May 17, 2007

Dr. Robert Sawyer, Chairman and Members of the Board
California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, CA 95812

RE: Support for Proposed Regulation for In-Use Off-Road Diesel Vehicles

Dear Chairman Sawyer and Board Members:

We are writing to you on behalf of the Union of Concerned Scientists, Natural Resources Defense Council, Environmental Defense, American Lung Association of California, Clean Power Campaign, Center for Energy Efficiency and Renewable Technology, Rose Foundation for Communities and the Environment, Concerned Residents of Lockwood Valley in the Los Padres Forest, Steve and Michelle Kirsch Foundation, Communities for Clean Ports, Sierra Club California, Planning and Conservation League, Environment California, California League of Conservation Voters, Regional Asthma Management and Prevention (RAMP) Initiative, Bayview Hunters Point Advocates, Fresno Metro Ministries, Bay Area Clean Air Task Force, Transportation Solutions Defense and Education Fund (TRANSDEF), Coalition for Clean Air and West Oakland Environmental Indicators Project to express our strong support for the proposed control measure for off-road in-use heavy-duty diesel vehicles. This measure will reduce diesel particulate matter (PM) and nitrogen oxide (NOx) emissions from in-use construction and other off-road equipment that contribute to significant local and regional public health risks. However, there are regions of the state that are suffering from the health impacts of severe air pollution and require greater emissions reductions from this equipment than in the current proposal. We urge you to consider strengthening amendments to the staff's proposal in order to make greater progress toward attaining state and federal air quality standards. We ask that you adopt a strong regulation, without delay, at the May 25th hearing to protect all Californian's from the toxic diesel pollution from off-road equipment and to resist attempts to weaken the proposed regulation.

Specifically, we urge the board to:

- Adopt a strong in-use off-road regulation at the May 25th board hearing. We can not afford any more delay in protecting the public's health from off-road diesel emissions.
- Consider strengthening amendments to increase the amount of NOx reductions from the emissions source, short of delaying the adoption and implementation of the rule.
- Develop specific recommendations and guidelines for local governments and air districts, over the next 3 to 6 months, to assist them in protecting sensitive populations from diesel emissions at or near construction sites and preventing toxic hot spots.
- Close a loophole by adopting a sunset to the low-use exemption for the oldest dirtiest equipment by 2015.
- Develop a robust diesel regulation enforcement plan to ensure that regular and consistent enforcement, including equipment inspections, are carried out and seek additional funding to expand staff enforcement efforts.

- Ensure that all future diesel regulations and those currently being developed include a full evaluation of greenhouse gas reduction opportunities as part of the rule development process.

Health Risks and the Diesel Risk Reduction Plan (DRRP)

This measure addresses the second largest source of diesel emissions in the state, and is therefore critical to achieving the goals of the DRRP. CARB committed to the goals of the Diesel Risk Plan seven years ago, recognizing both the toxicity of diesel pollution as a health risk to all Californians and the availability of technology to reduce this risk. Over the ensuing seven years, CARB staff has developed more than 10 regulatory measures targeting sources of diesel particulate matter, with the board ultimately adopting every measure. The sources have ranged from transit buses and garbage trucks to portable and stationary engines. All of these regulations are yielding positive health benefits and reduced emissions through the installation of retrofit controls or faster adoption of cleaner technology. Yet implementing this single measure to reduce diesel emissions from construction and off-road equipments will result in benefits nearly double all the previous regulations combined, preventing an estimated 4,000 premature deaths by 2030. Please see Attachment A for a list of previous rules and their benefits.

Health research since the DRRP was adopted in 2000 has only served to reinforce and validate the need for ARB to continue with an aggressive approach to reducing diesel emissions. Diesel particulate matter has been strongly linked in dozens of studies with lung cancer, premature death, increased hospital admissions, increased respiratory symptoms and disease, and decreased lung function, particularly in children suffering from asthma. Studies published in the past 6 months provide even stronger evidence of the link between particulate matter exposure and heart disease and death[1,2].

Cost of Construction Pollution

The health impacts of diesel pollution impose a burden on all Californians, not only in diminished quality of life, but also through health costs and lost school and work days. Construction equipment alone is estimated to cost California's economy $9 billion dollars annually[3] , a human cost which far outweighs the cost of cleaning up our construction equipment.

