Facts about the California Air Resources Board's

WASTE COLLECTION VEHICLE REGULATION

The California Air Resources Board (ARB) is moving ahead with implementation of a regulation that will achieve tremendous public health benefits by reducing toxic particulate matter (PM) emissions from the states approximately 12,000 diesel-fueled commercial and residential solid waste and recycling collection vehicles. The ARB is taking this action as part of its continuing mandate to reduce diesel PM following the Board's 1998 identification of diesel PM as a health-damaging toxic air contaminant. Solid waste collection vehicles are the second group slated for PM reduction, having been preceded by transit buses in 2000, with more diesel vehicle and engine groups to follow. Depending on the age and type of trucks in an owner's fleet, implementing the regulation can average from $3,000 to more than $50,000 per truck. That being the case, in passing the regulation, the ARB stated it intends and expects municipalities and service providers to work together to amend or renegotiate contracts as needed so service fees reflect the service providers costs for compliance. ARB staff estimates that statewide the regulation's costs will average out to approximately $1 per household per year.

WHO IS RESPONSIBLE FOR COMPLYING WITH THE MEASURE?

The rule applies to owners of solid waste collection vehicles or those diesel-fueled trucks over 14,000 pounds gross vehicle weight with model-year engines from 1960 to 2006 used to collect residential and commercial solid waste. An owner can be a private company operating independently or under contract to a city or county, or a city, county, state or federal agency that directly operates refuse and recycling collection services. All are required to clean up their solid waste collection vehicles by using what the ARB defines as the Best Available Control Technology (BACT) for reducing diesel PM.

WHAT TECHNOLOGY HELPS ACHIEVE BACT?

The ARB continues to verify technology that can help diesel engines meet the appropriate BACT standard through the addition of an ARB verified diesel emission control strategy (DECS). Currently, staff has certified several add-on technologies that will help waste collection truck engines meet BACT standards. There are three levels of these ARB-verified diesel emission control strategies:

LEVEL 1 reduces diesel PM at least 25 percent.

LEVEL 2 reduces diesel PM at least 50 percent.

LEVEL 3 reduces diesel PM by 85 percent or more, or reduces emissions to at least 0.01 g/bhp-hr.

In addition, some strategies are also verified to reduce oxides of nitrogen (NOx) emissions. Many of the currently verified strategies require the use of ultra-low (<15 parts per million) sulfur diesel fuel. As stated previously, the BACT chosen always must reduce the engine's PM by the highest level possible. Once a particular DECS is selected and the engine is brought into compliance, it must stay in compliance as long as it is used in California. For more Information on these technologies please see the web pages listed at the end of this fact sheet.

WHAT IS BACT?

BACT is ARB-verified technology that best reduces PM emissions from the diesel engine of a solid waste collection vehicle*. Since one BACT does not work for all engines, the ARB has provided owners with several options to bring their vehicles into compliance. BACT is defined in the rule as one of four options:

•An engine alone certified to the 2007 model year standard of 0.01 gram of PM per brake horsepower-hour (g/bhp-hr), for example a new truck purchased beyond 2007.

•An engine certified to the existing 0.10 g/bhp-hr PM standard that is then equipped with the most effective ARB-verified Diesel Emission Control Strategy (DECS) such as a diesel particulate filter or diesel oxidation catalyst, for example replacing a 1990 truck engine with a 1994 engine plus DECS.

•An alternative-fuel engine, such as one that runs on natural gas.

•Any diesel or dual-fuel engine retrofitted with an ARB-verified DECS that reduces PM by the greatest amount possible for the particular engine and application. The right DECS for an engine depends on three things: the DECS is verified for the engine; the duty cycle of your vehicle matches the requirements of the DECS; and your engine warranty can not be voided by using the DECS.

*Title 13 Section 2700 et seq.

California Environmental Protection Agency

Air Resources Board

ARB RIS Staff revised (01/06)

WHAT IS THE IMPLEMENTATION SCHEDULE?

Owners must apply BACT on their engines between 2004 and 2010, with specific deadlines depending on factors such as engine model year, number of vehicles in a fleet, and whether the fleet has dual-fuel or bi-fuel engines. ARB's Executive Officer can also grant specific extensions and exemptions based on a variety of situations. The table to the right shows compliance deadlines.

PUBLIC HEALTH AND ENVIRONMENTAL BENEFITS

The health and environmental benefits of this measure are substantial. The rule will achieve a reduction in toxic PM emissions from collection vehicles by as much as 81 percent by 2010 and 85 percent by 2015 from levels that existed in 2000. This means that more than two million pounds of PM and 30,000 tons on NOx will not be released into the air. It is estimated that 80 premature deaths will have been prevented by the year 2020. The benefit will be most effective in the heart of residential communities, where waste collection is a weekly event, and in some cases served by three collection vehicles each week.

COSTS

Owners will see a range of costs to implement BACT on their vehicles. Generally, newer trucks and engines will be less expensive to implement while older ones will be more expensive. For example, owners are most likely to retrofit 1991-2006 engines with a passive diesel particulate filter or a diesel oxidation catalyst. Using a PM filter would cost approximately $5,000 to $8,000, which includes the filter, installation and a backpressure monitor. A catalyst, which does not require a backpressure monitor, would cost about $3,000 to $4,000, including installation.

Collection vehicles older than 1991 will likely need to be fitted with a newer engine (repowered) to bring them to the point where most can meet the PM requirement through installation of a catalyst or filter, unless new technology is verified to work with a wide range of these older engines. The average cost for a repower is about $45,000, with a range of $21,000 to $90,000, depending on engine manufacturer, model and model year. A catalyst or filter brings the total average cost to about $50,000. However, it should be noted that a vehicle with a new 2007 diesel engine or an alternative fuel engine meets BACT standards without the need for additional retrofitting. This includes purchasing new trucks from 2007 and thereafter.

