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May 25, 2005

Commissioner Ruth S. Damsker
Chair, Pottstown Landfill Closure Committee
C/O Montgomery County Commissioners' Office
Montgomery County Courthouse
P. O. Box 311
Norristown, PA 19404-0311

Re: The unreliable information provided in Michael Dougherty's (of Waste Management, Inc.) letter to the Pottstown Landfill Closure Committee regarding the appropriateness of G. Fred Lee serving as a peer reviewer on issues that the Committee should consider in developing a closure and post-closure plan that will protect public health and the environment for as long as the waste in the Pottstown Landfill will be a threat

Dear Commissioner Damsker:

I wish to provide the Pottstown Landfill Closure Committee with comments on the unreliable information that Michael Dougherty of Waste Management, Inc., has provided in his letter of May 20, 2005, regarding my serving as an advisor/peer reviewer to the Committee on issues that the Committee should consider in developing a closure and post-closure plan that will protect public health and the environment for as long as the wastes in the Pottstown Landfill will be a threat.

In my over-40-year professional career working on public health, water quality and other environmental issues, I have occasionally encountered situations such as those raised by Mr. Dougherty, where a project proponent will claim that my serving as an advisor to a public or other group or entity represents practicing engineering in the area of the project without appropriate registration. This is a typical ploy that garbage companies like Waste Management, Inc., use to try to prevent public and other groups such as the Landfill Closure Committee from benefiting from my over 40 years of professional experience on the potential problems associated with the long-term impacts of landfills. Each time in the past that this type of issue has been raised, a comprehensive review of the matter has shown that the garbage company's position on this issue was inappropriate – i.e., my advising a public entity in a state in which I am not registered as a professional engineer by the engineering registration board for the state does not represent practicing engineering without a license in that state.

At no time during my activities associated with the Pottstown Landfill Closure Committee requested review of the long-term public health and other environmental problems that the Committee should consider in evaluating the adequacy of the proposed closure and post-closure

care (monitoring and maintenance) have I represented myself as being registered as an engineer in the Commonwealth of Pennsylvania. I am a registered professional engineer in another state. I am also an American Academy of Environmental Engineers Diplomate and Board Certified Environmental Engineer. This certification means that I am recognized as one of the leaders in the environmental engineering field.

After obtaining a bachelors degree in public health sciences from San Jose State College in San Jose, California; a Master of Science in Public Health from the University of North Carolina, Chapel Hill; and a PhD in environmental engineering from Harvard University, which was awarded in 1960, I taught graduate-level courses in environmental engineering and conducted research for a period of 30 years at several major US universities. One of the topics covered in my teaching and research was the water quality and public health impacts of landfilled wastes. In 1989 I retired from university teaching and research and became a full-time consultant. At that time I held a Distinguished Professorship in Civil and Environmental Engineering at the New Jersey Institute of Technology. During the five years I held this position I also was Chief Examiner for the American Academy of Environmental Engineers to determine whether other professional engineers were qualified to become certified by the Academy as Diplomates. In 1989 I moved to California, where I have been the Chief Examiner for North-Central California for the American Academy of Environmental Engineers. This position requires that I organize and conduct for the Academy examinations of professional engineers in a number of water quality areas including solid waste management (landfilling). A review of my professional activities shows that I strongly support registration of engineers by states, so that all of those who design (seal) facilities are familiar with the state's design criteria.

I have been involved in the review of over 80 landfills located throughout the US and in other countries, typically working with water utilities, municipalities and others, where I have been asked to evaluate the potential for a proposed or existing landfill to be a threat to public health and the environment for as long as the wastes in the landfill will be a threat. While Mr. Dougherty claims in his letter of May 20 that my activities include a "*... long history of activist opposition regarding the development and implementation of modern solid waste landfill technology,*" as discussed below, Mr. Dougherty has failed to reliably present my position on this issue.

Mr. Dougherty also implied that it is my "activist" position that "*... all landfills leak and that current landfill design technologies are flawed.*" If he had properly discussed my writings on this issue, including those in the draft report to the Pottstown Landfill Closure Committee, he would have stated that it is the US EPA's most recent technical report on landfill liner issues that states that, ultimately, landfill liners of the type that are used in the Pottstown Landfill by Waste Management, Inc., will deteriorate and can fail to prevent groundwater pollution.

