



**San Joaquin Valley**  
AIR POLLUTION CONTROL DISTRICT



**2011**

# Annual Air Toxics Report



April 19, 2012

# ***Executive Summary***

This 2011 Annual Report on the District's Air Toxics Program was prepared by the San Joaquin Valley Air Pollution Control District. The District is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies. State law requires the District to prepare and distribute an annual report describing the implementation of the State Air Toxics Hot Spots Information and Assessment Act.

Consistent with section 44363 of the California Health and Safety Code requirements, this report:

- 1) describes the priorities and categories designated pursuant to section 44360 of the California Health and Safety Code and summarizes the results and progress of the health risk assessment program,
- 2) ranks and identifies facilities according to the degree of cancer risk posed both to individuals and to the exposed population,
- 3) identifies facilities which expose individuals or populations to any noncancer health risks, and
- 4) describes the status of the development of control measures to reduce emissions of toxic air contaminants if any.

This report describes notable efforts made by the District, State, and Federal agencies that have resulted in significant reductions in toxic air contaminant emissions. One such example is the implementation of District Rule 4702 Phase II in 2011, which has continued the substantial reduction of the amount of toxic air contaminants from diesel-fired engines. Other efforts include the amendments to District Rules such as Rules 4750 (Confined Animal Facilities), 4684 (Poly Ester Resin Operations), 4681 (Rubber Tire Manufacturing), 4653 (Adhesives), 4601 (Architectural Coatings), and adoption of Rule 4566 (Organic Material Composting Operations) all in an effort to reduce VOC emissions, which would in turn address a wide range of air quality issues, including reduction of toxic air contaminants. In future years, continued development and implementation of District Rules and State Air Toxic Control Measures (ATCMs) will continue to produce even further reductions in risk to Valley residents.

This report may be found on the District's website at:

[http://www.valleyair.org/busind/pto/air\\_toxics\\_annual\\_reports.htm](http://www.valleyair.org/busind/pto/air_toxics_annual_reports.htm).

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## Summary of Toxic Air Contaminants in the San Joaquin Valley

The U.S. EPA and the California Air Resources Board have identified over 700 substances that are emitted into the air that may affect human health. Some of these substances are considered to be carcinogens (cancer-causing), while others are known to have other adverse health effects. As part of ongoing efforts to identify and assess potential health risks to the public, the District has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Valley. The State has developed similar inventories for mobile sources of air pollution. These District and State inventories have been combined into the [California Toxics Inventory \(CTI\)](#), which provides emissions estimates for hazardous air pollutants of concern from all sources. A summary of the CTI data for key pollutants is given in Table 1 below.

**Table 1 - San Joaquin Valley Hazardous Air Pollutant Emissions**

Pollutant	Emissions (tons per year)
Diesel Particulate Matter	6,073
Formaldehyde	4,065
Benzene	1,680
Acetaldehyde	1,602
1,3-Butadiene	515
Methylene Chloride	404
Perchloroethylene	360
Para-DiChlorobenzene	156
Chromium (Hexavalent)	0.0
Carbon Tetrachloride	0.0

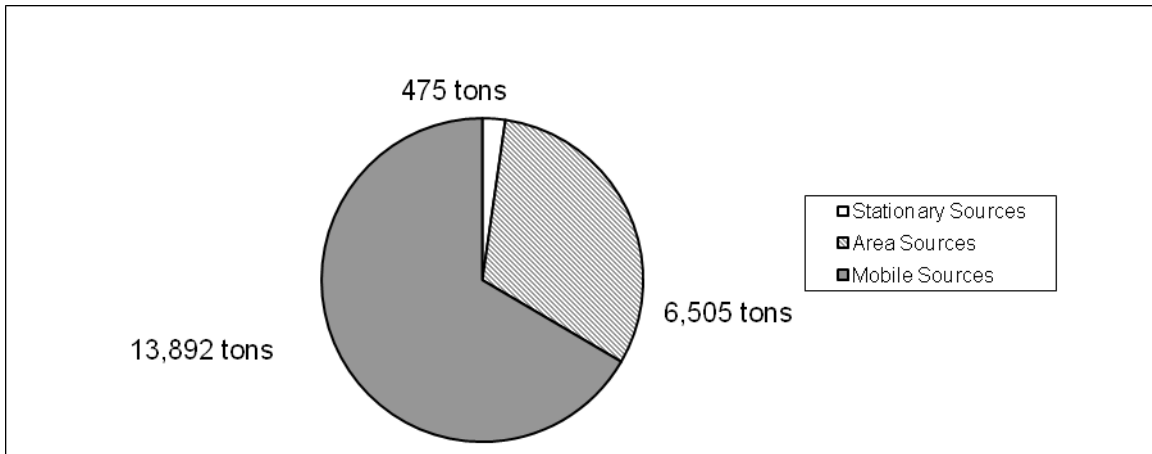
A more detailed summary of emissions estimates for the San Joaquin Valley is provided in Table A-1 in Appendix A.

