August 15, 2005

Kim Heroy-Rogalski
California Air Resources Board
9528 Telstar Avenue
El Monte, CA 91731

RE: Diesel Off-Road Equipment Measure Preliminary Regulatory Concepts

Dear Ms. Heroy-Rogalski:

We are writing to you on behalf of the Union of Concerned Scientists, Natural Resources Defense Council, Coalition for Clean Air, American Lung Association of California, Environmental Defense, California Environmental Rights Alliance, Sierra Club California, California Safe Schools, and Coalition For A Safe Environment to express our strong support for the preliminary regulatory concepts for the proposed air toxic control measure to reduce diesel particulate emissions from diesel off-road equipment. Diesel exhaust continues to adversely affect public health in communities throughout California. Construction equipment currently accounts for about 30 percent of diesel particulate matter (PM) emissions statewide, and represents an even larger percentage in urban, densely populated areas where more people are exposed to these harmful emissions. We applaud CARB for moving forward with this regulation. The preliminary concepts presented by CARB staff in the July 13th and July 19th public workshops are a solid foundation for a regulation which achieves real, quantifiable emission reductions and reduces the public exposure to toxic diesel emissions. We would like to take this opportunity to provide comments regarding ARB's regulatory development, the preliminary concepts presented by ARB, and the construction industry alternative proposal.

A topic of continued concern is the request by regulated parties to use Moyer funds to comply with ARB regulations. When developing regulations, ARB must make clear the applicability of Moyer funding and how eligibility will be affected by new regulatory requirements. The Carl Moyer Program has been extremely successful at achieving cost-effective reductions of nitrogen oxides (NOx) and PM from a variety of diesel emission sources. The program is based on providing grant funding for projects that go above and beyond the emission reductions that are required by law. Incentive funds are limited and must be used in a way that generates emission reductions above and beyond what is already required. These funds should not be used for meeting emission reductions that are required by law.

With regards to the off-road in-use regulation, we are concerned that CARB is not obtaining the equipment inventory information needed to develop the most effective rule. Information regarding the age and distribution of construction and off-road equipment, including annual hours of use and useful life, is limited. The equipment survey initiated by ARB is critical for filling in the gaps in data and developing a regulation based on the best possible information. We encourage CARB to take the extra steps necessary for increasing the response rate of the equipment survey.

Comments on Proposed Regulation

Idling Limits We are very encouraged to see ARB's proposal to include idling limits for off-road construction equipment. However, in the July 13th workshop, it was unclear what type of requirement would be included in the regulation and if time limits would be enforceable. Requiring owners and operators to have an idling policy is a good step, but there must be an enforceable idling limit established similar to the on-road diesel truck idling limits established by ARB. In addition, individuals who witness idling practices inconsistent with ARB's regulation must have the means to

report violators to ARB and ARB the resources to penalize violators of its adopted regulations. We realize off-road equipment varies significantly in horsepower and functionality, but simply requiring an idling policy without a meaningful enforcement mechanism in place is insufficient. We would be glad to work with ARB and other stakeholders to establish requirements for reducing idling of off-road equipment.

Compliance Schedule The proposed compliance schedule, beginning with the oldest, and most polluting off-road equipment first, is appropriate and should not be weakened. Achieving 100 percent compliance of uncontrolled pre-1996 equipment by Dec. 31st 2011 will make a large impact on emissions from this sector. The amount of flexibility proposed by ARB to meet BACT requirements also makes this timeline more than reasonable. However, with the proposed implementation schedule and BACT alternatives, the 2010 Diesel Risk Reduction Plan goal of a 75 percent reduction in diesel PM over year 2000 levels is unlikely to be achieved. (Please see the attached analysis regarding estimated emission reductions from ARB's proposal.) Modifications to the BACT alternatives, including those suggested below, should be considered to maximize the emission reductions under this regulation.

BACT Options We are supportive of ARB's BACT requirements to attain Tier 4 emission standards or apply at least a level 2 Verified Diesel Emission Control System (VDECS) for all model year equipment. However, model year 1995 and earlier equipment should not be given the BACT option of waiting for a Tier 4 engine if no VDECS is available. This could allow equipment that today is already 25 or 30 years old, meeting no PM emissions standard, to continue to operate for at least another 6 years. Also, the "Wait for VDECS or final Tier 4 engine" BACT description is unclear with regards to availability of Tier 4 engines. The current description seems to imply that a Tier 4 engine or power system must be *installed* within 12 months of becoming available. It is unlikely that Tier 0 and Tier 1 equipment will readily be repowered with a Tier 4 engine, making this BACT option unworkable and potentially a very large loophole.

