health" (see Cook

memo attached). As previously quoted above, the IDPH used 1% asbestos threshold in sand to determine a level of health concern. Non-detects by PLM was also used to claim no hazard present. A December 20, 2001 USEPA Memorandum from Christopher P. Weis regarding the substantial endangerment to public health from amphibole asbestos at Libby Montana (see Weis memo attached) stated "Moreover, it is important to recognize that the PLM method has a relatively high detection limit for asbestos, and a non-detect by PLM is not equal to proof the sample is not contaminated with asbestos. To the contrary, other microscopic techniques (e.g., scanning electron microscopy) have shown that some soil samples that are below the limit of detection by PLM do contain high levels of asbestos fibers" (Weis pg.6). 2. Use of a project invented non-risk based "hybrid TEM" method to measure asbestos in sand - The ATSDR report also indicated concern about finding an analytical method for testing beach sand. The report states, "Select sand samples were analyzed using a hybrid method based on an ASTM method for detecting asbestos structures in dust" (ATSDR pg.6). This "hybrid method" was invented by the contract laboratory for this project using TEM analysis. The method was not peer reviewed and there was no independent quality control performed to verify the accuracy of the "hybrid method". None the less, in a recent USEPA preliminary risk assessment performed by Dr. D. Wayne Berman for the North Ridge Estates Superfund site in September 2004, he stated, "Asbestos has traditionally been determined in bulk materials (primarily ACM), using a method (Perkins and Harvey 1993) that relies (at least initially) on polarized light microscopy (PLM) and that, even when confirmed by TEM, results are reported in terms of a mass concentration of asbestos (the number of grams of asbestos per unit mass of soil). However, as indicated above (and as stated in the method itself), such measurements cannot be used to predict risk" (Berman North Ridge Report pg.14 can be found on USEPA website at

<http://vosemite.epa.gov/R10/CLEANUP.NSF/f5415302afe9dbd088256ff10055fc57/f218Oba9c99e>

906188256ff1005f997c/\$FILE/NRE%20Final%20Draft%20Complete%20Soil%20Report.pdf). 3. Use of PCM air testing which is not representative of non-occupational exposures - The ATSDR report evaluated air exposures to workers walking the beach and hand picking up pieces of asbestos debris. The report indicated that they used a value of 0.01 f/cc as a comparison value which adds a factor of 10 to the OSHA PEL of 0.1 f/cc. However, the ATSDR's September 2001 Public Health Statement for Asbestos states "Since there are one million cm<sup>3</sup> (or one million mL) in a cubic meter, there typically would be 0.00001 fibers/mL of asbestos in air in rural areas. Typical levels found in cities are about 10-fold higher". Typical background levels expected at the beach would have been well below the detection limit of the PCM analytical method used for the ATSDR report at IBSP. The ATSDR report addressed this limitation by stating, "Although fibers might exist at levels less than the detection limits of the analytic methods, the detection limits were well below the comparison values used. Therefore, exposure to any fiber that might be present would not be expected to cause health effects" (ATSDR pg.6). Occupational exposures to regulated fibers at 0.01 f/cc do not correlate to non-occupational exposures to sand that has been found to contain "significantly elevated" levels of amphibole and chrysotile asbestos. The occupational exposure activities of picking up small pieces of asbestos debris during wet spring months do not represent the public's exposure to beach activities such as playing Frisbee or volleyball, shaking out a

beach towel, or building a sand castle during the hot dry summer. Finally, amphibole asbestos fibers can be up to 100 times more toxic than chrysotile asbestos fibers (Berman North Ridge pg.9) and these elevated risks should be evaluated separately. The PCM method can not differentiate between serpentine and amphibole airborne health risks. 4. Use of an aggressive AHERA TEM air clearance on an uncontained evaluation area - The ATSDR report for IBSP incorporated the use of an aggressive method of air testing using a TEM electron microscope analytical method to compare to the AHERA school asbestos clearance levels after an asbestos remediation method in a school. The AHERA school clearance test is designed to be performed in a contained area where asbestos fibers are aggressively agitated using fans for 30 minutes prior to turning on air testing equipment. This is done to show "worst case" fiber levels since the disturbed fibers are trapped in the contained area. The IDPH inappropriately used this method for the ATSDR report at IBSP. The report states, "Air samples were collected, eight from the public beaches and four at the infrequently used shoreline. The sand was disturbed by leaf blowers for 30 minutes before sample collection to assess the worst- case scenario for air exposure" (ATSDR pg.4). First, a total of 12 air samples does not represent adequate air testing for a 6.5 mile beach. Second, aggressively disturbing the sand with leaf blowers for 30 minutes prior to sampling in an uncontained outdoor work space does not create a "worst-case" scenario. Since the work area was not contained, any asbestos fibers present on the surface of the beach would have been blown away during the 30 minute air cleaning of the beach. Just as one would blow leaves off the driveway, asbestos fibers were blown off of the beach. No asbestos was detected in the air samples and the IDPH used this deceptive analytical method to evaluate the risk at the beach. Finally, the air testing was performed during early spring when project logs documented precipitation (snow and rain) and when the beach was semi- frozen. This can be verified by reviewing the Hansen report cited in the back of the ATSDR study. Again, these analytical results are not representative of public exposure to airborne asbestos fibers in summer. Frozen, wet sand exposed to a leaf blower in an uncontained work area would not generate a representative airborne exposure to perform a public health assessment for asbestos. 5. None of the analytical methods differentiated between amphibole and chrysotile asbestos - As previously stated, amphibole asbestos fibers can be as high as 100 time more toxic to humans than chrysotile asbestos. Two studies have identified the presence of amphiboles (including tremolite) at the study area in 2002 and 2004. None of the IDPH/ATSDR analytical methods differentiated between these two types of fiber risks when evaluating the hazards posed by asbestos at IBSP. The finding of tremolite asbestos in the beach sand in 2002 and 2004 by itself should void the 2000 ATSDR report at IBSP.

**Requestor's recommendation for correction:**

**How the requestor was affected by the information?**

I have personally found several pieces of asbestos on this public beach. The public has had access to this asbestos polluted beach since the massive asbestos clean-up in 1997-98. The IDNR now merely picks up the visible chunks once a week while ignoring the more hazardous microscopic asbestos. The justification by the Park staff for ignoring the microscopic asbestos contamination is that the 2000 ATSDR report at IBSP confirmed

previous findings by the IDPH in 1998 that no adverse health effects were present. This is clearly not true. I am more concerned since the recent confirmation of fibrous amphibole asbestos including tremolite in the beach sand. I am concern as a long time resident of Lake County Illinois where the beach is located. I am concerned as a parent who has visited the beach with my family in the past. I am concerned as a licensed asbestos professional who knows that the asbestos risk is still undefined. I am concerned as a taxpayer who has paid quite a bit of money for studies that do not deliver as promised. I see what is done at Libby, Oak Ridge/El Dorado CA, and other sites where the public has exposure to asbestos contaminated soils. The public is not allowed in contaminated areas until a full human health risk assessment is performed. This 2000 ATSDR report for IBSP is masking a potentially huge public exposure to unknown asbestos risks. If this report is withdrawn the State of Illinois would have to perform a scientifically sound human health risk assessment. I believe that a risk assessment is desperately needed at this site due to continued visual asbestos debris washing on shore along with the presence of amphiboles including tremolite. Hopefully, a scientifically valid risk assessment will find that there really aren't any adverse health risks present from asbestos at IBSP. Right now we can't say that.