Toxic Air Contaminants (TAC) are emitted from mobile sources (i.e., cars, trucks, buses, tractors, etc.), which are primarily regulated by the State and U.S.EPA; area sources (i.e., consumer products, gasoline stations, dry cleaners, etc.), which are regulated the State, U.S.EPA, and the District; and from stationary sources regulated primarily by the District. Stationary sources include a wide variety of industrial and commercial sources of air pollution for which air permits are

required, including small sources like emergency generators and painting operations and large sources such as petroleum refineries and power plants.

Figure 1 below shows a comparison of mobile and stationary source emissions of hazardous air pollutants in the San Joaquin Valley. Approximately 67% of hazardous air pollutant emissions are from mobile sources.

**Figure 1 – Comparison of Mobile, Area, and Stationary Source Hazardous Air Pollutant Annual Emissions**



Although mobile sources are primarily regulated by the State and U.S.EPA, the District has developed grant and incentive programs to assist in risk reduction from these sources. For example, the Heavy-Duty Engine Program, which is the District's largest and most successful incentive grant program, utilizes incentive funds to repower, replace, or retrofit existing high-polluting diesel equipment or vehicles.

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## State Air Toxics “Hot Spots” Act

### Implementation

The Air Toxics "Hot Spots" Information and Assessment Act was enacted in September 1987. Under this act, stationary sources are required to report the types and quantities of certain substances their facilities routinely release into the air. The goals of the Air Toxics "Hot Spots" Act are:

- to collect emission data,
- to identify facilities having localized impacts,
- to ascertain health risks,
- to notify nearby residents of significant risks, and
- to require that owners of significant-risk facilities reduce their risks below the level of significance in accordance with the provisions of the “Emissions Inventory Criteria and Guidelines Report” adopted by the Air Resources Board in 1989.

The “Emissions Inventory Criteria and Guidelines Report was last amended on August 27, 2007 to include: general reporting requirements for diesel engines; reporting requirements for some agricultural engines to after 2011; reporting requirements for stationary emergency standby diesel engines that will be retrofitted, replaced or removed at hospital buildings subject to the Alquist Hospital Facilities Seismic Safety Act of 1983, beginning in 2012; reporting requirements for diesel engines less than or equal to 50 horsepower, and portable diesel engines of any size, which occurred in 2010.

The District’s implementation of the Air Toxics Hot Spots requirements has resulted in significant reductions in the public’s exposure to toxic air contaminants. The public notification required under the Air Toxics Hot Spots program for facilities deemed to pose a significant risk to the public is one motivating factor for such reductions in risk from facilities.

Of the Valley facilities currently tracked as Core Facilities, none are considered to pose a significant risk according to the Air Toxics Hot Spots guidance.

## Collecting Emissions Data

The District collects and compiles toxic emissions data for industrial and commercial facilities as required by the State Air Toxics Hot Spots Information and Assessment Act. Although this process was completed for most Valley facilities during the early years of the Air Toxics Hot Spots program (1989-1991), approximately 200 of the highest emitting operations are required to provide updates to their emissions reports every four years. Based on this periodic reporting requirement, in 2011, the District received, reviewed and approved update summaries for 43 Valley facilities. The following table summarizes the 43 update summaries approved by the District in 2011.

