

February 5, 1944

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Mr. E. C. Andrews,
Ultra Life Laboratories, Inc.,
East St. Louis, Illinois.

Dear Mr. Andrews:

Having sent you a report by wire yesterday, it seemed wise to follow it up with a few words of explanation.

First, let me say that the examination of materials from any tank that has contained either gasoline or petroleum oils, is likely to show lead if examined by sufficiently sensitive methods. Therefore, you are not likely to find a tank that has been used in the petroleum industry that will be entirely lead free until it has been thoroughly cleaned. The reason for this is two-fold; (1) the entire history of the use of these tanks is often difficult to obtain, and (2) petroleum products in general are likely to contain small quantities of lead. The latter is true not only because of the use of a lead compound in gasoline, but also because gasoline and oils are quite commonly treated with litharge and caustic soda in order to remove sulfur compounds from them. Some of the lead sulfide thus formed remains in suspension and settles out on the bottom of the tank over a considerable period of time during the storage of these products. As a consequence of these facts, the lead which we found in these two samples may be of very little importance. It may well be true that if these tanks are thoroughly cleaned out so as to remove all evidence of sludge, scale, and other foreign material, they might then be quite satisfactory for your purposes. It is for this reason that the methods of sampling these tanks are not very satisfactory. In any case, the material from tank #5 contained only a very small quantity of lead, and I would be inclined to suspect that if this tank were properly cleaned, it would be entirely satisfactory for your purposes.

For your further information, let me point out that practically all materials are found to have minute traces of lead in them when analysed by sufficiently sensitive methods. This is recognized by governmental authorities, and for this reason a tolerance has been set, permitting the presence of lead up to a certain low concentration. Generally speaking, the lead content of food materials represents only a small fraction of one part per million by weight. For this reason it would be of some

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practical importance to you to take a sample, or perhaps a series of samples of your product at various stages in the process of manufacturing in order to ascertain whether there is any significant lead contamination, and if so, what is its source. In any case, I should consider it advisable to check a sample of the material which you will store in this tank some time after the tank has been filled with it. In this way you will be able to determine whether the tank has caused any contamination of the product.

Very truly yours,

Robert A. Kehoe, M. D.

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