

December 13, 2010

Mary Nichols
Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Support – Proposed Modifications to the In-Use, Off Road Diesel Regulation

Dear Chairwoman Nichols:

The California Construction and Industrial Materials Association (CalcIMA) supports the adoption of the proposed modified regulation for In-Use Off Road Diesel. We are very appreciative of the Board and CARBs staff recognition of the significant overstatement of emissions from this segment of the Off Road Emissions inventory and strongly believe these changes represent an appropriate adjustment of state policy in keeping with the Board's ten directives to staff on this issue. While we have some remaining concerns, in particular the halving of the retirement credit and a lack of such a credit for fleets prior to the first compliance date, the proposed modifications are much better than the existing rule.

CalcIMA is a statewide trade association representing the mining and ready mix concrete industries. Our 100 member companies operate multiple surface mines producing sand and gravel, crushed stone and multiple industrial minerals such as limestone and silica. As the providers of basic raw materials that support the construction and other industries this recession has had a dramatic negative impact on our business and it remains unclear when significant growth will occur again. The relief provided by these modification is therefore important economically but also justified based on the improved emissions inventory CARB has created.

2007 Rule Total Emissions Targets Vs. 2010 Modifications

A primary goal CARB adopted for staff in pursuing these modifications was to maintain the health benefits of the rule. As we are aware of comments which seem to distort the emissions from sources covered under this rule, we feel it incumbent to discuss the current inventory in comparison to historic inventories. We would also like to point out that the revised inventory is far superior to the initial inventory having the benefit of being based upon the equipment and fleet inventory provided for in the initial rule, the data submittals generated by ABx2 8 which provided invaluable usage and equipment

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retirement information and which has been correlated with off road diesel fuel consumption data. Finally it integrates the results of the recession which hit the industries covered by the rule particularly hard. As a result, we now know with greater certainty that the fleets covered under this rule represent 7% of total PM emissions and 4% of NOx emissions statewide¹, not the two thirds reported in some comments to the Board. We also know that the total emissions of the equipment governed under this rule is far below the regulatory targets set in 2007, and will be under the modified proposal for significant SIP compliance dates.

By comparing the 2007 ISOR and the 2010 ISOR we were able to determine that according to CARB staffs own analysis Total Statewide NOx emissions from equipment regulated under this rule will be below the final compliance target in the 2007 adoption for NOx by 2014. In 2007 CARB targeted NOx emissions from this equipment at 84 TPD after regulation in 2025². In 2014 CARB's projected NOx emissions with regulation under this modified rule structure is 74.9 TPD declining to 43.6 TPD in 2023³. Similarly the modified regulation recognizes lower total emissions for PM than had been projected under the 2007 version of the rule. In 2014 under the current proposed modifications PM emissions from regulated equipment would be at 3.8 TPD⁴, whereas under the 2007 rule Total Statewide PM emissions would have been at 4.6 TPD in 2015⁵. We believe it is important to point this out as the total emissions projected from the regulated equipment under the modified rule is less than the target that CARB believed would have been achieved under the 2007 rule during this important SIP compliance timeframe. As a result the regulation is clearly maintaining the health benefits of the previous rule. CARB staff also noted this on page 40 of the 2010 ISOR where they said, "As can be seen in Figure 12, while the emissions that would occur in each year are not equivalent between the current regulation and the proposed amendments, cumulatively the amended regulation will result in essentially the same NOx and PM2.5 emissions levels compared to what was expected when the regulation was approved by the Board before the recession."

2000 Diesel Risk Reduction Plan

We decided to look back another step recognizing that some comments would likely focus on the States Diesel Risk Reduction Plan. We would like to focus on the overall reductions that document believed it would achieve as represented by this statement:

"As illustrated in Figures 3 and 4, ARB staff estimates the full implementation of the recommended measures, including retrofit of locomotives and commercial marine vessels, will result in an overall 75 percent reduction in the diesel PM inventory and the associated potential cancer risk for 2010, and an 85 percent reduction for 2020, when compared to today's diesel PM inventory and risk."⁶