**Table 2 – 2011 Update Summaries Approved**

Facility Name	Location
FRESNO COGENERATION PARTNERS	8105 S LASSEN AVE, SAN JOAQUIN
FRESNO VALVES & CASTINGS, INC.	7736 E SPRINGFIELD AVE, SELMA
J R SIMPLOT COMPANY	12688 S COLORADO AVE, HELM
AERA ENERGY LLC	HEAVY OIL PRODUCTION, FRESNO CO
DEL REY PACKING	5287 S DEL REY AVE, DEL REY
EVERGREEN CREMATION SERVICE OF CALIFORNI	920 S PARALLEL AVE, FRESNO
KINGS COUNTY ANIMAL CONTROL	10909 BONNEYVIEW LANE, HANFORD
TEASDALE QUALITY FOODS INC	901 PACKERS ST, ATWATER
LOS BANOS FOODS, INC	1155 E PACHECO BLVD, LOS BANOS
SILGAN CONTAINER CORP.	430 DOHERTY AVE, MODESTO
COVANTA STANISLAUS, INC	4040 FINK RD, CROWS LANDING
DURAFLAME WEST	1340 W WASHINGTON ST, STOCKTON
PILKINGTON NORTH AMERICA, INC	500 E LOUISE AVE, LATHROP
NEWARK SIERRA PAPERBOARD CORP.	800 W CHURCH ST, STOCKTON
THE WINE GROUP, INC.	17000 E HIGHWAY 120, RIPON
CITY OF TURLOCK WATER CONTROL	901 S WALNUT RD, TURLOCK
PARK VIEW MAUSOLEUM & CREMATORY	3661 E FRENCH CAMP RD, STOCKTON
AERA ENERGY LLC	MIDWAY-SUNSET
DAI OILDALE INC	HEAVY OIL CENTRAL
E&B NATURAL RESOURCES MGMT	HEAVY OIL CENTRAL
TAFT PRODUCTION COMPANY	TAFT AREA QUARRY
PACIFIC PIPELINE SYSTEM, LLC	LEBEC
PACIFIC PIPELINE SYSTEM, LLC	LAKE STATION
CENTRAL RESOURCES INC	SOUTH COLES LEVEE GAS PLANT
MARSHALL E HELM CORP	2739 PANAMA LN
CONTAINMENT SOLUTIONS INC.	2600 PEGASUS DR, BAKERSFIELD
CEMEX CONSTRUCTION MATERIALS PACIFIC LLC	24325 LOMITAS DR, LEMON COVE
RIDGELINE OIL & ASPHALT CO	PANAMA LANE & PROGRESS RD
SAN JOAQUIN REFINING COMPANY	STANDARD AND SHELL ST
AERA ENERGY LLC	BELRIDGE GAS PLANT
AERA ENERGY LLC	HEAVY OIL WESTERN STATIONARY SOURCE
AERA ENERGY LLC	LIGHT OIL WESTERN STATIONARY SOURCE
STYROTEK INC	545 ROAD 176, DELANO
SYCAMORE COGENERATION CO	HEAVY OIL CENTRAL
CHEVRON USA INC	HEAVY OIL CENTRAL
CHEVRON USA INC	HEAVY OIL WESTERN STATIONARY SOURCE
CHEVRON U S A INC	HEAVY OIL WESTERN
UNION CEMETERY ASSOCIATION	730 POTOMAC AVENUE, BAKERSFIELD

Based on the submitted update summaries, two facilities will be required to submit Toxic Emissions Inventory Reports in 2012. These facilities are:

**Table 3 – 2012 Toxic Emissions Inventory Reports Required**

Facility Name	Location
CHEVRON USA INC	HEAVY OIL WESTERN STATIONARY SOURCE
SHELL PIPELINE	COALINGA PUMP STATION

### Industry-wide Surveys

For common types of smaller commercial facilities that may emit toxic air contaminants, the District uses Industry-wide surveys, which provide a more streamlined and cost-effective method of preparing toxics inventories. Valley gasoline dispensing facilities, dry cleaning operations, printing operations, and automotive painting facilities have been categorized as industry-wide survey facilities. With the added streamlining effort of combining the point source emissions inventory with the toxics inventory, these industry-wide facilities are surveyed on an annual basis, allowing for expeditious screening risk assessments and improved quality of the state's inventory.

### Assessing the Risk to the Public

The State Air Toxics "Hot Spots" Act requires the District to compile an inventory of toxic emissions from Valley facilities, prioritize facilities for health risk assessment, evaluate public health risks for facilities ranked as high priority, and notify individuals who may be impacted by any significant health risks. Although the Hot Spots program is primarily a public notification program, the public awareness achieved through the Hot Spots program has led many Valley businesses to voluntarily reduce their toxic emissions to ease community concerns.