The cost of upgrading to new or retrofitted equipment is not insignificant, yet is estimated at less than ½ of 1 percent of the value of construction during the implementation of this regulation. The value of building construction in California tops $60 billion annually, with additional spending on road and highway construction nearing $10 billion. An additional $40 billion dollars in infrastructure bonds have recently been approved and will add considerably to the amount of construction occurring in California.

The cost of compliance will not be borne by the companies and equipment owners alone. The modest increase in costs that will result from the regulation will be covered partly

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[1] Pope CA et al "Ischemic Heart Disease Events Triggered by Short-Term Exposure to Fine Particulate Air Pollution" *Circulation.* 2006;114:2443-2448

[2] Miller KA et al "Long-Term Exposure to Air Pollution and Incidence of Cardiovascular Events in Women" *N Eng J Med* 2007; 356:447-58

[3] Union of Concerned Scientists. "Digging Up Trouble: The Health Risks of Construction Pollution in California" November 2006.

through higher construction costs. The small increase in construction costs needed to fund the clean-up of equipment will be repaid many times over through reduced incidents of heart and lung disease, fewer asthma attacks, and improved quality of life in our communities. In fact, the benefits of this proposed rule outweigh the costs by five to eight times.

Construction Equipment Emissions

Lagging emissions standards from EPA and the long life of equipment have combined to make construction equipment some of the highest polluting diesel engines in California. New engine standards for this equipment were adopted by US EPA in 2004, but do not fully phase in until 2014. As a result, new heavy-duty on-road trucks which already face tighter standards are much cleaner than the construction equipment currently operating in California. For example, the average excavator in California operating for one hour emits as much PM as a new 2007 big rig traveling over 1,100 miles.

Retrofit devices which can reduce PM emissions by greater than 85 percent are now currently verified by ARB for nearly all off-road equipment. Engine repowers for larger equipment are available and can reduce both PM and NOx from long lasting heavy-equipment. Because of the high emission rates of off-road and construction equipment, retrofit and repower projects meet the stringent cost-effectiveness criteria of the Carl Moyer Incentive Program.

Comments on the Proposed Rule

The ARB staff should be recognized for a commendable job developing this regulation over the past three years and working with various stakeholders. Considerable outreach efforts were undertaken, and participation in the rulemaking process has been greater than any other in-use diesel reduction measure to date. Staff has had the challenging task of crafting a rule that achieves the greatest reductions of NOx and PM, meets regional needs for federal air quality deadlines, protects public health and is economically viable.

Staff has made considerable effort to increase the flexibility of this rule at the behest of a diverse array of industry stakeholders. So while the rule has become quite complex, the changes are meant to ease the burden of compliance on the regulated companies. In some cases, these changes have resulted in the loss of emissions reductions. We urge the board to reject any further weakening of the requirements in light of the substantial modifications and flexibility that staff has already incorporated into the rule. *Attachment B highlights the numerous exemptions and flexibility that have been incorporated into this rule proposal, along with suggestions for rule strengthening.*

There are numerous provisions in the proposed rule that we support including idling limits on equipment and the Best Available Control Technology (BACT) retrofit requirements. In addition, the credit for early action including repowers, accelerated replacement and retrofits will encourage companies to act sooner to reduce pollution.

Adopt the In-Use Off-road Regulation at the May 25th Hearing

We can not afford to wait any longer to tackle the public health threat from off-road and construction equipment. This regulation has been planned since the adoption of the DRRP in 2000 and has been under active development for nearly three years. The board hearing date of this regulation has continually been pushed back causing further delay. CARB has already declared the 2010 goal of a 75 percent reduction in cancer risk from

diesel PM unattainable. Without the reductions required by this rule, the 85 percent reduction target in 2020 will also be missed. CARB must adopt this regulation without further delay to ensure that Californians are protected from this toxic pollution and to help towards the goal of attaining the PM2.5 standard by 2015.