Some vehicle owners may experience higher or lower costs, depending on the age of their vehicles, how many already use alternative fuels, and the mix of BACTs needed for implementation. The state expects that waste haulers will recover reasonable costs of implementing this regulation through negotiations with municipalities for rate increases or through other means if they are available. ARB staff estimates that the regulation's costs will average out to approximately $1 per household per year.

IMPLEMENTATION BY ENGINE MODEL YEARS

Group 1**	1988-2002	DEADLINE
	10%BACT	December 31, 2004
	25%BACT	December 31, 2005
	50%BACT	December 31, 2006
	100%BACT	December 31, 2007

Group 2a*	1960-87	(Fleets of 15 or more vehicles)
	15%BACT	December 31, 2005
	40%BACT	December 31, 2006
	60%BACT	December 31, 2007
	80%BACT	December 31, 2008
	100%BACT	December 31, 2009

Group 2b**	1960-87	(Fleets of 14 or fewer vehicles)
	25%BACT	December 31, 2007
	50%BACT	December 31, 2008
	75%BACT	December 31, 2009
	100%BACT	December 31, 2010

Group 3**	2003-06	(includes dual & bi-fuel engines)
	50%BACT	December 31, 2009
	100%BACT	December 31, 2010

*GROUP 2a: level1 technology may not be used as BACT.
**Owners with total fleets of 1-3 vehicles may delay compliance until the final deadline for each group.

MORE INFORMATION

For more information about the waste collection vehicle regulation you can visit the following ARB web page: www.arb.ca.gov/msprog/swcv/swcv.htm .

You can view and download regulatory documents, when available, at: www.arb.ca.gov/regact/dieselswcv/dieselswcv.htm .

Additional information about verified Diesel Emission Control Strategies (DECS) is available at: www.arb.ca.gov/diesel/verdev/verdev.htm .

Dan Skopec
Acting Secretary

Air Resources Board

Robert F. Sawyer, Ph.D., Chair
1001 I Street
Sacramento, California 95812 www.arb.ca.gov

Arnold Schwarzenegger
Governor

TO: Dr. Robert Sawyer, Chair

Honorable Board Members

FROM: Catherine Witherspoon
Executive Officer

DATE: June 5, 2006

SUBJECT: 2004 REPORT ON WASTE COLLECTION VEHICLE RULE

In 1998 the Board identified diesel particulate matter (PM) as a toxic air contaminant. Two years later the Board adopted a comprehensive plan to reduce the risk associated with diesel PM exposure 75% by 2010 and 85% by 2020. To achieve those goals the Board directed staff to develop several specific control measures. The trash truck rule, adopted in September 2003, was one of the first diesel control measures out the shoot. To ensure that the rule's innovative approach of retrofits, retirement and vehicle replacement was truly workable in the field, the Board directed staff to do extensive outreach and to report annually on implementation. The Board's adopting resolution and our report for the 2004 compliance year – the first full year the rule was in effect -- is attached.

The report contains very encouraging news. In 2004, waste hauling companies were required to bring 10% of their Group 1 trucks (1988-2002 model-year engines) into compliance. That amounts to 857 vehicles based on surveys showing 8570 such trucks in California. In reality, waste haulers had 3086 compliant Group 1 trucks by early 2005, a compliance rate of 35%. This was due to twenty companies taking advantage of the "early compliance" option that gave them two years grace (from December 2007 to December 2009) for final compliance if they cleaned up 50% of the Group 1 fleet by July 1, 2005.

Waste haulers also went beyond ARB projections with regard to using Level 3 retrofit devices (particulate traps which reduce diesel PM by at least 85%). Back in 2003, staff estimated that 12% of California's waste trucks would use Level 3 retrofit devices in 2004. In reality, the use of Level 3 devices was 22%.

With regard to engine replacement, staff predicted in 2003 that a mere 4% percent of the Group 1 trucks would, by the end of 2004, have the cleanest engines available (those emitting 0.01 gram per brake horsepower-hour of PM). The 2004 survey showed use of these engines in the fleet at 24%.

All in all, the 2004 compliance report show that the trash truck rule is working effectively and is stimulating companies to accelerate emission reductions.

For the 2005 report, staff has simplified the reporting process to make it easier for the waste haulers and generate more accurate information for ARB. Specifically, we provided on-line spread sheets that companies can fill out on the computer and electronically transmit to ARB. Staff has also conducted several workshops and other outreach to inform the waste hauling community about the rule and how it works. A web page on ARB's Internet site contains extensive information and includes staff contact numbers. Staff has assisted waste haulers by responding to hundreds of telephone calls and email questions and will continue to do so throughout the lifetime of the trash truck rule.

Attachments

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

AIR RESOURCES BOARD

FIRST ANNUAL UPDATE

SOLID WASTE COLLECTION VEHICLES

STATUS OF IMPLEMENTATION

June 2006

TABLE OF CONTENTS

TABLES

APPENDICES

I. INTRODUCTION

On September 25, 2003, the Air Resources Board (ARB or Board) adopted the Diesel Particulate Matter Control Measure for On-Road Heavy-Duty Residential and Commercial Solid Waste Collection Vehicles (SWCV). This regulation is designed to achieve significant reductions in toxic particulate matter (PM) emissions from solid waste collection vehicles. From 2004 through 2020, it is anticipated that this regulation will remove 1,130 tons of diesel PM from California's air.