### Prioritizing Facilities

After the approval of a facility's updated Toxic Emission Inventory Report, which is required if there has been a significant increase in emissions since the facility's previous report submittal, the new data from the report is entered into the California Emission Inventory Data and Reporting System (CEIDARS). The District prioritizes and ranks the health risk posed by the facility as "low", "intermediate", or "high" priority. Facilities ranked as high priority are required to perform health risk assessments. District then prioritizes these facilities using computerized spreadsheets and database programs. The following table summarizes the four prioritizations performed for Valley facilities in 2011 based on the 2010 reporting requirements.



**Table 4 – 2011 Prioritization Statistics**

Facility Name	Location	Prioritization	Ranking
CALIFORNIA AIR NATIONAL GUARD	FRESNO	0.51	LOW
CITY OF VISALIA WATER CON	VISALIA	0.29	LOW
NESTLE DREYERS ICECREAM	BAKERSFIELD	7.07	MEDIUM
CHEVRON USA INC	BAKERSFIELD	13.6	HIGH

Due to the high priority score received by Chevron, USA Inc., the facility was required to perform a Health Risk Assessment, which is due in 2012. It should be noted that high priority does not necessarily mean high risk, it only indicates that a comprehensive analysis, called a health risk assessment, is required.

### **Health Risk Assessment**

The District and State Office of Environmental Health Hazard Assessment (OEHHA) are required by the Air Toxics "Hot Spots" Act to review each Health Risk Assessment. Based on the results of the risk assessment, facilities may be determined to pose a significant risk. Risk calculation involves a great deal of uncertainty. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used are designed to err on the side of health protection in order to avoid underestimating the risk to the public. The actual risk may be much less than the calculated risk.

### **Risk Reduction Audits and Plans**

Facilities that pose health risks above District action levels are required to submit plans to reduce their risk. Action levels for risk were established in the District's Board-Approved Risk Reduction policy. The action level for cancer risk is 100 cases per million exposed persons, based on the maximum exposure beyond facility boundaries at a residence or business. The action level for non-cancer risk is a hazard index of five at any point beyond the facility boundary where a person could reasonably experience exposure to such a risk.

There are currently no Valley facilities that have been determined to pose risks in excess of action levels.

### **District Assistance and Streamlining Efforts**

The District remains in close contact with facilities tracked through the Toxics Hot Spots Program to assist them in meeting ongoing toxics information. To further minimize the economic impact on these facilities, the District has integrated the Air Toxics and Emissions Inventory programs, an enhancement that eliminates the need for duplicate reporting efforts by the facilities and allows for quick and accurate processing of update TEIR reports or health risk assessments with the

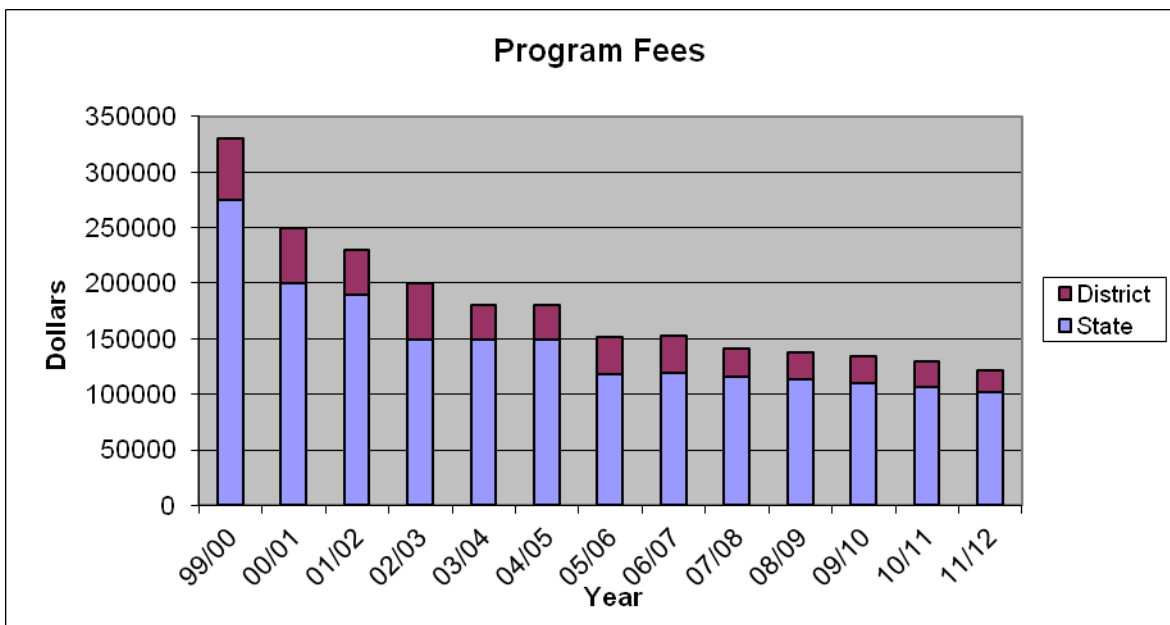
most current facility information. This, in turn, expedites the determination for potential further reporting by the sources. The District made other efforts to provide facilities with assistance, such as developing air dispersion modeling guidelines and being the first district in California to implement the use of the “AERMOD” modeling program along with the continuing training of District staff in CARB’s HARP program. These efforts also improve the quality of service offered to affected facilities and the public.