As discussed in my report to the Committee, while a university professor of civil and environmental engineering, I was asked by the US EPA and others to conduct research on landfill liner issues. I am, therefore, highly familiar with today's landfills' plastic sheeting and compacted clay liners that will ultimately fail to contain landfill waste components for as long as they are a threat. These issues are discussed, with appropriate references, in the draft report that I have provided to the Committee. As I indicate in the report, the Committee needs to consider

this situation in developing an approach for the closure and especially post-closure monitoring and maintenance of the Pottstown Landfill.

With regard to Mr. Dougherty's statement,

“For example, he refers to federal landfill regulations as ‘propaganda,’ and has suggested for all regulators who approved of the federal RCRA regulations governing municipal solid waste landfill facilities, ‘... the concentration of leachate in the drinking water delivered to their home tap should be five times what the residents who live near the landfill are expected to consume...’”

again, Mr. Dougherty has provided a distorted discussion of this issue. Contrary to his statement, I did not claim that the US EPA landfilling regulations are propaganda. If he had taken the time to review and properly quote my statements on this matter (which are available from my website, www.gfredlee.com), he would have indicated that I characterize the US EPA's latest website statements on the protective nature of minimum design landfills as propaganda. This issue is well understood by professionals in the field today.

A similar distortion of my statements has been provided by Mr. Dougherty with regard to groundwater that contains leachate pollution being unsafe to consume as a domestic water supply. While Mr. Dougherty and Waste Management, Inc., have been attempting to convince the Pottstown Landfill Closure Committee that they only need to be concerned about 30 years of postclosure care, the facts are, as discussed in my draft report, that the wastes in this landfill will be a threat effectively forever, and the Committee needs to consider this in their deliberations on the adequacy of Waste Management's proposed closure and postclosure monitoring and maintenance of the landfill.

I can understand Mr. Dougherty's not wanting the Pottstown Landfill Closure Committee to be made aware that Waste Management's proposed 30-year postclosure monitoring and maintenance of this landfill represents an infinitesimally small part of the time that the landfill's waste will be a threat, since this means, in accord with Pennsylvania's Department of Environmental Protection landfilling regulations, that Waste Management will be required to provide postclosure monitoring and maintenance for as long as the wastes in the landfill represent a threat to generate landfill gas and/or leachate.

With respect to Mr. Dougherty's statement that I have *“... attacked the professional ethics of consultants associated with landfill development,”* again, Mr. Dougherty has presented a distorted discussion of this issue. As discussed in my report to the Committee, the American Society of Civil Engineers (ASCE), as well as several other professional organizations and universities, have had me present two-day short courses on landfill design and other issues. During these presentations I discuss the well-known problem of consultants who work for landfill developers failing to provide full disclosure on the long-term public health and environmental problems of today's minimum design landfills. Failure to provide this information is a violation of the American Society of Civil Engineers' professional ethics regulation. At the presentation of my short course in New York City, one of the participants in the course was a professional engineer who was a member of the ASCE Professional Ethics

Committee. This individual indicated that I should write up a discussion of these issues for publication in the ASCE *Civil Engineering* magazine. As discussed in my report, a review of this issue was published by ASCE, which discusses the problem of registered professional engineers failing to fulfill their professional engineering ethics obligation of providing full disclosure at permitting hearings of potential problems associated with a structure that involves public health protection. It is well understood in the field that a professional engineer who provides full disclosure of the eventual failure of the landfill liner system will not get another job in developing landfills. Basically, the problem is that consultants approach providing information on landfills from an advocacy perspective, where only issues that support their client's position are discussed, and no mention is made, or unreliable information is provided, on the eventual failure of the landfill liner system. My ASCE article on this issue discusses how this problem can be addressed through a full public interactive peer review process, so that all parties involved in the review of a potential landfill understand the long-term problems associated with it.

Mr. Dougherty claims that, "*These two individuals [Cole and Lee] do not meet the fundamental criteria for peer reviewers.*" He asserts,

"Rather, both Cole and Lee have a bias and an agenda. They are affiliated with landfill opposition groups and have built careers supporting opposition strategies to hamper landfill development or expansions and to close facilities."