The regulation's emission reductions are achieved through a variety of strategies. The main strategies include purchasing new trucks with lower emitting engines, equipping existing diesel trucks with ARB-verified PM control devices, and retiring or scrapping older trucks to remove them from the California fleet.

At the September 25, 2003 public hearing, the Board adopted Resolution 03-21 (see Appendix A), directing staff to provide regular updates on the progress of implementing the regulation. Specifically, the Board directed staff to develop user-friendly implementation guidelines within six months of the operative date of the regulation and to conduct outreach and educational activities with municipalities and owners of solid waste collection vehicles.

The Board also directed the Executive Officer to report annually through 2007, and biennially thereafter, on the effectiveness of the previous year's phase-in of the control measure. Resolution 03-21 stated that the report should give the status of best available control technology (BACT) used in the previous year to meet implementation deadlines, an estimate of the effectiveness of the BACT used, a survey of waste collection fleet owners to determine their success in negotiating with municipalities for rate increases to help pay implementation costs, and any other matters of significance in connection with the regulation.

It should be noted that much of the information in this report is drawn from surveys and telephone conversations and was not confirmed by in-field inspections. Due to the need for clarification and revisions, some of the information gathering concerning the 2004 Report stretched through 2005 and into early 2006. Information on developments in 2005 is currently being gathered and will be presented in a new report to the Board later in 2006.

II. REGULATION SUMMARY

The following points summarize the regulation:

- The regulation seeks to reduce PM emissions from the State's 11,000-13,000 solid waste collection vehicles.

- It applies to municipalities and private companies collecting solid waste for a fee.

- It applies to on-road waste collection vehicles greater than 14,000 pounds with model year 1960 to 2006 diesel engines.

- Compliance is phased-in from 2004 through 2010.

- Compliance requires use of ARB verified BACT.

- BACT includes diesel engines certified to the 2007 0.01g/bhp-hr PM standard; fitting existing engines with the highest emission reduction ARB approved control strategy that will work for a particular engine, and alternative fuel engines. Compliance strategies can also include retiring existing vehicles or reducing their usage to less than 1,000 miles per year.

III. DEVELOPING USER-FRIENDLY GUIDELINES

Development of user-friendly guidelines began even before the regulation was adopted. A Solid Waste Collection Vehicle webpage was created and posted on the ARB's website. This webpage was used to keep the wastehauling community and other interested parties informed of various meetings and workshops and to solicit input that helped shape the final version of the regulation.

Once the regulation was adopted the webpage was modified to become an outreach tool to inform and educate the wastehauling community on how the regulation works and how best to implement it. The various facets of the webpage (http://www.arb.ca.gov/msprog/swcv/swcv.htm) include:

- "Frequently Asked Questions" with answers to more than 40 of the questions most often asked by the wastehauling community.
- Fact sheets concerning the rule including one written in layman's language for general consumers.
- Regulatory documents and advisories.
- ARB contact with name, telephone number, fax number and email addresses.
- Sample reporting forms and documents.
- Meeting notices.
- Links to the ARB's verified control device page and other helpful pages.
- Presentations starting with the first workshops on the proposed rule, the presentation for the September 25, 2003 Board meeting, and presentations used in subsequent educational workshops.

Structure of the webpage and other items pertaining to outreach and education were decided with the help of a wastehauler working group made up of individuals from solid waste associations, individual wastehauling companies, government associations and private consultants. ARB staff met frequently in person and via conference calls with this group and individual group members during formulation of outreach policies.

IV. CONDUCTING OUTREACH

Educational outreach for the regulation began with a series of workshops soliciting public comments before the regulation was adopted. After adoption staff held a series of five implementation workshops in July and August of 2004 in El Monte, San Diego, Redding, Sacramento and Fresno. The mailing list of invitations to these workshops contained more than 700 addresses. The workshops from July 27 through August 12 were attended by more than 160 people. Staff also volunteered to make presentations at a variety of meetings held by other organizations around the state. These included presentations for heavy duty engine manufacturers, the State Association of Counties, natural gas organizations, wastehauler forums, and the Pacific Gas & Electric Company. Staff also placed articles about the rule in municipal and industry news letters.

In addition, staff fielded hundreds of telephone calls and emails to answer questions from individual wastehauling companies, industry groups, and emission control device manufacturers and installers and continues replying to telephone call and email questions. To summarize, staff has conducted and continues to conduct intensive outreach to the State's wastehaulers and municipalities operating their own waste collection fleets. Educational and outreach efforts have intensified since the regulation was adopted.

Outreach will continue in 2006 with more assistance to wastehaulers in how to keep and submit proper records on fleet compliance. In addition, staff will visit landfills and fleet terminals around the state to check for proper doorjamb labels, proper records and to see if retrofit devices are being properly matched to the engines for which they are verified.

V. REQUESTS FOR COST INCREASES

One of the greatest concerns expressed by wastehaulers was whether they would be able to get fee increases from the municipalities they contract with to recover the costs of implementing the rule. It was for this reason that ARB in April of 2004, sent a letter to the State's cities and counties pointing out that all Californians would benefit from the rule's PM reductions, and asking municipalities to work cooperatively with collection firms on the matter of rate increases to cover implementation costs.

Resolution 03-21 directed ARB staff to include the status of rate negotiations in the annual reports to the Board. Wastehaulers had various responses to the survey questions asking if they had been successful when requesting rate increases to cover implementation costs from the municipalities they contract with. Only four companies definitely stated they had requested fee increases to cover implementation costs from the multiple municipalities they contract with. The results of these requests were 24 cost increase approvals, seven denials, and seven decisions pending on other requests. Some of the rate increases will stretch over the entire seven-year implementation schedule of the rule, while others will be in force for the varying times covered by existing contracts.