## Air Toxics Hot Spots Program Cost

### Minimizing Program Costs

During the course of implementing the Toxics “Hot Spots” Program, the District has made significant progress in making air toxics reduction efforts more cost effective. These reductions have been made possible by efforts to identify and exempt facilities that could not be expected to pose a health risk to the public and other program streamlining measures. These cost reductions, which were achieved in spite of increases in federal program requirements, translate directly into lower overall fees charged to Valley facilities. The following graph shows the reduction in District air toxics program costs that have been realized in the past 13 fiscal years.

**Figure 2 - Toxics Program Fees**



The fees collected support the following activities that CARB, OEHHA, and the District must undertake to administer Air Toxics Programs:

***California Air Resources Board Activities Supported by Air Toxics Fees***

1. Review potential additions to the toxics substances list;
2. Develop source test methods;
3. Assist districts in implementing the guideline regulations;
4. Assist facility operators in preparing protocols and risk assessments;
5. Assist districts in reviewing risk assessments and protocols;
6. Manage the statewide "Hot Spots" data.

***District Activities Supported by Air Toxics Fees***

1. Review of toxic emission inventory plans and reports;
2. Review of updates;
3. Rank facilities for health risk assessment;
4. Review and approve risk assessments;
5. Participate in notification process;
6. Perform budgeting and billing functions;
7. Prepare public reports;
8. Review of applications for new and modified sources of air toxics;
9. Risk Management Review;
10. Title III Implementation Activities

***OEHHA Activities Supported by Air Toxics Fees***

1. Assist CARB with updating and reviewing toxic substance list;
2. Assist CARB with implementation of Guideline Regulations;
3. Assist facility operators in preparing risk assessments;
4. Review risk assessments;
5. Assist districts with public notification;
6. Update risk assessment procedures;
7. Develop a health effects database;
8. Develop health risk values.

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## **Reducing Public Exposure to Health Risks**

### **Preventing Future Toxics Hot Spots - Risk Management Activities**

The goal of District risk management efforts is to ensure that new and modified sources of air pollution do not pose unacceptable health risks at nearby residences and businesses. In order to achieve this goal, the District reviews the risk associated with each proposed permitting action where there is an increase in emissions of hazardous air pollutants or change in operations. This risk management review is performed by District staff as part of the engineering evaluation for these projects. Since risk management reviews are performed concurrently with other project review functions using streamlined procedures including improved modeling tools developed by District staff; use of appropriate designated modeling programs; and utilizing the most current and applicable meteorological data processed by District staff, the process does not extend the length of time necessary to process applications.

Under the District's risk management policy ([Policy APR-1905](#)), Toxic Best Available Control Technology must be applied to all units that may pose greater than de minimus levels of risk. Projects that would pose significant health risks at nearby residences or businesses are generally not approvable. When a project is determined to be not approvable as proposed, District staff will work with the applicant to find approvable low-risk alternatives, such as installing toxic emissions control devices or limiting the operation of the proposed equipment. During the year 2011, District staff performed risk management reviews for over 900 projects with increases in hazardous air pollutant emissions.