¹ 2010 CARB Off-Road ISOR, P. 3

² 2007 CARB Off Road ISOR, P. 33

³ 2010 CARB Off Road ISOR, P. 38

⁴ 2010 CARB Off Road ISOR, P. 38

⁵ 2007 CARB Off Road ISOR, P. 34

⁶ 2000 CARB Diesel Risk Reduction Plan, P. 31

In short a target of 85% reduction of emissions and associated risk by 2020 from the 2000 Inventory that formed the basis for that plan. In Appendix III for that document it lists total emissions for construction and mining in Tons Per Year at 7,721 for PM and 121,048 for NOx in 2000⁷. When we convert these to TPD emissions by dividing by 365 we come up with 21.15 TPD of PM and 331.63 TPD of NOx. Based on the corrected inventory contained in the 2010 ISOR the Diesel PM at 3.7 TPD in 2011⁸ is 17% of the total PM level assumed in 2000 or an 83% reduction from the 2000 inventory in 2011 and the modified proposals target of 2.6 TPD in 2020 represents an 87% reduction from the 2000 inventory. This proposal meets the targets set in the 2000 Diesel Risk Reduction Plan for diesel PM reductions from that inventory for construction and mining equipment. As such we believe the proposed modifications CARB is making to the Off Road rule are completely justified. Both in terms of the Diesel Risk Reduction Plan, as well as the states obligations under federal law. CARB is undertaking a completely appropriate modification based on updated and best available scientific information while considering the economic impacts on an industry heavily impacted by the recession.

Bubble Concept

Several of CalCIMA's larger members that undertook substantial compliance expenditures to comply with the March 1, 2010 Off-Road rule remain interested and engaged with CARB staff on developing a bubble that enables them to trade the excess emissions reductions they have achieved under the off-road rule to their on-road compliance obligations. We would encourage the Board to direct staff to continue working on developing such a structure.

Early Retirement Credits & Credit for Reduced Fleet Horsepower

We are concerned the actions in this seem to create two problems. First they do not recognize the actions taken by large fleets in 2009 as compliance actions with the 2007 rule. We believe horsepower reductions that occurred in 2009 by large fleets should still receive the full horsepower credit for that compliance strategy and create a carryover credit that moves forward into the modified rule. We are aware this total credit was back calculated to 2006 but believe CARB can separate those numbers for large fleets.

Second, we are concerned that there is a time period between compliance dates when fleets who reduce their horsepower by retiring old equipment can gain no credit towards compliance with the rule. While the credit for reduced fleet horsepower grants credit for horsepower reductions occurring between March 1, 2010 and February 28, 2011, there is no way to generate credits between that 2011 date and the beginning of a fleets compliance period. As a result reductions in fleet horsepower that might occur as part of an advance compliance strategy between March 1, 2011 and the beginning of the compliance year for the appropriately sized fleet would generate no credits towards compliance. This is precisely part of the scenario which led to the adoption of ABx2 8

⁷ CARB Diesel Risk Reduction Plan, Appendix III, P. III-10

⁸ 2010 CARB Off Road ISOR, P. 14

where fleets had retired equipment early to gain credit under the 2007 rule. It also creates an incentive to keep tier 0 equipment in fleets until the start of a fleets compliance period. We believe CARB should adopt a fleet HP reduction credit that covers the period between 2011 and the initial compliance date of a fleet.

Order of Turnover

The added simplicity of this provision is appreciated. It was causing confusion among fleets as they worked to comply with the March 1, 2010 target.

I would like to thank the Board for this opportunity to comment. I have worked with your staff on this rule since 2004, and was a member of the Off Road Industry Advisory Group. It is rewarding to see CARB correcting an inventory we had disputed for many years with the benefit of the information developed in the early implementation of the rule. It has been a challenging and complex process and we expect it will remain one.

Respectfully,

A handwritten signature in black ink, appearing to read 'Adam Harper', written in a cursive style.

Adam Harper
Director of Policy Analysis



**STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED
RULEMAKING**

**PROPOSED AMENDMENTS TO THE REGULATION FOR IN-USE OFF-ROAD
DIESEL-FUELED FLEETS AND THE OFF-ROAD LARGE SPARK-IGNITION FLEET
REQUIREMENTS**



Mobile Source Control Division
Emissions Reductions Incentives Branch

October 2010

Figure 1: Off-Road Contribution to 2010 Statewide Mobile Source Emissions (Particulate Matter and NOx without Regulations)