Table 1. FEE INCREASES

<table>
<tr><th colspan="3">Fee/Rate Increases for 2004
Requested From Municipalities</th></tr>
<tr><td rowspan="3">Four companies requested 38 increases</td><td>24 approved</td><td rowspan="3">Cost increases run varying periods, depending on individual contracts</td></tr>
<tr><td>7 denied</td></tr>
<tr><td>7 pending</td></tr>
</table>

Other responses from wastehaulers included:

- Reluctance to disclose information because they did not want it known by competitors.
- Fear of asking for rate increases because it might mean losing contracts.
- Waiting until 2005 or 2006 to get a better view of implementation costs.
- Waiting until their current contracts run out before requesting rate increases.

Some wastehaulers also commented that their contracts call for increases based only on the Consumer Price Index while others said that some municipalities may agree to increases to cover part, but not all of the expenses associated with the rule.

VI. NORMAL IMPLEMENATION SCHEDULE

Most of the State's wastehaulers have chosen the normal implementation schedule to implement the rule. This schedule requires phased-in implementation from 2004 through 2010 divided between Group 1 (engine model years (MY) 1988-2002), Group 2a (fleets of 15 or more with engine MY from 1960-1987), Group 2b (fleets of 14 or fewer with engine MY from 1960-1987) and Group 3, (engine MY from 2003-2006). Fleets of one to three vehicles are allowed to postpone all compliance until the last year of each groups' compliance schedule. The normal implementation schedule is shown in the following table:

Table 2. NORMAL IMPLEMENTATION SCHEDULE

Group	Engine Model Years	Percentage of Group to Use Best Available Control Technology	Compliance Deadline
1	1988 – 2002	10 25 50 100	December 31, 2004 December 31, 2005 December 31, 2006 December 31, 2007
2a	1960 – 1987 (Total fleet $\geq$ 15 collection vehicles)	15 40 60 80 100	December 31, 2005 December 31, 2006 December 31, 2007 December 31, 2008 December 31, 2009
2b	1960 – 1987 (Total fleet $<$ 15 collection vehicles)	25 50 75 100	December 31, 2007 December 31, 2008 December 31, 2009 December 31, 2010
3	2003 – 2006 (Includes dual-fuel and bi-fuel engines)	50 100	December 31, 2009 December 31, 2010

As shown above, the rule requires that wastehauling companies have 10 percent of their Group 1 vehicles in compliance by December 31, 2004. In addition, all SWCVs that fall within the scope of the rule were required to have doorjamb labels by the end of 2004. As part of the research for this report, ARB staff contacted more than 120 wastehauling companies and asked them to report on their implementation progress for 2004. Those reporting included the State's largest waste hauling fleets. The information collected showed 8,570 Group 1 vehicles in the 120 fleets. Considering that there are about 12,000 vehicles in the statewide SWCV fleet, the 8570 Group 1 vehicles would be about 70 percent of the statewide fleet.

Wastehaulers reported using a variety of strategies to bring collection vehicles into compliance. These strategies included use of catalysts and particulate filters, fueling vehicles with 100 percent liquid natural gas (LNG) or compressed natural gas (CNG), and three fleets had a handful of vehicles (just over 100) that used PuriNOx, a diesel/water emulsion fuel. Many companies made some trucks backup vehicles, which are driven less than 1,000 miles per year and do not need to be retrofitted with BACT. They also retired some vehicles as part of their compliance strategy.

The rule has very specific requirements for a fleet owner to claim a vehicle has been retired. To be counted as retired, an owner must sell the vehicle to an entity outside of California, scrap it, or use it as a backup vehicle. These restrictions prevent double counting, where multiple owners in California would count a vehicle as retired by passing it on to another California owner. Staff questioned 14 private companies and four municipalities on specifics about what they had done with vehicles reported as retired. Seventeen reported that all their

retired vehicles had been disposed of in accordance with the rule. Many vehicles were scrapped while a few others were sold outside California. Some fleets allowed auction houses to dispose of vehicles after getting a signed agreement that the vehicles would not be sold for use in California. One municipality reported trading in four vehicles to a dealership in California and did not know what the dealership had done with the trucks.

Meeting the mandated 10 percent compliance goal for 2004 would have meant bringing 857 of the 8,570 Group 1 vehicles into compliance. However, waste hauling firms and municipalities in the group surveyed reported 3,086 compliant Group 1 vehicles, a compliance rate of about 35 percent. The following table shows the compliance strategies used for these vehicles.

Table 3. 2004 COMPLIANCE - GROUP 1

Group 1 Compliance	
Total Group 1 Vehicles:	**8570**
Liquefied Natural Gas:	534
Compressed Natural Gas:	195
Diesel Oxidation Catalyst:	1571
Diesel Particulate Filter:	682
PuriNOx:	104
Total Compliant Vehicles:	**3086**

The information in Table 3 on liquefied and compressed natural gas vehicles is a reflection of the total number of these vehicles the surveyed entities had in their fleets in 2004. Some of these trucks were purchased in 2004 to replace retired vehicles while others were already in the fleets prior to 2004.

One reason that the number of compliant vehicles shown in Table 3 greatly exceeds the 10 percent of Group 1 vehicles required to be in compliance in 2004 is that 27 fleets applied to use the optional early compliance schedule. Early compliance is discussed below.