We suggest that the BACT option of "Wait for a VDECS or a final Tier 4 engine" be limited to Tier 1 and later model equipment, excluding all Tier 0 equipment. In addition, this BACT option must include a replacement component specifying that if no VDEC is available and a Tier 4 engine repower is not applicable, then the equipment must be replaced with the cleanest available piece of equipment.

With respect to Tier 0 equipment, if no VDECS is available at the time of compliance, then the BACT options should be limited to repower or replacement with a Tier 4 certified system, repower or replacement with a Tier 2/3 and Level 2 VDECS, installation of at least a level 2 VDECS, or replacement with an alternative fuel or heavy-duty pilot ignition engine. If the highest level VDECS available at the time of compliance is level 1, then 5 years after application of the level 1 device, either a level 2 or 3 device must be installed, or meet the Tier 4 emission standard. This will effectively limit the amount of time a level 1 device can be used on a Tier 0 engine to 5 years, instead of the proposed across the board deadline of Dec. 31, 2015 for all level 1 devices.

Also, given that Tier 0 and Tier 1 equipment can emit greater than 40 to 50 times the amount of PM compared to engines meeting the Tier 4 standards, we ask that you consider phasing out the use of level 2 devices on this equipment, and ultimately require either a level 3 device or replacement of the engine or equipment. Construction and off-road equipment can be extremely costly. However, by 2020 the newest Tier 0 equipment will be approximately 25 years old making a replacement requirement for most equipment a reasonable option.

Reporting Requirements

The reporting requirements outlined in the preliminary concepts are an essential component to this regulation. Given the level of complexity of this sector and the varied uses of equipment, it is essential that owners and operators report equipment information to ARB. The annual compliance demonstration should also included submission of a letter of compliance to ARB signed by an executive of the company. This will ensure that responsible company officials are aware of the regulation and take responsibility for complying with the regulation. In addition, submittal of a letter of compliance will aid ARB enforcement efforts.

Sensitive Populations
The ultimate goal of the Diesel Risk Reduction Plan is to reduce the exposure of Californians to toxic diesel PM. For this reason, it is important to target emission reduction in areas where the most sensitive populations reside. Construction occurs throughout the state in both rural and urban areas, but is generally concentrated in a specific location for the duration of a construction project. Construction sites located near sensitive land uses such as schools, residences, hospitals and nursing homes should employ the cleanest construction equipment to minimize the impacts on these populations. We ask that ARB consider stronger requirements with respect to these locations. We suggest that construction equipment operating within 1,000 ft of sensitive land uses either be equipped with a Level 3 verified device or meet a minimum of Tier 2 emission standards prior to 2010, a minimum of Tier 3 by 2013, and a minimum of Tier 4 after 2013.

CIAQC Alternative Proposal
We would also like to take this opportunity to comment on the proposal presented by CIAQC as an alternative to CARB's preliminary concepts.

Fleet Averaging Concept Utilizing a fleet averaging method to reduce PM emissions from large fleets can provide some flexibility in how emission reduction targets are met, but implementing such a program has a number of disadvantages. There are substantial concerns that must be addressed if a fleet average is employed to reduce diesel PM emissions from the off-road sector.

Enforceability of emission reductions are a primary concern. Construction equipment on job sites is continually changing depending on the stage of the project. This presents a serious challenge for inspectors and ARB enforcement officials who may visit a job site where only a small portion of the total equipment for a project may be present at any one time. Managing such a program for a sector that includes not only a diverse set of businesses, but also a wide array of equipment, would require extensive administrative as well as enforcement resources.

A fleet averaging implementation may also result in less emission reductions than expected, as companies working on multiple projects could shift equipment to different job sites. Cleaner equipment could be moved to public works projects or those greater than $10 million, while dirty equipment continues to operate at other sites. Also, by not requiring individual pieces of equipment to meet minimum standards, workers who operate older equipment and residents near construction projects that are not required to attain the fleet average will not be adequately protected.

Moyer Funding The CIAQC proposal to allow Moyer funding to be granted to projects for off-road equipment regardless of the regulatory requirements is unacceptable. (See previous comments regarding Moyer funding.)

Proposed Targets and Compliance Date The targets proposed by CIAQC would only slightly improve emissions from the overall fleet of off-road equipment beyond the business as usual scenario. The fleet average targets prior to 2020 of 45 percent by 2010, 60 percent by 2013, and 75 percent by 2016

over year 2000 levels, disregarding the proposed limitations to public or private contracts and monetary thresholds, clearly do not meet the targets of the Diesel Risk Reduction Plan (DRRP). The goal of an 85 percent reduction by 2020 is consistent with the DRRP, however, the greatest health benefit of implementing an in-use off-road regulation is achieving significant, early PM reductions beyond those expected from natural turnover and new engine emission standards.