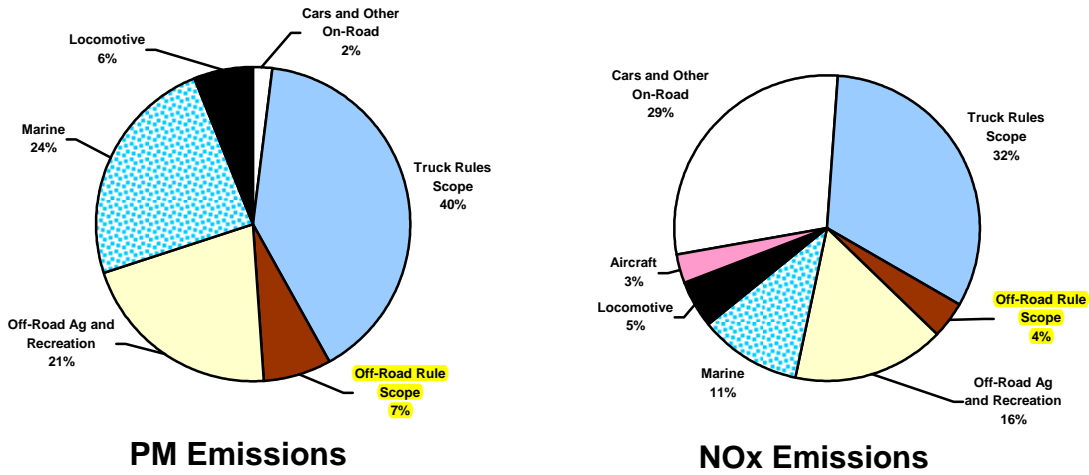
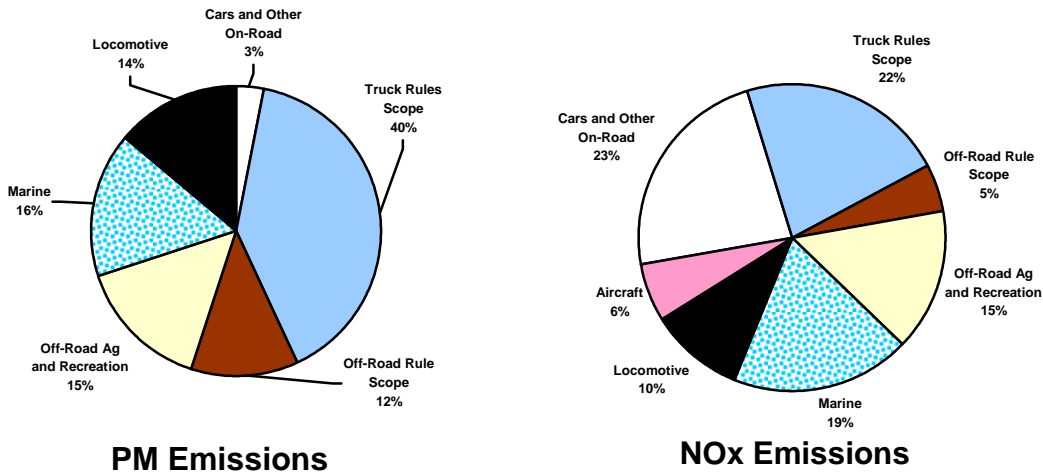
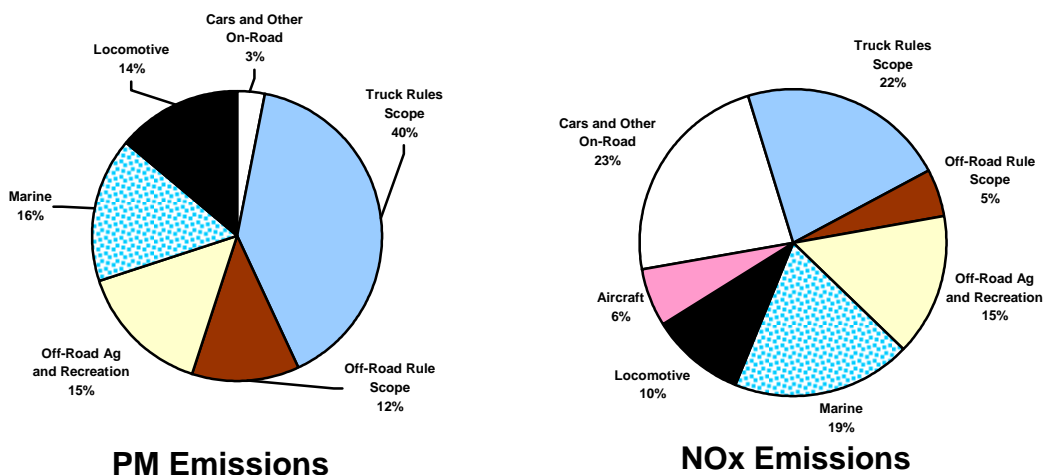


