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September 19, 2003

Low Sulphur Fuel Oils
C/O Bruce McEwen
Fuels Division, Environment Canada

RE: Reducing the Level of Sulphur in Canadian Off-Road Diesel Fuel

Dear Dr. McEwen,

I am writing to you on behalf of the Ontario Public Health Association (OPHA), a volunteer, non-profit organization that represents many of the people who work for public health units across Ontario. Our members include the physicians, environmental health managers, epidemiologists, nurses, toxicologists, researchers, and policy analysts responsible for maintaining public health in their communities. As such, our members are deeply concerned about air quality and its impact on human health.

I am writing to provide you with feedback on the approach to and design of new Canadian regulations to reduce the level of sulphur in off-road diesel fuels as requested Environment Canada with its discussion paper, "Reducing the Level of Sulphur in Canadian Off-Road Diesel Fuel".

Background: U.S. EPA Proposal

In April 2003, the U.S. EPA proposed a rule that would reduce sulphur levels in off-road diesel fuel to 500 ppm beginning in 2007 and to 15 ppm beginning in 2010. Under this proposal, rail and marine diesel fuel would be exempted from the 15 ppm limit. The proposal would provide a transitional period between 2006 and 2014 in which smaller refineries could be exempted from the sulphur limits subject to a complex emissions trading framework. The U.S. EPA has also requested comments on the option of a one-step 15 ppm sulphur limit that be applied to all off-road diesel fuel, including rail and marine diesel fuels, by 2008.

The U.S. rule respecting sulphur levels in off-road diesel fuels was released along with a rule respecting new emission standards for off-road engines (i.e. Tier 4 standards). The U.S. EPA has determined that the Tier 4 emission standards for off-road vehicles & equipment cannot be achieved without changes to the sulphur levels in off-road

diesel fuels.

Background: Environment Canada Proposal & Options

Environment Canada has announced its intention to develop emission regulations for off-road diesel engines that align with those proposed in the United States. It has also announced its intention to align Canadian requirements for sulphur levels in off-road diesel fuel with those proposed by the United States. Environment Canada is seeking advice to determine if it should:

- Develop a simple regulation that limits sulphur levels in off-road diesel fuels to 500 ppm by 2007 and 15 ppm by 2010 with no transitional package; or
- Develop a more complex regulation that provides flexibility in terms of time-lines and an emissions trading framework that applies to the transition period.

With either approach, Environment Canada has indicated that will exempt marine and rail diesel fuels from the 15 ppm sulphur limit.

Low Sulphur Off-Road Diesel would Significantly Reduce Air Emissions

Low sulphur fuels improve air quality in three ways: by directly reducing emissions of sulphur compounds from engines in which they are used; by increasing the effectiveness of emission control devices such as oxidation catalysts; and by enabling the use of advanced emission control devices that are sensitive to sulphur.

The U.S. EPA has estimated that, when its new sulphur standards for off-road diesel are combined with its new emission standards for off-road engines, emissions of particulate matter (PM) and nitrogen oxides (NO_x) from off-road diesel engines will be reduced by 95 and 90% respectively, while a number of other smog-forming and toxic air pollutants will be reduced by 17 to 97% (see Table 1 below).

PM2.5	NO _x	SO ₂	VOC	CO	Benzene	Formaldehyde	Acetaldehyde	1,3-Butadiene	Acrolein
62	31	97	17	57	30	30	30	31	30

(Environment Canada, 2003)

Low Sulphur Off-Road Diesel would Produce Significant Health Benefits

Poor air quality presents a significant risk to the health of Ontario residents. The Ontario Medical Association (OMA) has estimated that air pollution in Ontario contributes to about 1,900 premature deaths, 9,800 hospital admissions, 13,000 emergency room visits, and 47 million minor illness days each year in Ontario.

The U.S. EPA has estimated that fuel and emissions rules directed at off-road equipment could produce significant health benefits; preventing approximately 9,600 premature deaths and 8,300 hospital admissions per year in the United States when fully implemented in 2030. It has valued these, and the other air pollution health benefits, to be worth approximately \$550 billion for the period of 2007 to 2030 or approximately \$80.6 billion per year in 2030. It has also estimated that

these health costs outweigh the implementation costs, estimated to be about \$1.5 billion annually, by about 54 to 1 (Environment Canada, 2003).

While the health benefits of the fuel and emission standards combined have not been estimated for Canada, on the basis of population size alone, it can be crudely estimated that the avoided health outcomes in Canada could be as high as 10% of those estimated for the United States (i.e. 960 premature deaths and 830 hospital admissions per year in 2030)(Environment Canada, 2003). With potential health benefits of this magnitude in the balance, it is essential that the government act quickly and decisively.

Simple Regulatory Approach, Tighter Timelines & Fewer Exemptions

From a public health perspective, we would like to see sulphur levels in off-road diesel aligned with those for on-road diesel as quickly and as simply as possible. In Ontario in 2002, sulphur levels in off-road diesel fuel averaged 3,080 ppm while sulphur levels in on-road diesel averaged 350 ppm. The OPHA has been actively encouraging municipalities in Ontario to purchase low sulphur fuel for their off-road fleet because of the high volume of emissions associated with the use of conventional off-road diesel.

Therefore, we support the simple regulatory option described by Environment Canada and would not support a regulation that allowed an extended transition period. In fact, we would strongly support the policy option that has been released for comment by the U.S. EPA that calls for a one-step 15 ppm sulphur standard for all off-road diesel fuels, including rail and marine diesel fuels, by 2008. We see no reason to exempt rail or marine diesel fuels from the 15 ppm sulphur limit as we know that both trains and ships can be significant contributors of air pollution in urban centres that are transportation hubs. This option would reduce costs associated with double and triple storage facilities, reduce misfuelling concerns, streamline administration costs, labelling and tracking issues associated with the 2 and 3-steps options, and maximize health benefits for populations across the country.

We would also like to see economic tools used to encourage early adoption. We believe that a large number of organizations would be willing to purchase low sulphur fuel for their off-road equipment and vehicles if a tax differential eliminated or reduced the cost differential that can exist between low sulphur and conventional diesel.

Sincerely,

Dr. Jack Lee
Executive Director

c.c.: David Anderson, Federal Minister of the Environment
Anne McLellan, Federal Minister of Health
Christina Mills, President, Canadian Public Health Association
Connie Utrecht, President, Ontario Public Health Association (OPHA)
Kim Perrotta, Air Quality Coordinator, OPHA