The proposed reduction targets must also be viewed with respect to the emission reductions that will occur in the absence of the regulation. Based on CARB emissions inventory projections, with adjustments for introduction of ultra low sulfur diesel (ULSD) in 2007 and Tier 4 emissions standards, reductions of PM over year 2000 levels are estimated to be 32 percent by 2010, 49 percent by 2013, 65 percent by 2016, and 80 percent by 2020. Based on the proposed fleet average requirements as noted above, the CIAQC proposal would achieve a maximum of an 11 percent improvement over the no regulation scenario in 2013, with much smaller improvement over the no regulation scenario prior to and after 2013.[1]

An acceptable fleet averaging proposal would have to achieve emission reductions much closer to the goals of the diesel risk reduction plan and apply to publicly and privately financed projects equally. It must also contain safeguards to prevent the shuffling of equipment to meet project fleet average criteria, contain a minimum emission level for all equipment, structured in a way that makes the regulation enforceable, and provide the necessary funding for management and enforcement of such a program.

Thank you for this opportunity to comment on the proposed regulation. We look forward to discussing our comments with you and continuing our participation in the regulatory development of the in-use off-road measure.

Sincerely,

Don Anair
Clean Vehicles Engineer
Union of Concerned Scientists

Diane Bailey
Scientist
Natural Resources Defense Council

Todd Campbell
Policy & Science Director
Coalition for Clean Air

Bonnie Holmes-Gen
Assistant V.P., Government Relations
American Lung Association of California

Kathryn Phillips

[1] These estimates are based on analysis by the Union of Concerned Scientists. Please see attachment.

Manager, California Clean Air for Life Campaign
Environmental Defense

Angela Johnson Meszaros
Director of Policy and General Counsel
California Environmental Rights Alliance

Bill Magavern
Senior Legislative Representative
Sierra Club California

Robina Suwol
Executive Director
California Safe Schools

Jesse N. Marquez
Executive Director
Coalition For A Safe Environment

CC:
Annette Hebert, ARB (Chief, Heavy-duty Diesel In-use Strategies Branch)
Kitty Martin, ARB (Manager, In-Use Controls Section)
Jackie Johnson, ARB
Wayne Sobieralski, ARB
Zerguy Maazouddin, ARB

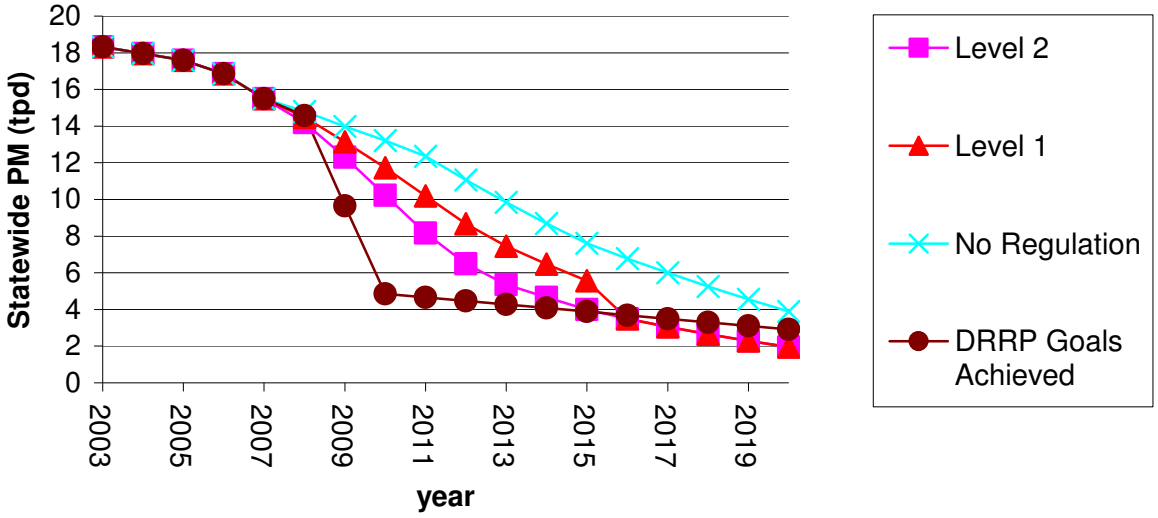
Attachment:

Below are the results of a preliminary emissions analysis of both ARB's proposed concepts as well as CIAQC's proposed fleet average alternative. The analysis is based on the limited amount of data available regarding off-road fleet composition and emission rates, but represents our best estimate at this time.