This is more of the inappropriate, unreliable information that Mr. Dougherty has provided in his letter of May 20, 2005. My only "agenda," which is explicit in my numerous publications on landfilling issues, is to work for the development of landfills and their appropriate closure/postclosure monitoring and maintenance that will provide for the best possible public health and environmental protection from the landfilled wastes for as long as the wastes will be a threat. Contrary to Mr. Dougherty's statements, I am not anti-landfill. As repeatedly noted in my publications, there is need to landfill those parts of the municipal solid waste stream that cannot be recycled/reused. For over 25 years I have been a strong advocate of developing landfilling regulations and landfills that properly recognize the long-term threat of the wastes. As an example of this effort, in the early 1980s I published a paper in the American Water Works Association (AWWA) journal, discussing the problems of the landfill liner systems that were beginning to be used for solid and hazardous waste management, in which I discussed that these liner systems would ultimately fail to prevent groundwater pollution. This paper was judged by the Water Resources Division of the AWWA as the best paper published in the journal in 1984.

With respect to serving as a peer reviewer of water quality, public health and landfilling issues, over the last 35 years, at the rate of about one every two months, I have been asked by some professional organization, agency or journal to serve as a peer reviewer of a proposed research project, journal article, regulation, etc. This peer review activity continues today, and I am well recognized as an expert who can provide unbiased, independent peer reviews of technical issues in the environmental quality management field.

With respect to Mr. Dougherty's statement that I take the position that "... *those living near landfills frequently are economically disadvantaged and of a different ethnic mix than the general population,*" he states that, "*In the case of the Pottstown Landfill, both statements are untrue and are totally unsupported by Dr. Lee.*" Once again, Mr. Dougherty has provided highly distorted statements of my comments on the Pottstown Landfill situation. Contrary to his statement, I did not indicate in my draft reports to the Pottstown Landfill Closure Committee that the people living near the Pottstown Landfill are economically disadvantaged or of a different ethnic mix. It is, however, well known that in many other situations the people living near landfills are economically disadvantaged and often of a different ethnic mix. Again, Mr. Dougherty has deliberately distorted information in my writings for other situations, implying that I have stated that the other situations are applicable to the Pottstown Landfill.

With respect to commenting on the potential for pollution of groundwater by a landfill such as the Pottstown Landfill, I have been involved in groundwater quality investigations associated with landfills for over 40 years. My involvement includes serving as a member of the editorial board for the journal *Groundwater*, where my responsibility was that of critically reviewing proposed papers on groundwater pollution issues.

With respect to my serving as an advisor/peer reviewer to the Pottstown Landfill Closure Committee (where I have prepared independent reports evaluating the potential problems with the Pottstown Landfill's ability to provide for public health and environmental protection for as long as the wastes in the landfill will be a threat) representing the "practice of engineering" in the Commonwealth of Pennsylvania, my comments are based on my expertise and experience in the chemistry and other scientific aspects of the processes that occur in the Pottstown Landfill and the chemical characteristics of the landfill liner system that has been used to contain the wastes at this landfill. I am in the somewhat unique position of having a strong environmental chemistry background and expertise that enables me to offer an evaluation of the long-term threat of landfills like the Pottstown Landfill to public health and the environment. My public health background and 40 years of experience enable me to provide guidance to the Committee on the long-term problems that the Committee needs to address with respect to properly closing this landfill.

With respect to my "... *history of opposing WM facilities,*" I have been involved as a requested reviewer of about 80 landfills. Besides the Pottstown Landfill, only two of these have been Waste Management facilities. In Indiana, the community of New Haven asked me to review the potential for a Waste Management hazardous waste landfill to pollute the New Haven groundwater supply. I reviewed this situation, together with a groundwater hydrologist from the University of Indiana, where, based on our testimony before the Indiana Hazardous Waste Siting Commission, the Commission ordered the Waste Management landfill to be closed because of its threat to the groundwater supply of New Haven. In Colorado, I was asked to serve on a governor's commission on the potential problems with the Lowry Landfill. This was a Waste Management facility. This commission found a number of problems with this facility.

Overall, Mr. Dougherty has presented a highly unreliable, distorted discussion of why it is inappropriate for me to serve as an advisor/peer reviewer to the Pottstown Landfill Closure Committee on the issues that this Committee should consider in developing closure and

postclosure plans and their implementation that will provide public health and environmental protection from the landfilled wastes.

If there are questions on these comments, please contact me. I look forward to discussing my draft report with the Committee on June 1.

Fred

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