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October 20, 1955

Mr. E. C. Lucas
Assistant Chief
Industrial Sanitation Section
Department of Public Health
Division of Air Pollution Control and Environmental Sanitation
Room 650, City Hall Annex
Philadelphia 7, Pennsylvania

Dear Mr. Lucas:

I am somewhat slow in replying to your letter of September 28 because of the pressure of work which gave me no time for correspondence.

I have consulted Mr. Cholak on the technical aspects of your inquiry, since I am no expert in such matters except by proxy. It was my opinion, however, which he confirms, that no difficulty should arise in analysing for either lead or fluoride in the atmosphere under the conditions which you have described. The problem in either case will be that of applying the specific method with care and precision, to samples that are adequate in number and type.

I think it may be pertinent to point out that the best method of determining the actual significance of the hazard to workmen of their exposure to either lead or fluoride is that of measuring the concentration of lead in the blood (it is also advantageous, but not so important, to measure the lead concentration or output in the urine), and the rate of elimination of fluoride in the urine. As you are aware, no doubt, the analysis of the air does not, in itself, provide the information that is required for the safety of the personnel in many industrial operations, no matter how well it is done. Actually it does so only in those situations in which the results are so low as to demonstrate the virtual absence of hazard, and even then, it sometimes fails to portray the facts of the situation.

I take the liberty of calling attention to these points, since industrial organizations often need to be fully informed of the shortcomings, on the one hand, and the advantages, on the other, of some of the available methods of industrial hygiene as applied to their specific problems. Certainly in hazardous or borderline occupations in the lead-using operations, there is no adequate substitute for analytical observations of the personnel as a means of knowing

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the actual hazard and in preventing cases of lead intoxication.

Very truly yours,

Robert A. Kehoe, M. D.

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