Effect of BACT Options on Construction Equipment Emissions
Figure 1 shows a comparison of the daily statewide diesel PM emissions inventory from construction equipment under different BACT implementations with compliance dates as specified in the ARB preliminary concepts. The emissions projections do not include the effect of the proposed new engine purchase requirements included in ARB's proposal.

- The **Level 2** compliance scenario assumes all Tier 0, Tier 1 and Tier 2/3 equipment are retrofitted with a level 2 device and achieve 50 percent PM reductions.
- The **Level 1** scenario assumes both Tier 0 and Tier 1 equipment is retrofitted with a level 1 device achieving 25 percent PM reductions and are then upgraded to level 2 devices by December 31st 2015.
- The **No Regulation** scenario uses the latest emission inventory projections for diesel construction equipment from ARB with adjustments for the introduction of ultra low sulfur fuel (ULSD) in mid-2006 and phase in of Tier 4 off-road engine emission standards beginning in 2008
- The **DRRP** scenario assumes that the DRRP goals are achieved.

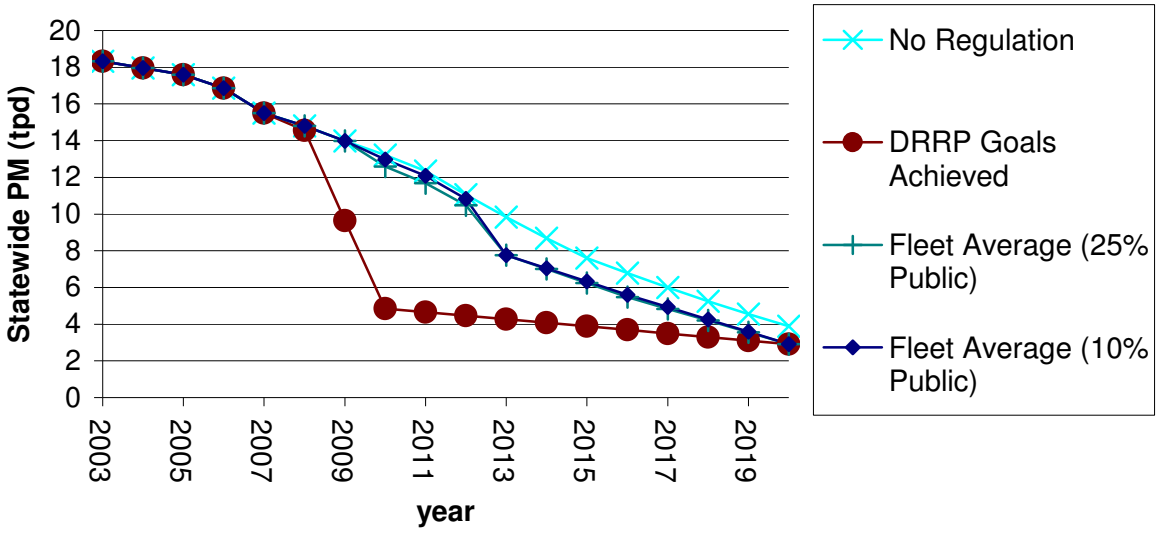
Figure 1. Effect of BACT Options on Construction Equipment Emissions



Effect of Fleet Average Targets on Construction Equipment Emissions
Figure 2 shows a comparison of the daily statewide diesel PM emissions inventory from construction equipment under the fleet average scenario with compliance dates as specified in the CIAQC proposal.

- The **Fleet Average (10% Public)**[2] scenario assumes that 10 percent of construction related emissions are associated with publicly financed projects. Projections assume that emission continue to decrease annually between compliance years for both publicly and privately financed projects. For example, public fleets will meet a 45 percent reduction in 2010 and a 60 percent reduction in 2013. It is assumed that they will meet a 50 percent reduction in 2011 and a 55 percent reduction in 2012. Projections also assume that all projects, regardless of cost, meet the fleet average targets.
- The **Fleet Average (25% Public)** scenario assumes that 25 percent of construction related emissions are associated with publicly financed projects. Projections also assume that emissions continue to decrease annually between compliance years for both publicly and privately financed projects. Projections also assume that all projects, regardless of cost, meet the fleet average targets.
- The **No Regulation** scenario is as described above.
- The **DRRP** scenario is as described above.

Figure 2. Effect of Fleet Average Targets on Construction Equipment Emissions



For further information regarding the emission projection calculations, please contact:
Don Anair
Vehicles Engineer
Union of Concerned Scientists
510.843.1872

[2] According the Association of General Contractors, 21 percent of construction projects are publicly financed.