

May 23, 1963

Rex H. Wilson, M.D.
Medical Director
The B.F. Goodrich Company
Akron
Ohio

Dear Rex:

I have gone over your letter of May 20th, and all of the attached reports as well as the analytical data. While I do not have the full information which would enable me to interpret all of the analytical findings which you have supplied, and while there are some highly variable results which seem a bit incongruous, I am constrained to believe that certain of these employees have sustained a dangerous degree of exposure in association with their work. How this occurred is not evident from the available information, but knowing how easily such things can happen, I am not especially mystified by these incidents. I suspect that if I were to watch these operations from time to time, I could discover how the exposure is mediated.

I do not understand your question as to why Messrs. [redacted] and [redacted] have not returned "to normal blood values after removal from exposure." Certainly the analytical results obtained in the case of [redacted] have been within normal limits since February 1963, and in view of the fact that the highest result recorded on your chart was 0.07 mg. per 100 grams of blood in October of 1961, the entire series of findings in his case seems not remarkable.

Incidentally, Dr. Imbus, as you may or may not know, was trained here and continued to work with us for a time. I cannot find any basis for differing with his conclusions. He is a good physician, and he has had good training and also good experience in relation to lead poisoning. From the information supplied to me, I should conclude, without any doubt, that Hawkins was not suffering from lead poisoning.

As your question 1 applies to McNeil, I find nothing unusual in the analytical findings in his case. The values were in the range denoting dangerous exposure in October and November of 1962 (at the bare level of danger in October, and greatly elevated in November). I am surprised that this was the case but if the analytical results can be trusted, it is not surprising that he had some, albeit mild, symptoms. From December 1962 on, the concentration of lead in the blood appears to have decreased steadily and by March of 1963, it had fallen to the approximate mean

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normal level. There is nothing strange about this. (If you are concerned about the findings in the urine, dismiss them from your mind. None of those listed on your chart are remarkable. They are well within the limits of correspondence with the results obtained by the analysis of the blood when the latter have remained within the normal or near normal range. There is a degree of discrepancy between the values relating to the blood and urine when the blood was found to be high. In only one instance has the concentration in the urine followed along with that in the blood (the one sample of urine obtained from [REDACTED], which contained 0.17 mg. per liter at a time when the blood contained what is believed to be 0.11 mg. per 100 grams but is erroneously recorded as 11.0 mg. per 100 grams; every other result pertaining to the concentration of lead in the urine in the entire series reported here is within the normal range.

[REDACTED] be answered in the affirmative. Now that both [REDACTED] are normal, with respect to the concentration of lead in their blood, they may certainly (unless there is some adverse reason which does not relate to this problem) be returned to their former jobs. It would be presumed that whatever steps were or are required to surround this work with suitable precautions has been attempted, and if the occupational exposure has been adequately controlled, there is no reason for being concerned by the fact that these men had abnormal amounts of lead in their bodies some months ago.

As to your third question or request, I can only suggest that there are two possibilities here that need to be examined further if there is any doubt about the validity of the observations that have been made by you or for you up to the present time. The one concerns the opportunities for exposure to lead which reside in the work being done by various individuals. I have no reason whatever to doubt the competence of your people in the measurement of the atmospheric contamination with lead, and I think it unlikely that anything of great importance in the conditions surrounding the work has escaped their observation. On the other hand, I have seen dangerous habits of work on the part of a specific individual, which defeated the otherwise safe handling of environmental conditions. Perhaps some experienced person should make point of observing the workmen to discover how they manage to subject themselves to dangerous exposure. (Incidentally, it is most unlikely that anyone of these men should be exposed to lead significantly through other than occupational sources. A man may be working at another job (moonlighting) which subjects him to exposure to lead, but the adult is hardly ever exposed otherwise. This does not mean that the troublesome case should not be investigated, but years of experience have taught us that the search usually yields negative information.)

The other matter which should be looked into, if this has not been done thoroughly, is the degree of precision of the analytical procedures which are carried out in your laboratory of industrial hygiene and toxicology. I do not remember the details of this matter, whether or not we cross-checked a series of samples with your people, and I am not bothering to inquire at this time. Suffice it to say that, in my view, if for no other than medico-legal reasons, a certain amount of

cross-checking should be done periodically. One of the most serious problems in the courts and compensation hearings in this period is the uncertainty of such analytical results as these. The Bio Science Laboratory is a case in point. I run into their results frequently, and I have no idea how they compare with ours, for example. I have some reason for distrusting them, but the trouble is that I have no sound evidence one way or the other. Moreover, it is of great importance to know what the potential error of a result - say on the blood - may be. How, for example, does one interpret the report of a finding of 0.07 mg. per 100 grams in a sample of 10 grams of blood. In this Laboratory in which the error of this type of analysis is approximately ± 0.01 , this may signify a level of 0.08 or one of 0.06 mg. per 100 grams. It is of great importance which it is, for 0.08 is in the realm of danger, while 0.06 is not. At this threshold point, the possible size and sign of the error is crucial, and that is why we perform parallel or, at times, multiple, analyses.

I would suggest that you consider what I have said above, and decide what if anything additional you would like to discuss with me, or what you might wish us to do, by way of checking or anything else. It may then be appropriate to consider a consultation fee. So far all the Laboratory is out is the time it took me to write this letter. I may say, in further connection with this, that I have intended writing to you as to whether your Company would find it possible and desirable to lend some support to the Laboratory at this time. I shall not take up this question in this letter, for I would feel awkward in so doing. However, after we get this behind us decently, I shall write to you in some detail about our situation, and the future of this Laboratory in its relation to American industry. I am sure that you will be interested, and I hope that some of the executive group in your Company will think that some tangible interest on their part in the Kettering Laboratory would not be amiss.

Sincerely yours,

Robert A. Kehoe, M. D.

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