VII. EARLY COMPLIANCE SCHEDULE

The early compliance schedule allows haulers to delay final implementation of their Group 1 fleets by two years (to 2009 rather then 2007) if they bring 50 percent or more of these vehicles into compliance by July 1, 2005. Of the 27 fleets notifying ARB of their intent to meet the early compliance requirements, 20 reported successfully completing the early compliance schedule.

There were more than 5,000 Group 1 vehicles among the fleets wishing to do early compliance. Of those 5,000 vehicles, fleets reported 2443 brought into compliance, with 1556 retrofits, 398 retired vehicles and 489 natural gas vehicles. Early compliance information is shown in the chart in Appendix C.

VIII. EFFECTIVENESS OF BACT

The SWCV Rule requires that solid waste collection vehicles use only ARB verified devices or strategies to reduce emissions. ARB's Retrofit Assessment Section has verified more than a dozen systems that might be used to reduce PM from waste collection vehicles as well one combination system that reduces both PM and nitrogen oxides, a precursor of ozone. One diesel/water emulsified fuel, PuriNOx, has also been verified as an approved control strategy for reducing PM emissions. The number of verified devices or strategies continues to grow.

BACT used on waste collection vehicles is rated Level 1, for a minimum PM reduction of 25 percent, Level 2 for a minimum 50 percent reduction and Level 3 for a reduction of at least 85 percent. Collection companies must use the highest BACT level that will work for a particular engine. In Table 2 the majority of Level 3 devices were diesel particulate filters while the majority of Level 1 devices were diesel oxidation catalysts. Level 2 was represented by three fleets running a total of 104 trucks on PuriNOx fuel, a diesel/water emulsion.

In developing the SWCV regulation, staff projected what strategies wastehauling firms and municipalities would use to bring their collection vehicles into compliance. These are shown in Table 4 along with the information on Group 1 vehicle compliance gathered in the surveys done for this report.

Table 4. 2004 IMPLEMENTATION STATUS – GROUP 1

BACT Use	Level 1	Level 2	Level 3	Repowers	0.01 PM Compliant Vehicles
Anticipated	30%	0%	12%	54%	4%
Actual Percentage*	51%	3%	22%	--	24%
Actual Numbers	1571	104	682	--	729

***Based on Survey**

As discussed in Section VI, about 35 percent of Group 1 SWCV have complied with the rule as of the end of 2004, compared to a minimum requirement of 10 percent. With respect to approvables used for compliance, SWCV operators have relied more heavily on retrofits and purchase of new trucks, and have not chosen to re-power existing vehicles, compared to staff's projections for Group 1. Also, noteworthy is the greater use of level 1 devices, which are less effective in reducing PM emissions. Field inspections are being made to verify that the use of less effective Level 1 devices was appropriate.

The annual warranty claims report for 2004 showed no reports of claims filed due to failure of verified emission control devices on SWCVs.

IX. ENFORCEMENT ACTIVITY

Since most of the rule's requirements did not come to full force until the end of 2004, there was scant enforcement activity in that year. However, this situation changed in 2005. Among other things, the rule requires that all collection vehicles have doorjamb labels by December 31, 2004. On January 26, 2005 ARB sent out an advisory reminding wastehaulers that labels were required on all SWCVs, no matter what the vehicle's compliance status. In June of 2005, an Enforcement Division inspection found that a Northern California wastehauling company did not have labels affixed to its waste collection vehicles. A total of 142 label violations were found and inspectors also found trucks that apparently violated ARB standards for excess smoke. A settlement conference to discuss these violations is currently pending.

ARB inspectors also did random checks at landfills around the State in May and June of 2005 and found labeling problems on 187 of 259 waste collection vehicles inspected. These vehicles did not have labels, had labels with incorrect information, or had them in locations other than the driver side doorjamb. Most of these cases were closed out when hauling firms moved quickly to correct the violations.

X. OTHER ISSUES – RECORD KEEPING AND REPORTING

It is not unusual for unforeseen issues to arise as implementation begins on a new regulation. The year 2004 was the first year of implementation for the rule. As implementation progress for 2004 was reviewed, staff became aware of outstanding issues that need continuing attention. Of these, record keeping and reporting was the most critical.

After requesting 2004 implementation information, ARB staff had to ask many wastehaulers to resubmit reports because their original submissions contained incomplete or inaccurate information. Some reports had to be resubmitted multiple times and in some cases wastehaulers never submitted complete information on their 2004 compliance efforts.

The most consistent reporting problem was a failure to give correct engine family names and/or diesel emission control device strategy names. This information is critical in determining if a verified emission control device has been properly matched with a correct engine. In some cases wastehaulers submitted information indicating that while they had used an ARB verified device, they had not matched the device with an appropriate engine. Work will continue to educate the wastehauling community on the proper way to keep fleet records and the proper way to submit fleet information to ARB.

XI. CONCLUSION

It is estimated today that there are approximately 12,000 collection vehicles on the road in California. As noted earlier, staff collected information for this report from 120 fleets, including the largest fleets in the State. The information showed that these 120 fleets were operating 8,570 Group 1 vehicles, or approximately 70 percent of the statewide SWCV population. Just over 3000 of those vehicles, or about 25 percent of the State's total collection vehicle fleet, were reported to be in compliance at the end of 2004. Compliance is well ahead of the schedule required by regulation. The remaining Group 1 vehicles and the others in Groups 2 and 3 comprise vehicles which must meet future compliance deadlines through 2010.

ARB staff will continue outreach to assure that all of the State's waste collection fleets are aware of the regulation and are moving toward compliance. In addition, enforcement activity will be stepped up against those fleets that are not in compliance.