Figure 2: Off-Road Contribution to 2020 Statewide Mobile Source Emissions (Particulate Matter and NOx without Regulations)



In directing staff to propose changes to the Truck and Bus and off-road regulations together, the Board further instructed staff to also consider the impact of the recession and inventory changes on affected fleets. This was intended to ensure emissions reductions could be targeted most cost effectively, and the combined emissions benefits achieved by the two rules would continue to meet State Implementation Plan (SIP) requirements. The SIP is California's roadmap towards achieving federal clean air standards by the applicable deadlines. To assess progress towards meeting the emission reduction obligations in the SIP, staff evaluated whether the lower emissions from the revised inventory and the recession provided greater emission reductions than were expected. Any excess emission reductions achieved are referred to as an emission margin. The margin defines how much relief can be provided under the regulations while still meeting the legal emission reduction requirements of the SIP. To allow for a comparison of different pollutants (PM and NOx), the margin is calculated, by

Figure 5: Off-Road Contribution to 2020 Statewide Mobile Source Emissions (Particulate Matter and NOx without Regulations)



Diesel PM also contributes to ambient concentrations of fine particulate matter (PM_{2.5}), which is associated with premature mortality, aggravation of respiratory and cardiovascular disease, asthma exacerbation, chronic and acute bronchitis and reductions in lung function.

NOx leads to formation in the atmosphere of ozone and PM_{2.5}. Ozone is a powerful oxidant, and exposure to ozone can result in reduced lung function, increased respiratory symptoms, increased airway hyper-reactivity, and increased airway inflammation. Exposure to ozone is also associated with premature death, hospitalization for cardiopulmonary causes, and emergency room visits for asthma.

To put the air quality impacts discussed later in context, the uncontrolled annual statewide emissions from vehicles subject to the off-road regulation are shown below in Table 4. Note that these emission estimates are significantly lower than those presented in the Technical Support Document (TSD) for the original off-road rulemaking in 2007 or previous staff reports, due to the recession and updated emissions inventory data, as summarized in Chapter II and discussed in Appendix D (ARB, 2007b).

Table 4: Annual NOx and PM Emissions from Off-Road Diesel Vehicles in California without the Regulation (tpd)

Baseline Emissions ²	2011	2014	2017	2023
NOx Emissions	73	76	77	52
PM Emissions	3.7	3.9	3.9	2.4

² Baseline emissions are the emissions that would occur without a regulation in place.

recession began. Through this analysis, staff was able to determine if the amended regulation would provide the emission reductions necessary (when combined with the estimated benefits from the Truck and Bus regulation) to meet applicable SIP targets.

Provisions Modeled - The portions of the proposed amendments staff modeled using OSM were:

- the delay of implementation,
- the combined NOx and PM BACT fleet average and schedule,
- the adjustment to credits for all fleets,
- and delayed requirements for fleets that complied early, and
- the increase in turnover requirements from 2022 to 2023.

Staff did not model other provisions of the proposed amendments, as they are not expected to have a significant impact on the overall benefits of the regulation. However, staff will monitor the implementation of the minor amendments to determine if any change in the expected benefits of the regulation is occurring.

2. Emissions Benefits of the Proposed Amendments

The revised baseline off-road emissions inventory (assuming no off-road regulation) and the impact of the proposed amended regulation on emissions in years relevant to attainment of NAAQS are shown below in Table 12.

Table 12: Baseline Emissions and Regulation Impact on Statewide NOx and PM Emissions³

Year	NOx Emissions Baseline	With Proposed Regulation	NOx Emissions Benefits	PM Emissions Baseline	With Proposed Regulation	PM Emissions Benefits
2014	76.2	74.9	1.3	3.9	3.8	0.1
2017	76.8	71.2	5.6	3.9	3.6	0.3
2020	65.0	56.8	8.2	3.1	2.6	0.5
2023	52.3	43.6	8.8	2.4	1.9	0.5

Figure 10 and Figure 11 below show the baseline NOx and PM emissions, respectively, from off-road diesel vehicles and the impact of the regulation on emissions if the proposed amendments are adopted.

³ Using the revised off-road emissions inventory.



**STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED
RULEMAKING**

PROPOSED REGULATION FOR IN-USE OFF-ROAD DIESEL VEHICLES



Mobile Source Control Division
Heavy Duty Diesel In-Use Strategies Branch

April 2007

VI. EMISSION BENEFITS

A. What would be the emission benefits of the regulation?

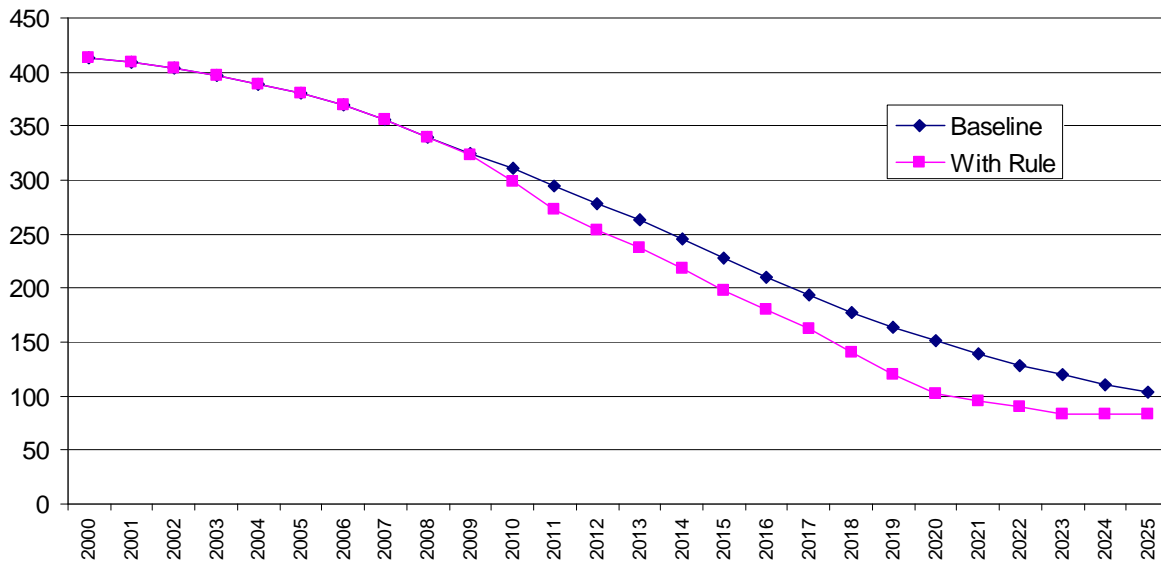
The regulation would be expected to significantly reduce emissions of NOx and PM. The regulation would achieve the 2020 goal of reducing PM 85 percent from 2000 baseline levels set forth in the 2000 Diesel Risk Reduction Plan. The regulation is projected to reduce PM emissions 37 percent from the 2000 baseline by 2010, and 92 percent by 2020. Although NOx and PM emissions are both projected to drop from now through 2020 even in the absence of the regulation, the proposed regulation would accelerate the anticipated emission reductions. For example, the PM emission inventory projected for 2020 with regulation in place would not be reached in the absence of the regulation until after 2025.

As shown in Table VI-1, the regulation would provide significant near- and long-term NOx emission benefits. As shown in Table 4, NOx is expected to be about 13 percent lower in 2015 as a result of the regulation, and by 2020, NOx emissions would be 32 percent lower than would occur in the absence of the regulation. Figure VI-1 below shows the NOx emissions expected with and without the regulation.

Table VI-1- Statewide NOx Emission Reductions from the In-Use Off-road Diesel Vehicle Regulation (tons per day)

Emission Reductions	2010	2015	2020	2025
NOx Without Regulation	311	228	151	103
NOx with Regulation	298	198	103	84
Benefits of Regulation	13	30	48	20
Percent Reduction	4%	13%	32%	19%

Figure VI-1 - Statewide NOx Emissions Inventory With and Without Regulation (tons per day)



Similar to NOx, significant near-term and long-term PM benefits would be expected from the regulation. As shown in Table VI-2 and depicted graphically in Figure VI-2, PM emissions would be 60 percent lower in 2015, and 69 percent lower in 2020 than they would be in the absence of the regulation. The large reductions prior to 2013 are a result of fleets retiring some of their dirtiest engines and installing PM exhaust retrofits on nearly 20 percent of their hp per year. After 2013, most fleets would meet the PM fleet average targets and would be able to continue to meet subsequent PM averages with engine turnover and a small number of PM exhaust retrofits per year. PM emissions decline again in 2020 and 2021 when all remaining diesel engines that do not have PM exhaust retrofits would be required to have them.