Develop Guidelines for Sensitive Sites and Regional Measures

CARB should develop specific guidance for use by local officials, land-use planning agencies, developers and communities for protecting populations that live near large construction sites or concentrations of off-road equipment. In past rulemakings, CARB has recognized the need for additional protections for sensitive sites by including specific regulatory provisions.[4] Construction sites, while many times transient in nature, present a risk of elevated acute exposure to diesel pollution to those who live or work nearby. Sensitive populations, especially the elderly, people with compromised respiratory and cardiovascular systems, and children are most at risk from the adverse affects of air pollution.

The current regulatory proposal is based on construction equipment fleets rather than individual construction projects, and does not guarantee protections for sensitive populations, or for construction workers or others living and working near the site. There are no specific project-based criteria for equipment working at sites near schools, hospitals, or other sensitive areas. While the entire construction fleet will slowly begin to clean-up as this rule is implemented over the next 10 to 15 years, concentrations of highly polluting equipment may still occur. A guidance document, developed by ARB, would assist local agencies and communities to identify the appropriate protections needed for large construction sites and help specify appropriate mitigation measures.

As part of CARB's development of guidelines, specific attention should be given to the actions air districts can take to further reduce emissions from this and other diesel source categories. Some air districts in the state face severe air quality challenges, and need to further reduce NOx emissions from diesel sources. The guidelines should include measures air districts can implement through the California Environmental Quality Act (CEQA), indirect source rules (ISR) or other measures. CARB should work cooperatively with air districts facing severe air quality challenges to identify further reductions of NOx and PM.

Additional NOx Reductions

Greater emission reductions of nitrogen oxides are technologically feasible and can be achieved from this rule. These further reductions will come with additional costs, but they will also prevent additional hospital visits, asthma attacks, and heart and lung disease. Additional NOx reduction from this equipment will also provide critical emission reductions needed to attain federal and state air quality standards in the most polluted regions of our state.

We urge the board to consider strengthening amendments to achieve greater NOx reductions from this rule, short of delaying the adoption and implementation of this

[4] Provisions were included for idling diesel vehicles at schools and specific requirements are included in the stationary diesel regulation.

regulation. The board should adopt the strongest proposal possible at the May 25th board hearing to ensure that the health benefits of reducing diesel emissions from this equipment are not further delayed.

Closing the Low-Use Loophole

The low-use exemption should include a sunset provision by 2015 to prevent equipment with no pollution controls from operating indefinitely. The current low-use exemption, which applies to equipment that operates on average less than 100 hours per year – about one month of operation, encourages fleets to move equipment in this category to avoid cleaning them up. As a result, the percentage of low-use equipment as part of the overall construction fleet is likely to grow over the period of the regulation. In addition, enforcing the low-use provision is highly problematic as each piece of equipment must be inspected to ensure that hours-of-use meters have not been tampered with. ARB adopted a sunset provision in the portable equipment regulation to avoid having highly polluting equipment from operating indefinitely.

Compliance options available when the low-use exemption sunsets include leasing of equipment for the short time that it is needed (less than 100 hours per year). This cost-effective compliance path was not evaluated in the staff report as an alternative to repowering or retrofitting a low-use piece of equipment. Specialty equipment exemptions could still apply to address equipment and retrofit availability concerns.

While we are proposing the date of 2015 as the appropriate date to end the sunset, the board should at least exclude the oldest and most polluting equipment from the low-use exemption at the end of the compliance phase-in period in 2020. Tier 0 and uncontrolled Tier 1 equipment operating in 2020 will be 30 to 50 times more polluting than an equivalent Tier 4 engine, meaning a piece of low-use equipment operating for 100 hours could emit the equivalent of 3 to 5 years worth of emissions from a Tier 4 machine.

Develop a Rigorous Enforcement Plan

A comprehensive enforcement and outreach program must be in place to ensure that emission reductions are actually occurring, and that regulations are consistently and equitably enforced. There are existing concerns that ARB enforcement staff, with less than 20 diesel field enforcement officers statewide, do not have sufficient resources to enforce existing diesel regulations. Passage of this regulation will add an additional 180,000 pieces of diesel equipment to ARB enforcement staff's oversight. Other regulations under development for port trucks and private truck fleets will further strain enforcement resources. ARB must identify and secure additional resources to enforce these regulations.

Education and outreach are critical components to enforcement efforts. ARB must ensure that adequate resources are available for education of and outreach to regulated entities.