Despite the expected problems that come with the first year of any new program, 2004 saw the Diesel Particulate Matter Control Measure for On-Road Heavy-Duty Residential and Commercial Solid Waste Collection Vehicles take an initial but significant first step toward reducing toxic PM from California's waste collection vehicle fleet.

APPENDIX A

RESOLUTION 03-21

State of California
AIR RESOURCES BOARD

Resolution 03-21

September 25, 2003

Agenda Item No: 03-7-2

WHEREAS, sections 39002 and 39003 of the Health and Safety Code charge the Air Resources Board (ARB or Board) with the responsibility for systematically attacking the serious air pollution problem caused by motor vehicles;

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Board to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, in section 43000 of the Health and Safety Code, the Legislature has declared that the emissions of air pollutants from motor vehicles is the primary cause of air pollution in many parts of the state and, the state has the responsibility to establish uniform procedures for compliance with standards which control or eliminate those air pollutants, vehicle emission standards apply to new and used motor vehicles equipped with motor vehicle pollution control devices;

WHEREAS, sections 43013, 43101, and 43104 of the Health and Safety Code authorize the Board to adopt motor vehicle emission standards, in-use performance standards, and test procedures, which it finds to be necessary, cost-effective, and technologically feasible;

WHEREAS, section 43018 of the Health and Safety Code further directs the Board to endeavor to achieve the maximum degree of emission reduction possible from motor vehicle sources to accomplish the attainment of state ambient air quality standards by the earliest practicable date while the Board adopts standards and regulations that will result in the most cost-effective combination of control measures on all classes of motor vehicles;

WHEREAS, section 43101 of the Health and Safety Code directs the Board to adopt and implement emission standards for new motor vehicles for the control of emissions therefore, which standards the Board has found to be necessary and technologically feasible to accomplish the attainment of state ambient air quality standards, and which standards may be applicable to motor vehicle engines, rather than to motor vehicles;

WHEREAS, section 43102 of the Health and Safety Code provides that the Board shall not certify a new motor vehicle or motor vehicle engine unless the vehicle or engine meets the emission standards adopted by the ARB pursuant to part 5 of the Health and Safety Code under test procedures adopted pursuant to section 43104;

WHEREAS, section 43105 of the Health and Safety Code provides that no new motor vehicle or engine required under part 5 of the Health and Safety Code to meet emission standards shall be sold to the ultimate purchaser, ordered or delivered for sale to the ultimate purchaser, or registered in this state if the manufacturer has violated emission standards or test procedures and has failed to take corrective action, which may include recall of vehicles or engines, specified by the Board in accordance with its regulations;

WHEREAS, section 43700 of the Health and Safety Code declares that reductions of emissions from diesel powered vehicles, to the maximum extent feasible, is in the best interest of air quality and public health;

WHEREAS, on August 27, 1998, following extensive scientific review and public hearings, and consistent with the conclusions of the Scientific Review Panel and the Office of Environmental Health Hazard Assessment, the Board formally identified particulate matter (PM) emissions from diesel-fueled engines as a toxic air contaminant and on September 28, 2000 approved a plan to reduce risk from diesel pollution by reducing harmful PM emissions from diesel engines;

WHEREAS, Health and Safety Code section 39658 declares that the state board shall establish airborne toxic control measures for toxic air contaminants;

WHEREAS, the Board undertakes the control of diesel particulate emissions from solid waste collection vehicles as the first among a series of control measures undertaken pursuant to the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (the Plan) adopted by the Board on September 28, 2000;

WHEREAS, the Board undertakes reductions of diesel particulate from diesel engines and vehicles under the Plan as independent control measures for which the Board will separately and specifically consider appropriate technologies and approaches for control of the diesel particulate emissions that provide flexibility to reflect the nature of the fleets being regulated and any unique needs of the operator;

WHEREAS, section 39667 of the Health and Safety Code directs the Board to achieve the maximum possible reduction in public exposure to toxic air contaminants by establishing emission standards for vehicular sources, including new and in-use motor vehicles and fuels;

WHEREAS, section 43004 of Health and Safety Code provides that unless expressly exempted, the exhaust emission standards for gasoline powered motor vehicles shall apply to motor vehicles that have been modified or altered to use a fuel other than gasoline or diesel;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project which may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate such impacts;

WHEREAS, the Board has considered the impact of this proposed regulatory action on the economy of the State;

WHEREAS, the Board finds that no alternative considered would be more effective, or equally effective and less costly, in achieving the regulatory objectives sought than the proposed regulations;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of chapter 3.5 (commencing with section 11340), part 1, division 3, title 2 of the Government Code;

WHEREAS, the ARB staff conducted public workshops on June 26 and 28, 2001; September 4 and 5, 2001; February 26 and 28, 2002; and December 9 and 10, 2002, as well as public outreach meetings, on the new regulation;

WHEREAS, the Board finds, based on the information in the public record, including the staff report and technical support document, and testimony provided at the hearing, that:

1. Excessive diesel particulate matter emissions from solid waste collection heavy-duty diesel motor vehicles contribute significantly to serious air pollution in residential communities and the state, and are a significant source of toxic air contaminants, comprising approximately 70 percent of all toxic air contaminant emissions in California;

2. There are approximately 12,000 collection vehicles in California that will be covered by this regulation, not including collection vehicles powered by alternative fuels or gasoline;

