Marathon Petroleum Company LP

November 16, 2018

Mr. Sam Wade
Branch Chief
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Marathon Petroleum Company comments on California Air Resources Board 5th co-processing workshop

Dear Mr. Wade,

Marathon Petroleum Company appreciates this opportunity to provide comments on California Air Resources Board (CARB) 5th co-processing workshop held on October 19, 2018. Marathon Petroleum Company is a refiner and marketer of transportation fuels in California therefore a regulated party under the Low Carbon Fuel Standard (LCFS).

This workshop focused on the accuracy of the ^{14}C test method as its use in determining quantities of renewable fuel co-processed with petroleum oil was in question. Stakeholder presentations showed ^{14}C detection was accurate at levels of 0.43 weight percent and greater, statistically supported by Dr. David M. Rocke of University of California, Davis.

Marathon Petroleum Company primary concern with this approach is its application to a petroleum refinery. When a co-processed oil is charged to an operating unit such as a Fluid Catalytic Cracker (FCC) it undergoes both catalytic cracking and fractionation, the molecules will behave much differently than the ones measured by stakeholders in the presentation on the accuracy of ^{14}C testing. Fractionation alone will separate the initial quantity into multiple smaller quantities reducing the amount measured in a product stream. For example, if a renewable material was charged to an FCC at 0.5 weight percent of its petroleum counterpart and passed through catalyst that involved rearranging the initial molecules into new ones and a fractionation step to separate the new molecules by boiling point into three parts, the resulting renewable content in each stream recovered would be one third of the initial 0.5 weight percent. Well below the 0.43 weight percent measurement limit determined by stakeholders.

A second concern Marathon Petroleum Company has is the variability in ^{14}C testing based on renewable feedstock choice. For example, Bruce Buchholz from the Lawrence Livermore Laboratory highlighted in his presentation that ^{14}C is contemporary thus the level of ^{14}C varies over time effected by both natural (for example, tree age) and man-made conditions. For an application which may utilize various natural or man-made sources of feedstock requiring the ^{14}C method may limit the number of available sources for fuel feedstock to ensure the ^{14}C is at levels detectable.

Because of the challenges highlighted above Marathon Petroleum Company prefers the use of the statistical mass balance yield using ASTM approved methods to quantify the effects of a feed stock due to processing conditions such a catalytic change and fractionation. The refining industries faith in the statistical mass balance yield is extensive as it is used in the design of equipment, near term operating decisions and capital improvement projects. The statistical mass balance approach provides a known history of yields and yield changes due to the operation of a unit, therefore, is well suited to establish a baseline by which ARB may use to quantify the amount of renewable fuel in the products any processing unit will output.

Therefore, Marathon Petroleum Company would recommend CARB include the statistical mass balance yield approach as an option for renewable fuel quantification in co-processing applications.

Thank you for this opportunity to comment on this important topic.

Brian McDonald

Manager, Policy and Regulatory Affairs