Reduce Greenhouse Gas Emissions

This regulation will result in the reduction of black carbon, NOx, and CO2 emissions and these emission reductions will contribute to slowing global warming in addition to achieving immediate health benefits. However, we believe there is additional untapped potential for reducing GHGs from off-road equipment, and the evaluation of GHG reduction opportunities was not an integral part of the rule development process. We

support that the focus of this measure is achieving health benefits through reduction of NOx and PM emissions, and development started well before the passage of AB32. However, future regulations or those currently under development should include analysis of technology and operational strategies specifically directed to achieve greenhouse gas reductions and greenhouse gas reduction measures should be included in the regulatory requirements of each measure when feasible.

An opportunity to achieve further greenhouse gas emission reductions does exist from this rule, especially for airport ground support equipment (GSE). The current proposal gives additional credit for using zero emission vehicles (ZEV) in place of diesel powered equipment, but does not require it. While the potential GHG reductions would have been relatively small from an airport GSE ZEV requirement, there is sufficient technology availability for this type of requirement.

Conclusion

We applaud CARB for moving forward with this critical measure to protect Californians from the toxic PM and NOx pollution from off-road diesel equipment and provide relief from the staggering health toll of pollution from this source. Adoption of this measure will continue California's legacy as a leader in the quest for clean air and the protection of public health. We strongly urge you to adopt the strongest possible regulation without further delay to secure the benefits that this measure will provide to all Californians.

Sincerely,

Don Anair
Senior Analyst
Union of Concerned Scientists

Diane Bailey
Scientist
Natural Resources Defense Council

Kathryn Phillips
Manager, California Clean Air for Life Campaign
Environmental Defense

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

Jose Carmona
Legislative Advocate
Clean Power Campaign

V. John White
Executive Director
Center for Energy Efficiency and Renewable Technologies

Jill Ratner

President
Rose Foundation for Communities and the Environment

A. Swan
Concerned Residents of Lockwood Valley in the Los Padres Forest
Home of the California Condor and Chumash

Susan Frank
Vice President, Public Policy
Steven and Michele Kirsch Foundation

Joel Bush
Executive Director
Communities for Clean Ports

Bill Magavern
Senior Representative
Sierra Club California

Tina Andolina
Legislative Director
Planning and Conservation League

Dan Jacobson
Legislative Advocate
Environment California

Susan Smartt
Executive Director
California League of Conservation Voters

Joel Ervice
Associate Director
Regional Asthma Management and Prevention (RAMP) Initiative

Duane Goodson
Board of Directors
Bayview Hunters Point Advocates

Carolina Simunovic
Environmental Health Director
Fresno Metro Ministries

Linda Weiner
Chairperson
Bay Area Clean Air Task Force

David Schonbrunn
President
Transportation Solutions Defense and Education Fund (TRANSDEF)

Tom Plenys
Research and Policy Manager
Coalition for Clean Air

Brian Beveridge
Co-Chair
West Oakland Environmental Indicators Project

Attachment A:

