

# **EXHIBIT 1**

Preliminary Report of  
Dr. John J. Godleski, M.D.

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Dear Mr. Randazza:

I was Professor of Pathology on the faculty of Harvard Medical School, Brigham and Women's Hospital, and Harvard School of Public Health from 1978-2017. I graduated from the University of Pittsburgh School of Medicine. As a student, I did research in the Pathology Department learning electron microscopy. In my senior year, I received the top award for research done by a medical student in the United States given by the Student American Medical Association, and published several papers describing that research. I then did an internship and residency in Pathology at the Massachusetts General Hospital, a major teaching hospital of Harvard Medical School. I received further training at Harvard School of Public Health and the University of North Carolina. I was board Certified in Anatomic Pathology in 1975. I spent 5 years on the faculty of Medical College of Pennsylvania in Philadelphia in the Department of Pathology where I had a research laboratory, supervised the electron microscopy facility and the autopsy service. I was recruited to head Pulmonary Pathology at Brigham and Women's Hospital in Boston, a position I held for 37 years. I published more than one hundred and sixty papers related to pulmonary/environmental pathology including a number using analytical electron microscopy. Notably, I have been senior author on papers using electron microscopy with both X-ray analysis, electron energy loss spectroscopy, and other analytical techniques. In my career, I received more than \$30 million in research grants from NIH, EPA, and other funding agencies as Principal Investigator; I led the Particles Research Core in the Harvard-NIEHS Environmental Research Center, and I was Associate Director of the Harvard Clean Air Research Center supported by the US Environmental Protection Agency. In my daily activities, I was a member of the Pulmonary Pathology and Autopsy Services at Brigham and Women's Hospital. I taught Pathology residents and fellows, medical students, graduate students, and postdoctoral fellows, and I carried out research in my laboratory at Harvard School of Public Health. I was responsible for accurate pathological diagnoses at BWH and I oversaw a research group of as many as 15 people at HSPH. I was the pathologist providing the final opinion on difficult diagnostic cases of lung disease within our department, and I am a recognized expert whose opinion is sought by pathologists from other hospitals in the diagnosis of foreign material in tissues throughout the body using scanning electron microscopy, energy dispersive X-ray analyses, and other analytical techniques. Although now retired, I have full access to my laboratory and electron microscopy facilities.

I received from your client a sample of the purple mattress including both the foam and structured air space elements of the mattress. The sample was about 1 cubic foot in size. From a sealed air space, the dust in that air space was sampled to determine particle size distribution of the particulate matter in the space as well as to determine its composition. This sample was handled using our standard protocol to assure no contamination of the material in our laboratory. This protocol begins with handling the material with particle free gloves on pre-cleaned surfaces. A previously closed in surface was exposed, dust was collected, and the samples were placed in a new plastic stub box and maintained in this container until mounted for SEM examination. Particulate was studied with a Hitachi SU6600 field emission SEM with an Oxford energy dispersive X-ray

analysis system (EDS). Oxford Instrument software is Aztec 3.1b. EDS detector model is X-Max 50 SDD. Particles were examined for morphological characteristics and to carry out spectral analysis on a representative sample of particles. Images of backscattering or secondary electrons were acquired using 15.1kV accelerating voltage, 10 mm working distance, small beam spot, aperture #2, and 60Pa vacuum (VP-SEM mode). EDS signals were acquired in either the spot analysis or mapping analysis mode. Dead time was always controlled under 20% and signal counts around 5000 cps. Electron beam penetration depth under the conditions used is estimated to be 2.5 micrometers, with an analysis range of 0.5-2.5 micrometers. Image files were named after the number of EDS site ID, which was consecutive from 1. Spectrum ID was also serial coded consecutively from 1. Once the images or spectra are acquired, the assigned serial ID cannot be changed or replaced.

In studying the particles by SEM/EDS, it was found that the particles were in the form of microspheres with an average diameter of 5.8 microns. X-ray analysis showed the major chemical component of the particles to be carbon, with no mineral elements present. There were no micro-organisms found in the samples. By Fourier Transformed Infrared spectroscopy (FTIR), the white powder particles were shown to be polyethylene, and the purple frame was found to be polyethylene-polypropylene copolymer. The foam portion of the mattress is still understudy, but has characteristics of butadiene, and may be a form of butadiene polymer.

Polyethylene is a common plastic formed into many structures. As inhalable microspheres, these have the potential to cause respiratory irritation especially when inhaled in large numbers as shown in my laboratory (1-4). In addition, polyethylene has been associated with allergy in the form of either asthma or contact dermatitis in sensitized individuals (5-7). Based on this assessment, it is important for consumers to be aware of the composition of this fine particulate matter in the mattress which may be released into the air and has the potential for the development of respiratory or dermal hypersensitivity in some individuals.

Sincerely,



John J. Godleski, MD  
Professor of Pathology  
(Retired)

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