### **Diesel Exhaust Risk Reduction**

In August of 1998, following a comprehensive 10-year scientific investigation, the State ARB identified particulate matter emissions from diesel-fueled engines as a toxic air contaminant with the potential to pose a significant cancer risk to the public. In the analysis prepared for this determination, ARB estimated the cancer risk from the exhaust of diesel internal combustion engines to be over 500 cancer cases per million, which is far higher than the estimated cancer risk from all other sources of air pollution combined. Because of the extremely high level of risk associated with diesel exhaust, and because of the prevalence of the engines, the State chose not to address diesel exhaust using the existing risk management guidance. Instead, the State decided to establish an advisory committee of interested parties, and developed a comprehensive risk management plan that would result in significant reductions in emissions of diesel particulate matter. In September 2000, the California ARB adopted the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles. The Plan's goals are a 75 percent reduction in diesel PM by 2010 and an 85 percent reduction by 2020 from the 2000 baseline.

## **Reducing Health Risk through State ATCMs**

### ***ATCM for Portable Diesel-Fueled Engines***

On February 26, 2004, ARB adopted an ATCM for portable diesel-fueled engines. The ATCM became effective on March 11, 2005 and contains stringent emissions standards and operational requirements that impact new and existing portable diesel engines. All existing portable diesel engines were required to be certified by January 1, 2010, and all new portable engines were required to meet the latest certification standards. In addition, the ATCM contains stringent diesel PM fleet standards that apply after 2010. The District has been implementing these new standards in the review of applications for District Portable Registrations or permits for portable diesel engines. This ATCM is expected to result in a substantial reduction in Valley diesel PM emissions over the next several years.

### ***State Control Measure for In Use Off-road Diesel Vehicle Rule***

On July 26, 2007, ARB adopted a regulation to reduce diesel PM and oxides of nitrogen (NO<sub>x</sub>) emissions from in-use (existing) off-road heavy-duty diesel vehicles. The regulation applies to self-propelled diesel-fueled vehicles that cannot be registered and licensed to drive on-road. Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, and airport ground support equipment. Vehicles with engines less than 25 horsepower are exempt. The regulation is expected to reduce diesel exhaust emissions by an average of 1,560 tons per year statewide between 2010 and 2030. This represents a 73% reduction in diesel PM from emissions levels anticipated in the absence of this regulation, preventing an estimated 4,000 premature deaths.

### ***Diesel Particulate Matter Control Measure for On-road Heavy-duty Diesel-fueled Vehicles Owned or Operated by Public Agencies and Utilities***

On December 6, 2006, ARB adopted the Diesel Particulate Matter Control Measure for On-road Heavy-duty Diesel-fueled Vehicles Owned or Operated by Public Agencies and Utilities. This control measure will reduce emissions from these types of vehicles over several deadlines, with the first groups of vehicles required to be in compliance by December 31, 2007. This control measure is particularly effective because it reduces diesel PM emissions in the heart of residential communities where municipal and utility vehicles frequently conduct business, and where the public is significantly impacted by diesel PM emissions.

### ***ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling***

On October 20, 2005, ARB adopted an ATCM to reduce emissions of toxics and criteria pollutants by limiting idling of new and in-use sleeper berth-equipped diesel trucks. The emission performance requirements require technologies used as alternatives to idling the truck's main engine. The new engine requirements required 2008 and newer model year heavy-duty diesel engines to be equipped with non-programmable engine shutdown systems that automatically shut down the engine after five minutes of idling or, alternatively, meet a more stringent NO<sub>x</sub>

idling emission standard. Beginning January 1, 2008, in-use truck requirements require operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engine when idling more than five minutes at any location within California. Each year heavy-duty diesel truck idling contributes to hundreds of pounds of PM as well as other pollutants to the Valley. The District Incentive Program has subsidized truck stop support equipment to reduce diesel truck idling along the main goods movement corridors. Tests conducted by the District and ARB have determined that an idling truck can consume up to a gallon of diesel fuel an hour. The idling of heavy-duty trucks, at the time of delivery, represents a high percentage of emissions around developed areas in the San Joaquin Valley.

### ***ATCM for Transport Refrigeration Units***

On February 26, 2004, ARB adopted an ATCM to reduce emissions of diesel PM from Transport Refrigeration Units (TRUs). TRUs are refrigeration systems powered by diesel internal combustion engines designed to refrigerate or heat perishable products that are transported in various containers, including semi-trailers, truck vans, shipping containers, and rail cars. Although TRU engines are relatively small, ranging from 9 to 36 horsepower, significant numbers of these engines congregate at distribution centers, truck stops, and other facilities, resulting in the potential for health risks to those that live and work nearby. ARB estimates that diesel PM emissions from TRUs will be reduced 65% by 2010, and 92% by 2020.