3. The reduction in ambient particulate matter (PM) levels resulting from this rule will prevent an estimated 80 premature deaths from 2004 through 2020, at a cost per premature death prevented of $900,000; compared to the U.S. EPA's present value of avoiding one death at $4.2 to $5.9 million, this rule is a very cost-effective mechanism of preventing premature deaths caused by diesel PM;

4. Cancer risk as a result of exposure to diesel PM from solid waste collection vehicles will be reduced from a high of about 31 cancer cases per million to about four cancer cases per million in the highest exposure areas;

5. Without this regulation, the baseline for diesel PM emissions from collection vehicles is expected to be 0.56 tons per day in 2010 and 0.17 tons per day in 2020;

6. With this regulation, diesel PM emissions from collection vehicles are expected to decline to between 0.18 and 0.28 tons per day in 2010 and to between 0.08 and 0.10 tons per day in 2020;

7. The adoption of this proposed measure would achieve up to 84 percent reduction in diesel PM emissions from collection vehicles in 2010, and up to 92 percent reduction in diesel PM emissions in 2020, relative to the 2000 baseline;

8. Other pollutants that will be reduced as a result of this regulation include hydrocarbon (HC), from 1.30 to 1.45 tons per day reduced, oxides of nitrogen (NOx), from 3.1 to 6.5 tons per day reduced, and carbon monoxide, from 3.33 to 4.29 tons per day, in 2010;

9. The cost-effectiveness of this rule, based on the cost of compliance divided by the pounds of pollutant reduced is $32 per pound of PM and $1.79 per pound of HC plus NOx, over a 17-year period;

10. The cost per household, assuming that the costs of compliance are passed on to solid waste collection customers, is estimated to be less than $1.00 per year; and

11. The health benefits derived from the control of diesel PM are immediate and offset any possible adverse effect of: any ash cleaned from diesel PM filters, if determined to contain zinc or other elements in sufficient concentration to characterize the ash as a hazardous waste, may be disposed of as a hazardous waste pursuant to state and federal law; any increases in sulfate particulate caused by the use of diesel oxidation catalysts are minimized by the use of California low sulfur diesel fuel; and the disposal of diesel oxidation catalysts, if considered to be hazardous waste, is minimized by the usual practice of recycling catalysts for their precious metal content.

WHEREAS, pursuant to the requirements of the California Environmental Quality Act and the Board's regulations, the Board finds no feasible mitigation measures or alternatives that would further reduce any potential adverse environmental impacts exist, while at the same time ensuring that the long-term benefits of the program would be achieved;

WHEREAS, pursuant to the requirements of the California Environmental Quality Act and the Board’s regulations, the Board further finds the considerations identified above override any adverse environmental impacts that may occur from adoption of the proposal and no significant non-air quality environmental impacts from the proposed regulation herein have been identified.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves proposed article 4, chapter 3, division 3, title 13, to be added to the California Code of Regulations, and sections 2020, 2021, 2021.1, and 2021.2.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to adopt article 4, chapter 3, division 3, title 13, California Code of Regulations, and new sections 2020, 2021, 2021.1, and 2021.2, with the modifications approved by the Board as set forth in Attachment A and such other conforming modifications as may be appropriate, after making the modified regulatory language available for public comment for a period of 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make further modifications as may be appropriate in light of the comments received or as necessary to ensure consistency with the modifications approved by the Board, and shall bring any proposed changes to the Board for consideration if the Executive Officer believes this is warranted.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to develop user friendly guidelines for implementation and compliance within six months of the operative date of article 4, chapter 3, division 3, title 13, California Code of Regulations, and new sections 2020, 2021, 2021.1, and 2021.2, and to conduct outreach and education activities with municipalities and owners of solid waste collection vehicles.

BE IT FURTHER RESOLVED, that the Board intends and expects municipalities and service providers to work together to amend or renegotiate contracts as needed so that service fees reflect the service providers' costs for compliance with these regulations;

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer, annually in 2005, 2006, and 2007, and biennially thereafter as needed, to report to the Board on the effectiveness of the previous year's phase-in of the implementation of the control measure. The report may include all of the following, in addition to other information deemed necessary:

- Status of best available control technology utilized in the previous year(s) to meet implementation deadlines;
- An estimate of the effectiveness of the best available control technology used;
- A survey of rate-regulated owners and operators of solid waste collection vehicles and municipalities to determine the status of rate negotiations for the costs of implementing the mandated control measure.

I hereby certify that the above is a true and correct copy of Resolution 03-21, as adopted by the Air Resources Board.

_____

Alexa Malik, Clerk of the Board

APPENDIX B

EARLY COMPLIANCE

REQUEST LETTER

Air Resources Board

Cindy K. Tuck, Chair
9480 Telstar Avenue, Suite 4
El Monte, California 91731 www.arb.ca.gov

Alan C. Lloyd, Ph.D.
Agency Secretary

Arnold Schwarzenegger
Governor

August 8, 2005

Mr. xxxxx
Address Block
xxx
xxx

Dear Mr. xxxxx:

Your company sent the California Air Resources Board (ARB) a letter stating your intent to do Early Compliance with your Group 1 (1988-2002) waste collection vehicles. ARB is now following up to see how many companies that stated intent to do early compliance were successful in meeting the early compliance deadline. Section 2021.2(f) of the Diesel Particulate Matter Control Measure for On-road Heavy-duty Diesel-fueled Residential and Commercial Solid Waste Collection Vehicles requires fleet owners to provide to ARB records pertaining to collection vehicle fleets, retrofitting and other strategies to meet implementation goals. Please provide to ARB the following information:

1. How many Group 1 (1988-2002) engines (vehicles) did you have in your total state-wide fleet on January 1, 2005?

2. How many of these Group 1 engines (vehicles) did you bring into compliance by July 1, 2005?

3. What did you do to bring them into compliance (sell, retire, retrofit, make back-up, etc?) Give the specific number of vehicles for which each compliance strategy was used.

