

May 24, 1935

Mr. W. A. Reanier
White Oil Sales
Associated Oil Company
79 New Montgomery Street
San Francisco, California

Dear Mr. Reanier:

Your letter of April 26th (File 15-1-JFJ) addressed to Mr. Sam Wagner of the Ethyl Gasoline Corporation with respect to a letter of Mr. Joseph Schneider's has been referred to me from the New York office of the Ethyl Gasoline Corporation. In making reply to Mr. Schneider's questions, it is probably just as well to make clear my connection with this whole matter for your information. As Director of the Medical Department of the Ethyl Gasoline Corporation I have been responsible for the promulgation of precautionary measures for the handling of Ethyl Fluid and have acted as advisor to the Ethyl Gasoline Corporation in all matters concerned with public health aspects of its business. In this connection it is worth while, perhaps, to point out that the questions which Mr. Schneider has in mind have obviously been in the minds of a great many people for a number of years, and in my position of peculiar responsibility this has been the uppermost question to be considered. It is scarcely likely that I should take the position that the Ethyl Gasoline Corporation was justified in promoting any commercial enterprise which endangered in any way the health of the American public. This brings me to state my second point of contact with this question in that as a member of the medical faculty of the University of Cincinnati, and as Director of the Laboratory of Applied Physiology, I have directed most of the experimental work which has been carried on in order to determine whether or not there is any danger associated with the use and distribution of leaded gasoline. My primary responsibility is, of course, that of a medical investigator and I am in the capacity of advisor to the Ethyl Gasoline Corporation only by the accident, so to speak, of having been associated with this experimental problem from its inception.

Now having disposed of myself and my connections, I should like to outline briefly the experimental work which has been done in this laboratory and elsewhere over a period of years on this problem. The first investigations made

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were carried out at the United States Bureau of Mines Experiment Station as a study of the influence of the lead in exhaust gases. This consisted of a long experimental program which resulted in the conclusion that the amounts of lead inhaled by the most exposed individuals over a long period of time could be regarded as hygienically insignificant. From their observations they concluded that the lead content of gasoline would have to be increased fivefold or thereabouts before evidences of lead accumulation could be observed even after long exposure. The next published report was that of the United States Public Health Service in which a study of filling station employees and garage mechanics was carried out in a very painstaking manner to determine whether or not any evidences of lead absorption had occurred among these persons exposed to the most serious hypothetical dangers. This investigation resulted in the statement that no evidence of danger to the public health had been found and that there was no reason for preventing the use and distribution of leaded gasoline. The next official investigation was that of the British Ministry of Health who reviewed all of the experimental work which had been done, carried out further crucial experiments of their own, and verified the findings of the American investigators.

During the above period and since that time, systematic investigations have been carried out in this laboratory in the study of the same problem. The methods of study have been refined from time to time and a large number of the most severely exposed persons have been studied. No evidence has been obtained to indicate that the distribution of leaded gasoline constitutes in any way a danger to the public health. In fact it can be stated now with certainty that neither of the occupations, namely that of filling station employee and garage mechanic, present any significant industrial exposure to lead compounds. In view of the fact that these groups of workmen are much more exposed than are any individuals of the general public, it seems now quite certain that there is no lead hazard to the community associated with the use of leaded gasoline containing present concentrations of lead.

There is, I believe, no problem in connection with the public health which has been more thoroughly and more exhaustively studied than this question of leaded gasoline, and it is entirely proper that this should be the case since if there were a danger, it would be so widespread as to defy any kind of regulation or precaution. I merely state the fact that it has been so carefully investigated in order to demonstrate a point which I wish to make which is that it is inconceivable that any industry should take a chance on a business enterprise which involved possible danger to the public in general. To do so without

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adequate investigation would be indeed foolhardy from a purely commercial point of view.

Now as to the question of warnings to the public in the form of signs on pumps etc. It must be recognized that at the time these precautionary measures were first instituted, there was not adequate evidence as to what might be the effect of distribution of this gasoline over a long period of time. The investigations of the United States Public Health Service gave no information on the effects of exposure beyond a period of two and a half to three years. Most of the persons studied had been exposed not longer than two years. As a consequence of this, the Public Health Service felt that it was advisable to be cautious and to institute as great care as was possible in the handling of gasoline. Therefore, the public was warned that the gasoline contained lead and that they should handle it with certain care. In fact this warning was issued with the idea of so informing them that they need not buy gasoline containing lead except through choice. It is now something over ten years and as investigation has proceeded it has been increasingly apparent both by the nature of the type of experimentation done, and as a consequence of the time which elapsed, that the handling of leaded gasoline and the use of leaded gasoline in automobiles is not dangerous in any way. It is my personal opinion as the most experienced investigator in this field, and as the one person whose responsibility is greatest in the matter, that there is not one shred of evidence to indicate that leaded gasoline is in any way more dangerous in relation to the public health than is any other type of gasoline. However, I should not advise the elimination of signs on the pumps or of any other precautionary measures. Gasoline which is devised for the purposes of use in motors may for a number of reasons be unsuited for use elsewhere. This may be increasingly true of future gasolines. Therefore, gasoline as an automobile fuel should be labeled to indicate that it is for that purpose and no other. As an example of what I mean, let me point out that leaded gasoline is unsatisfactory in a measure as a dry-cleaning fluid or as fuel for stoves and lamps. Moreover it should not be used in the form of a spray on motor parts or on motors particularly when the latter are hot. Moreover, gasoline itself is a somewhat dangerous material and, in my opinion, any type of warning which tends to caution people to handle it with greater care, is a distinct advantage. For these reasons, therefore, I consider it advisable to maintain the present precautionary measures with relation to leaded gasoline.

In order to make somewhat clearer the background of the experimental work which has been done on this subject, I am enclosing herewith a copy of the latest

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article on the subject in which the latest experimental observations of this laboratory are reported. This article contains references to all the literature on the subject and provides the means of obtaining all the documentary evidence that is available.

In addition to what I have said above, I should state that an article is now almost ready for publication in which still more conclusive and refined experimental observations are reported. This article will appear in medical literature at a very early date.

I trust this will give you the information which you require for Mr. Schneider, but if there is anything further, please do not hesitate to let me know.

Very truly yours,

RAK:is

Robert A. Kehoe, M.D.