

SO. 1-7700

March 26, 1959

Mr. J. A. Spence
Standard Oil Company of California
225 Bush Street
San Francisco 20, California

Dear Mr. Spence:

I have gone over the proposed field study and it seems entirely satisfactory to me as a first look at this problem. I have but one item to add. It seems to me now, somewhat as a deviation from my advice to you over the telephone, that it would be well to collect two samples from each man who is to be included in the subsequent observations, prior to the initiation of the use of gasoline containing 3 ml. of TEL per gallon of gasoline. As I understand the situation, the gasoline now in use in this garage contains somewhat more than 1 ml. of TEL per gallon. If I am wrong in this, then this suggestion can be ignored.

I was talking in a room in which a meeting was in progress, and while I heard reasonably well, it did not sink into my consciousness, until later, that your observations in this garage had indicated that the concentration of airborne lead was actually near the threshold value for industrial exposure. This finding, if I am correct in my interpretation of your statement, is nothing short of remarkable. I find it very difficult, indeed, even now, to believe that it is valid, and so in the haste of our conversation, I rejected it or ignored it more or less automatically. Please do not misunderstand me. I have no reason to doubt the technical precision of your determinations, but this situation as described by these results is entirely outside our experience. If the data obtained are representative of the facts, this must be a most unusual garage from the aspect of activity and ventilation. In any case we had better look at the status of the men who work there, with respect to lead absorption, before embarking upon any change in the environmental conditions. Because of the variability of the urinary excretion of lead from day to day and throughout the day, we had better have a sufficient number of preliminary results to have some statistical weight, and, therefore, I suggest that spot samples of the urine of the 10 men be obtained on two successive days in the mid-week (or end of the week, not after the weekend), or in the morning (or the beginning of a shift) when the men come to work, and in the evening (or at the end of the shift). The 20 samples can be counted on to demonstrate whether or not these men are excreting lead at a higher than normal rate, and this is an highly important consideration at the outset.

It may be that these men should have complete physical examinations and certain other items of laboratory tests, if they have not had these previously or periodical in the course of their employment. Certainly their medical and employment histories should be reviewed carefully as a preliminary, in order to establish their reasonable fitness as subjects for these observations, and their reasonable freedom from other occupational exposure to lead. Their suitability as subjects for these observations will depend to some extent upon the duration of their employment under the present conditions of exposure to lead. It is not imperative, I should say, that we have detailed medical observations as a base line, but I think it may well be necessary to have such information and records at some time in the course of the study.

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In the matter of my acting as a consultant to your Company in this relationship, I welcome the idea, since I had some concern, in view of my long relationship to Ethyl Corporation and your primary interest in the situation of your own Company, as to whether you were in position to make use of our long and valuable experience in this field. It will not surprise Dr. Curtis, I am sure, and probably will be no surprise to you, that I feel a fairly heavy burden of professional responsibility for the safety of the practices of the petroleum and automotive industries in relation to tetraethyl lead or its homologues. I shall be very sorry, indeed, and would indeed, feel some guilt, if the use of these materials should develop into a genuinely hazardous situation. I am relieved, therefore, probably beyond the realistic extent of my own responsibility, to be able to have some first hand knowledge of the sequence of your activities in this direction.

May I say that I think of this as a function of The Kettering Laboratory, and that I shall turn over to the Laboratory any financial returns which come to me in this activity, as I do in others of a similar nature. This may or may not satisfy your own wishes in this matter, in that you (or your legal people) may wish to bind me in some professional relationship to your Company. Be that as it may I shall be prepared to advise you in this matter as well as I can, without regard to any personal compensation. I could, for example, bill you, through the Laboratory, for the services rendered by others, and include in this such charges for my own time as would seem mutually reasonable, beyond those included in the administrative overhead charges of the Laboratory that are represented in the cost per analysis.

Very truly yours,

Robert A. Kehoe, M. D.

RAK:ss

P.S. We shall send off to you at once, a package of containers for the collection of samples of urine, with suitable instructions, and will follow this shipment up with others as indicated, up to the number of four hundred or somewhat more. If more are required, these can be supplied. I need emphasize only one point in the procedure of collection. It will be obvious to you, I am sure, that the slightest contamination of a sample of urine, creates a serious and almost insurmountable problem. Every effort should be made, therefore, to secure the maximum degree of cleanliness on the part of each individual contributor of a sample on every occasion. This usually means careful bathing, and, even then, meticulous care in handling the container and its covering cap so as not to contaminate either these or the urine as it flows into the container. Since the cost of the shipping and the analyses is considerable, a bit of special care and supervision here is justified.

R. A. K.

cc: Dr. L. E. Curtis
Mr. J. L. Cooley