4. For vehicles that were retrofitted, give the license plate number of each vehicle, the year and engine family of the vehicle engine, and what retrofit device or strategy was used, including the specific diesel emission control device strategy number, to bring the engine into compliance. Please be sure you give the correct engine family number and be specific as to the type of device and device strategy number used for compliance, including manufacturer name and name of device or strategy used on each vehicle engine.

5. Have you requested a fee increase from the municipalities you contract with to help cover the cost of implementing this rule? If yes, what municipality or municipalities did you make the request of, have you been granted the increase in whole or part, been denied the increase, or is the request still pending?

Please provide this information to ARB no later than August 31, 2005. For more information contact Ms. Angela Iniguez, Air Resources Technician at (626) 575-6772 or email at ainiguez@arb.ca.gov.

Sincerely,

/s/

Mr. Richard Varenchik
Staff Air Pollution Specialist
Retrofit Implementation Section

cc: Ms. Angela Iniguez
Air Resources Technician
Retrofit Implementation Section

APPENDIX C

CHART OF EARLY COMPLIANCE FLEETS

Group I Early Compliance Applications

Solid Waste Collection Company	Group 1 engines on 1/1/05	Group 1 engines implemented by 7/1/05 & implementation method used		Met Requirement?
Advance Disposal	21	3	3 Retrofitted	No
Allied (Pacific Waste Services)	111	60	48 Retrofitted +12 Retired	Yes
Athens Services	121	33	Parked and LNG	No
Burrtec	286	53	44 Retrofitted, 8 Retired, 1 Non-Operational	No
CR&R Inc	264	129	129 Retrofitted	No
EDCO	204	104	96 Retrofitted + 8 Retired	Yes
EJ Harrison & Sons	51	27	27 Retrofitted	Yes
Gilton Solid Waste Management	32	16	16 Retrofitted	Yes
Industrial Waste & Salvage	11	6	5 Retrofitted + 1 Retired	Yes
Marin Sanitary Service	53	27	27 Retrofitted	Yes
Mill Valley Refuse Service	30	15	15 Retrofitted	Yes
Palo Verde Valley Disposal	14	7	7 Retrofitted	Yes
Rainbow Disposal	59	28	25 Retrofitted + 3 Retired	No
Republic Services	630	316	170 Retrofitted, 113 Retired, 33 LNG	Yes
San Diego, City of	101	51	4 Retrofitted + 47 Retired	Yes
Santa Paula, City of	7	4	4 Retrofitted	Yes
Sonoma Garbage	5	3	3 Retrofitted	Yes
South Tahoe Refuse	14	7	7 Retrofitted	Yes
South Tulare-Richgrove	4	1	1 Retrofitted	No
Specialty Solid Waste & Recycling	47	27	27 Diesel Replaced w/ CNG	Yes
Sunset Waste Paper	16	8	8 Purinox	Yes
Tahoe Truckee Sierra Disposal	19	2	2 Retrofitted and 8 on order	No
Turlock Scavenger	14	8	8 Retrofitted	Yes
Varner Brothers	36	18	14 Retrofitted + 4 Retired	Yes
Waste Connections	181	95	94 Retrofitted + 1 Retired	Yes
Waste Management	2742	1390	794 Retrofitted, 181 Retired + 415 Natural Gas	Yes
Westside Waste Management	10	5	5 Retrofitted	Yes
TOTALS	5083	2443		

Total Retrofit -	1548
Total Retired -	378
Total Replaced, CNG, LNG -	475

APPENDIX D

DOOR JAMB

LABEL EXAMPLES

Door Jamb Label Examples

REFUSE COLLECTION VEHICLE EMISSION SYSTEM INFORMATION
COMPLIANT
OWNER: Sanitary Scavenger Company
CONTRACTED TO: City of Santa Clarita
EMISSION CONTROL STRATEGY (ECS) NAME: CA/COM/2003/PM1/N00/ON/12345 *
INSTALLATION DATE: June 15, 2005

*ECS CA/MMM/YYYY/PM#/N##/APP/XXXXX
CA: California verified strategy
MMM: Manufacturer code, usually the company's initials
YYYY: Year of verification
PM#: Level of PM reduction (Level 1,2, or 3)
N##: Level of NOx reduction, if any
APP: Application or use such as stationary (ST), on-road (ON) or off-road (OF)
XXXXX: Alphanumeric code issued by the Executive Officer

REFUSE COLLECTION VEHICLE EMISSION SYSTEM INFORMATION
FUTURE COMPLIANCE
OWNER: Sanitary Scavenger Company
CONTRACTED TO: City of Santa Clarita
ENGINE MODEL YEAR: 2003
PLANNED COMPLIANCE DATE: 2006

REFUSE COLLECTION VEHICLE EMISSION SYSTEM INFORMATION
PLANNED RETIREMENT
OWNER: Sanitary Scavenger Company
CONTRACTED TO: City of Santa Clarita
ENGINE MODEL YEAR: 2002
PLANNED RETIREMENT DATE: 12/30/06

REFUSE COLLECTION VEHICLE EMISSION SYSTEM INFORMATION					
BACK UP COLLECTION					
OWNER: Sanitary Scavenger Company					
CONTRACTED TO: City of Santa Clarita					
MILEAGE AS OF JANUARY 1, 2005			37,000		
06	37,874	**07**		**08**	
09		**10**		**11**	