

# ETHYL CORPORATION

RESEARCH AND DEVELOPMENT DEPARTMENT

RESEARCH LABORATORIES • 1600 WEST EIGHT MILE ROAD  
FERNDALE 20, DETROIT, MICHIGAN

February 28, 1962

Dr. R. A. Kehoe  
Kettering Laboratory  
College of Medicine  
Eden & Bethesda Avenues  
Cincinnati 19, Ohio

Dear Dr. Kehoe:

First I want to acknowledge receiving your letter of February 12, in which you outlined the reasons for the delay in finalizing the report of the field investigation on TML. I believe we covered all phases of the program while Howard Hesselberg and I were in Cincinnati on February 14.

In our meeting you indicated that you probably could have a preliminary meeting with members of the U.S. Public Health Service by March 1 to obtain their reaction to the results of the West Coast field program. Assuming the reaction to be favorable toward the use of TML and the other light lead alkyls at the level of 4.23 grams of lead per gallon, we would then arrange for the meeting with Adm. Biggs for approximately two weeks later. At this meeting you indicated the report of the field program should be available.

I agreed to furnish you with information on our experience in marketing the lighter lead alkyls. Our Refinery Technology and Economic Evaluation groups have made a study of the economies of lead usage to give us some idea of the probable relative quantities of TEL and the lighter alkyls which might be used domestically by the petroleum industry. Based on the present price structure, which includes a premium for the lighter alkyls, TEL should account for approximately 92% of the total. The study also included a condition where no premium would be charged for the lighter alkyls. Under this situation, which would be the most favorable for the use of the lighter alkyls, TEL should account for approximately 69% of the total lead used.

For the year 1961 and, again, based on the present price structure, some 7.65% of our antiknock business was TML or other lighter lead alkyls. This would indicate that we came very close to the estimated.

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consumption figure. We have a continuing antiknock evaluation program in progress to assist customers in determining which antiknock will best serve their individual requirements. The program has included some 338 fuel blends, both regular and premium, from 93 customers and represents an estimated 57% of the U.S. gasoline production. With this background we would predict that the use of lighter lead alkyls will substantially increase if the price of the lighter lead alkyls should approach that of TEL.

In connection with the 4.23 gm limitation, perhaps a brief review of our forecast and actual use concentrations since the discussion with USPHS in January 1959 is in order. These data are shown in the following table.

Lead concentration (grams/gal) for  
U.S. pool gasoline

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| <u>Year</u> | <u>1959 Forecast</u> | <u>Actual</u>    |
|-------------|----------------------|------------------|
| 1959        | 2.325                | 2.093            |
| 1960        | 2.547                | 2.051            |
| 1961        | 2.769                | 1.977            |
| 1962        | 2.991                | 1.966 (forecast) |
| 1963        | 3.213                | 2.019 (Estimate) |

The above pool figures indicate a definite decline through 1962 and thereafter assume a gradual increase. Despite this, however, during the past two years a number of both large and small refiners have taken advantage of the 4.23 gm limitation on TEL as it has given them considerable flexibility in plant operation. They are anxious that the limitation of 4.23 gm include the lighter lead alkyls.

I trust this information will be helpful in your USPHS discussion and if there is any question please get in touch with me.

It was indeed a pleasure to have the opportunity to sit in your meeting on February 14, and may I add the medical program was exceptionally well presented.

I will be waiting to hear from you following your Washington meeting and we will plan the next step in our program at that time.

Sincerely,

  
Dan M. Guy