UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
AIR AND RADIATION

The Honorable F. James Sensenbrenner, Jr.
Vice Chairman, House Committee on Science,
Space and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Sensenbrenner:

This is in response to your July 5, 2011, letter to Administrator Lisa Jackson concerning Clean Air Act waivers that allow the use of up to 15 percent ethanol in gasoline (E15). The partial waivers allow but do not require the introduction of E15 into commerce for use in model year (MY) 2001 and newer light-duty vehicles (cars, light trucks and other passenger vehicles). You express concern that E15 will cause engine damage and reduce fuel economy. Administrator Jackson requested that I respond to your letter on her behalf.

In your letter, you asked four questions concerning the potential impact of E15 on vehicles and engines. Our answer to each of your questions follows.

1. *Did the EPA consider the effects E15 would have on engine durability and fuel efficiency before granting its waiver?*

   The EPA relied on the extensive test data and analysis in the record for the waivers, including the results of Department of Energy (DOE) testing. DOE testing involved aging (or accumulating mileage) on whole vehicles, so it provided data on the long-term effects of E15 on engines and other vehicle components related to emissions.

   Since the test cycle used in the study is more aggressive than typical in-use driving, it provided a robust means of determining E15's impact on the durability of all vehicle components. These effects were then analyzed in the vehicle tear-down portion of the study conducted for MY2007 and newer vehicles. The tear-down showed no particular adverse effects from E15 use.

   The DOE testing along with other information -- several CRC reports, the EPA pre-production and in-use compliance data, manufacturer certification and in-use testing, and manufacturer defect reports -- provided relevant information on other potential E15 impacts, including on engines, evaporative emissions, materials compatibility and driveability.

   After a thorough review of all this information, the EPA's engineering analysis, as explained in the waiver decisions, concluded that as manufacturers designed and built vehicles to meet tighter emission standards, they succeeded in developing more sophisticated emission control systems and engines that could operate on mid-level ethanol blends, including E15.

The EPA did not consider the direct effects of E15 on fuel economy in determining whether vehicles, engines and equipment met emissions standards, which is the statutory test for making waiver decisions.

2. *Is the EPA confident that E15 will not damage car engines in model years 2001 and later?*

   The Clean Air Act specifies that to grant a waiver under CAA §211(f)(4), the EPA must determine whether available data and analysis demonstrate that a new fuel will not cause or contribute to failures of emission standards.

   For E15, the EPA determined that the extensive data available on E15 emission impacts demonstrate that E15 will not jeopardize compliance by MY2001 and newer cars and light trucks. In making that determination, we considered the impact of E15 on materials and driveability as well as on emission controls.

   The available information, including the information demonstrating that MY2001 and newer vehicles will continue to meet emission standards on E15, indicates that E15 use in these vehicles will not result in damage to their engines.

3. *What effect does the EPA believe that E15 will have on fuel economy?*

   As we described in the Renewable Fuel Standard and the E15 labeling rulemakings, ethanol has approximately 33% less volumetric energy content than conventional gasoline. A recent study by DOE involving 16 light-duty vehicles from model years 1999 to 2007 found that, when compared to E0, the average reduction in fuel economy was 3.7% for E10, 5.3% for E15, and 7.7% for E20[1].

   E10 now makes up over 90% of the U.S. gasoline market, so fueling with E15 would result on average in an incremental reduction in fuel economy of approximately 1.6% compared to currently available gasoline.

4. *Does the EPA believe that its recent labeling safeguards for E15 will be sufficient to prevent misfueling in car and truck engines older than model year 2001 and in small engines?*

   In designing our E15 misfueling mitigation program, we drew on our successful program for transitioning the diesel market from low to ultra-low sulfur diesel (USLD) fuel. For the E15 program we established the same measures used for the USLD program – labeling of retail pumps, clear identification of products through product transfer documents, implementation surveys and a prohibition against misfueling by fuel providers and consumers. We also anticipate a similarly effective industry-led public education and outreach campaign.

   We plan to work with stakeholders to monitor E15's entry into the market and the effectiveness of misfueling mitigation efforts. If further efforts are needed, we will work with stakeholders to take appropriate action on a timely basis.

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[1] National Renewable Energy Laboratory, Oak Ridge National Laboratory, Effects of Intermediate Ethanol Blends on Legacy Vehicles and Small Non-Road Engines, Report 1 – Updated (February 2009).

If you have further questions, please contact me or your staff may call Patricia Haman in EPA's Office of Congressional and Intergovernmental Relations at (202) 564-2806.

Sincerely,

Gina McCarthy
Assistant Administrator