Table VI-2 – Statewide PM Emission Reductions from the In-Use Off-road Diesel Vehicle Regulation (tons per day)

Emission Reductions	2010	2015	2020	2025
PM Without Regulation	16.7	11.5	7.0	4.2
PM With Regulation	14.4	4.6	1.8	1.3
PM Benefits of Regulation	2.3	6.9	5.2	2.9
Percent Reduction	14%	60%	74%	69%

Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles



California Environmental Protection Agency
 Air Resources Board

Stationary Source Division
Mobile Source Control Division

October 2000

D. What impact will the recommended measures have on diesel PM emissions and risk?

As illustrated in Figures 3 and 4, ARB staff estimates the full implementation of the recommended measures, including retrofit of locomotives and commercial marine vessels, will result in an overall 75 percent reduction in the diesel PM inventory and the associated potential cancer risk for 2010, and an 85 percent reduction for 2020, when compared to today's diesel PM inventory and risk. These reductions will occur through the combined actions of both California and the U.S. EPA to adopt and implement rules that reduce diesel PM.

From 2000 to 2010, ARB staff predicts diesel PM emissions and risk would decrease by only about 20 percent if the recommended measures are not implemented. This reduction would result from the implementation of existing federal and state regulations and the attrition of older diesel-fueled passenger cars and light-duty trucks from the on-road fleet. The U.S. EPA has proposed new, lower emission standards for heavy-duty trucks for 2007 and lower sulfur limits for diesel fuel (on-road vehicles only) in 2006. The benefits of these proposed rules are not included as existing measures because they have not been adopted as of the date of this Plan.

The recommended measures can be grouped as follows: measures addressing on-road vehicles; measures addressing off-road equipment and vehicles, and measures addressing stationary and portable engines. These measures include the U.S. EPA proposed 2007 new heavy-duty truck standards and the proposed 2006 low-sulfur fuel limits. Figure 4 illustrates the impact of each of these groups of measures on projected diesel PM emission levels for 2010 and 2020. As shown, off-road recommended measures have the largest impact. Of the off-road recommended measures, the retrofit measures (see Table 10) result in over 90 percent of the diesel PM reductions associated with all of the off-road measures.

Appendix III

Mobile Diesel-Fueled Engines: Report on the Need for Further Regulation of Particulate Matter Emissions

October 2000

**Table 5
Off-Road Inventory – Diesel-Fueled Vehicles & Equipment**

Category		PM (tons per year)		NOx (tons per year)	
		2000	2010	2000	2010
Agricultural	Total	3,547	2,575	54,579	37,091
	SoCAB	212	153	3,276	2,224
Airport Ground Support	Total	113	102	1,479	1,319
	SoCAB	58	51	785	698
Commercial	Total	749	646	9,957	7,791
	SoCAB	292	252	3,883	3,039
Commercial Marine Vessel	Total	4,522	5,157	30,060	33,493
	SoCAB	2,531	3,130	14,460	17,247
Construction & Mining	Total	7,721	5,658	121,048	83,876
	SoCAB	2,856	2,093	44,787	31,035
Dredging	Total	18	11	380	259
	SoCAB	1	0.4	15	10
Drilling	Total	234	135	4,339	2,929
	SoCAB	29	18	562	380
Industrial	Total	573	497	6,699	4,986
	SoCAB	281	245	3,284	2,444
Lawn & Garden	Total	113	40	1,278	500
	SoCAB	47	18	526	205
Locomotive	Total	1,151	1,129	53,327	28,720
	SoCAB	215	208	10,943	3,561
Logging	Total	244	150	4,069	2,378
	SoCAB	0	0	0	0
Military Tactical Support	Total	29	22	519	243
	SoCAB	4	4	66	44
Misc. Portable	Total	3	3	47	33
	SoCAB	1	1	11	7
Pleasure Craft	Total	26	33	968	1,205
	SoCAB	7	11	292	365
Transportation Refrigeration	Total	946	851	9,336	7,210
	SoCAB	351	314	3,455	2,666
TOTALS	Total Statewide	19,989	17,009	298,085	212,033
	SoCAB	6,885	6,498	86,345	63,925