Benefits of Proposed and Past Air Resources Board In-Use Diesel Control Measures

Rule/Subject	Summary of Control Measure	Key Regulatory Dates	PM Emissions Without Control Measure (Tons per Year)	PM Emission Reductions from Control Measure (Tons per Year)		Premature Deaths Avoided
			2010	2010	2020	
In-Use Off-Road Equipment	**Requires retrofit and repower of off-road and construction equipment**	**Board Hearing May 2007**	**6095.5**	**839.5**	**1898**	**4000 (by 2030)**
Previously Adopted In-Use Diesel Regulations						
In-Use Agriculture Stationary Engines	Requires upgrading or retrofitting irrigation pumps and stationary engines	Approved ,2006	460	220 (2012)	170 (2022)	-
Aux Marine Engine Fuels	Requires lower sulfur diesel fuel to be used in marine vessels auxiliary engines	Approved 2005	1679	1350	2555	530 (by 2020)
Cargo Handling Rule	In-use regulation applying to Port and Railyard equipment	Approved 2005	188	75	25	32 (by 2020)
Public Fleet Rule	In-use regulation applying to Public Fleets and Utilities	Approved 2005	93	55	18	38 (by 2022)
Sleeper Cab Idling	Idling restrictions on sleeper cab equipped trucks	Approved 2005	234	153.3	36.5	107 (by 2013)
Transit Fleet Vehicles (Non-Urban Buses)	Regulation will apply to buses not currently convered under the urban transit bus regulation.	Approved 2005	24	8	9	11
Portable Engines	Requires engines larger than 50 hp meet specific PM emission standards	Approved 2004	1,000	292	584	768 (by 2037)
Marine and Locomotive Fuel	Requires ULSD for intrastate locomotives and harbor craft	Approved 2004	-	212	212	233 (by 2020)
On-Road Idling (Non-Sleepers)	5 minute idling limit	Approved 2004	416 (2009)	121	-	152 (by 2013)
Stationary Diesel Engines	Requires new and existing engines meet specific PM emission standards	Approved 2004	1,000	146	55	121 (by 2020)
Transportation Refrigeration Units (TRUs)	Requires new and existing engines meet specific PM emission standards and operating-hour limitations	Approved 2004	900	219	192	211 (by 2020)
Refuse Haulers	Requires new and existing engines meet specific PM emission standards	Approved 2003	200	121	30	80 (by 2020)
Transit Buses	Requires new and existing engines meet specific PM and NOx emission standards	Adopted 2001	50	27	12	-
Totals For Previously Adopted Rules			**6,244**	**3,000**	**3,900**	**Greater than 2283**

Source: All data is from the Initial Statement of Reasons for each rulemaking. Some modifications to rules after publication of the ISOR are not reflected.
Missing data is either unavailable, or not calculated as part of the regulatory development.
Premature Deaths Avoided include benefits of reduced NOx emissions when applicable.

Attachment B: Rule Exemptions, Flexibility, and Strengthening Opportunities

In response to stakeholder comments and concerns over the past 3 years, CARB staff has made numerous modifications to the proposed rule in the form of exemptions, credits, and other flexibilities. Claims of rule complexity, overly stringent requirements, and cost concerns should be weighed in light of the significant exemptions and flexibility provided in the proposed regulation. Below is a table that highlights some of these provisions.

Flexibility Option	Description	Comments
Best Available Control Technology (BACT) OR Fleet Average	○ As in past rules, ARB originally pursued a BACT approach to ensure that the maximum emission reductions were achieved from each diesel engine on a specific time frame. ○ Hours-of-use calculations were added for even greater flexibility.	○ Industry demands for greater flexibility led to the inclusion of a fleet average alternative, adding to rule complexity and additional enforcement challenges.
Small Fleets	○ Deadlines and fleet average targets for small have been modified to provide a longer compliance period and provide for an additional 5 years of access to incentive funding. ○ Small fleets are also exempt from the NOx emission requirements and equipment turnover requirements, meaning small fleets can comply solely through the installation of PM retrofits on their existing equipment.	○ Small fleets represent a small portion of the actual construction equipment emissions and are likely to face the largest challenges in upgrading their fleets. ○ These fleets are appropriately given more time to comply and meet less stringent requirements
Medium Fleets	○ Medium fleets have been given an additional 3 years to access incentive funding before having to meet fleet targets starting in 2013.	○ An additional 3 years of access to incentive funds will help lessen the economic burden of compliance.
Large Fleets	○ Since the final workshop, the proposed implementation date has been pushed back 1 year until 2010 and the BACT turnover requirements have been lowered from 10% to 8% for the first 5 years.	○ CARB should consider increasing the amount of turnover of Tier 0 and Tier 1 engines for large fleets. Increased turnover in 2010 and 2011 to Tier 3 or higher engines will result in significant additional NOx reductions without reducing the longer term benefits of the rule. ○ Large fleets are best situated to upgrade their equipment because of access to capital, high value projects, and higher rates of equipment turnover.
Resale of Tier 0/1 in-state	○ There are no restrictions on selling the oldest, most polluting equipment back into California. ○ Some of this equipment could be purchased by non-regulated entities such as agriculture which is not covered under this rule.	○ ARB should consider restricting the sale or purchase of highly polluting equipment by currently unregulated CA industries. ○ Adding dirty equipment to unregulated fleets in California will undermine some of the benefits of this regulation.
Access to Carl Moyer Incentive Funding	○ Delays in implementation dates for medium and small fleets allow access to Carl Moyer funds. ○ Exceeding regulatory requirements during the implementation phase also allows for use of incentive	○ Access to incentive funds for fleets that most need it is appropriate to ensure that the greatest possible reductions of PM and NOx can be attained from this rule.

	funding.	
Credit for early action before 2010	○ Repowers, replacements, and retrofits occurring before the implementation deadlines are banked as credits, with retrofits earning double credit. ○ There is no sunset for the use of the early credits.	○ Early credits will encourage reducing emissions sooner to the benefit of California breathers. ○ This rule provides multiple incentives and credits for early action through the use of the fleet average and these early credits.
PM Retrofit Exemptions	A piece of equipment is exempt from the PM retrofit requirement if: ○ The equipment is less than 5 years old ○ There is no retrofit available ○ Retrofit would impair safety ○ A retrofit has been ordered, but not delivered by the manufacturer	○ The large number of exemptions means that owners of equipment will only be required to meet the regulatory requirements if the technology is available to retrofit their equipment. ○ No new equipment purchases or repowers are required to meet the PM targets.
NOx turnover exemptions	A piece of equipment is exempt from the turnover, repower, or NOx retrofit requirement if: ○ A vehicle that is less than 10 years of age or newer ○ Has been retrofit within the past 6 years ○ Until 2013, Tier 1 equipment is exempt if all Tier 0 engines have been replaced ○ Specialty vehicles – defined as those without a cleaner **used** alternative available. **THIS RULE DOES NOT REQUIRE THE PURCHASE OF NEW OFF-ROAD EQUIPMENT.** Rather, it requires purchase of used equipment, repowers and retrofits if and only if they are available.	○ Lowering the 6 year turnover exemption for retrofitted equipment by 1 to 2 years would allow for more NOx reductions. ○ The retrofit investment will not be lost as the retrofit device could be used on a different piece of equipment or at a minimum will add resale value to the piece of equipment. ○ It is unnecessary to delay turnover of Tier 1 equipment until 2013. The 10 year exemption and retrofit exemption are ample protection for protecting a companies investment.
Replacement and repower exemptions	○ Does not require that replacement equipment meets the current federal EPA emission standards (i.e. purchasing used equipment meets the turnover requirements) ○ Tier 2 or higher replacement and repower is allowed for large, medium and small fleets.	○ Requiring replacement and repower with Tier 3 or newer for large fleets would result in greater NOx reductions from this rule. ○ Tier 3 and interim Tier 4 engines will be available for nearly all horsepower ranges by 2008, while the timeframe of this rule applies through 2025. ○ Retrofits are also likely to be available to upgrade Tier 2 engines to Tier 3, lowering the cost of a Tier 3 requirement.
Low-use exemption	○ Can be based on a single year OR a 3-year rolling average. ○ Vehicles designated as low-use are not included in any of the fleet calculations. ○ The lack of a sunset provision encourages the oldest dirtiest equipment to be categorized as low-use rather than cleaned up or retired from a fleet.	○ The low-use exemption should include a sunset provision to address PM emission from these vehicles by 2020. ○ ARB estimates 2 to 3% of emissions will be from low-use equipment in 2020, a conservative estimate which does not account for this rules effect to incentivize the designation of vehicles as low-use. ○ Tier 0 equipment operating in 2020 will be 30 to 50 times more pollution than an equivalent Tier 4 engine, meaning a piece of low-use equipment could emit the

		equivalent of 3 to5 years worth of emissions of a Tier 4 machine. o Leasing of low-use equipment is a compliance option and significantly improves the cost-effectiveness estimates provided by staff. Specialty equipment retrofit availability exemptions could still apply.
Snow removal, agriculture, and emergency equipment exemptions	The following are exempt from the rule: o Dedicated snow removal equipment o Equipment used to responds to an emergency o Equipment used at least half time for agriculture o Equipment for which there is no used replacement or retrofit available.	o ARB should ensure that agriculture equipment owners are aware of regulatory developments planned for their equipment and encouraged to apply for incentive funding now.
Low Population Counties, Municipal Fleets	o Turnover and NOx requirement exemptions were made for areas with low populations and areas meeting ambient air quality standards.	