### ***ATCM for Hexavalent Chromium from Decorative and Hard Chrome Plating and Chromic Acid Anodizing Facilities***

This revision to the existing ATCM became effective on October 24, 2007. It established new, more stringent emission limitations that depend upon size and nearness to sensitive receptors, limited the use of chemical fume suppressants, and adopted new housekeeping, education, monitoring, recordkeeping, and reporting requirements. The District chose to implement this ATCM by revising Rule 7011 to incorporate the revised ATCM by reference. The District also required submission of a compliance plan and applications for Authorities to Construct (ATCs). A compliance workshop was held on November 17, 2007 to assist facility owners and operators in complying with the ATCM. The District's Governing Board adopted the rule on January 17, 2008.

### ***ATCM for Perchloroethylene Emissions from Dry Cleaning Operations***

The ARB adopted an ATCM on January 25, 2007. The amendments will phase out the use of Perc dry cleaning machines and related equipment by January 1, 2023. In addition, the amendments will put in place revisions to the Curriculum for the Environmental Training Program for Perc Dry Cleaning Operations (Training Curriculum). There were changes to the operational requirements for dry cleaners as well. These amendments became effective upon final approval by the Office of Administrative Law on December 27, 2007. The District adopted the revised ATCM in 2008 by reference.

### ***ATCM for Composite Wood Products***

Formaldehyde is produced on a large scale worldwide. One major use includes the production of wood binding adhesives and resins. On April 26, 2007, ARB approved an ATCM to reduce formaldehyde emissions from composite wood products including hardwood plywood, particleboard, medium density fiberboard, thin medium density fiberboard, and also furniture and other finished products made with composite wood products. ARB approved a version of an ATCM that included undeveloped regulation concepts. These concepts were developed into regulatory language and a modified version of the Composite Wood Product ATCM was released for a 15-day public comment period on January 31, 2008 and approved April 18, 2008, by the Office of Administrative Law.

### ***Other ATCMs***

The following ATCMs have been adopted by the District as regulations, and most are implemented through the District's permitting processes:

- Hexavalent Chromium - Decorative and Hard Chrome Plating, Chrome Acid Anodizing Facilities
- Hexavalent Chromium - Cooling Towers
- Ethylene Oxide - Sterilizers and Aerators
- Dioxin - Medical Waste Incinerators
- Fluorides - Phosphoric Acid Plants
- Asbestos - Containing Material for Surfacing Applications
- Toxic Metals from Non-Ferrous Metal Melting
- Perchloroethylene from Dry Cleaning Operations
- Stationary Compression Ignition Engines

- Section 4 -

## Implementation of Federal Air Toxics Mandates

The Federal Environmental Protection Agency (EPA) has issued National Emission Standards for Hazardous Air Pollutants (NESHAPS) through Part 61 and Part 63 of Title 40 of the Code of Federal Regulations (CFR). The Part 61 NESHAPS were issued prior to the adoption of the Federal Clean Air Act Amendments of 1990. Those NESHAPS are specific to a particular hazardous air pollutant (HAP). Due to little activity in adopting NESHAPS, the 1990 amendments to the Federal Clean Air Act established a new procedure for developing NESHAPS. A list of 189 HAPs was established. EPA identified industries that emitted those HAPs and established a prioritized list of over 70 source categories for which Maximum Achievable Control Technology (MACT) standards would be promulgated. These MACT standards apply to major sources of HAPs, defined as sources with emissions greater than 10 tons per of a single HAP, or 25 tons per year of combined HAPs. Many of these source categories are already subject to state and local regulation, which have traditionally been more stringent than the federal regulations. EPA has already adopted MACT standards to address the majority of the source categories identified.

In addition to the MACT standards for major sources, EPA is also required to adopt NESHAP standards to reduce the health risk associated with area (non-major) sources of HAPs. Similar to the MACT standards for major sources, many of the area sources subject to these standards are already subject to state and local regulation. Area source NESHAPS have already been promulgated for Oil and Natural Gas Production Facilities; Polyvinyl Chloride and Copolymers Production; Primary Copper Smelting, Secondary Copper Smelting, and Primary Nonferrous Metals-- Zinc, Cadmium, and Beryllium; Acrylic and Modacrylic Fibers Production; Carbon Black Production; Chemical Manufacturing; Chromium Compounds; Flexible Polyurethane Foam Production and Fabrication; Lead Acid Battery Manufacturing; Wood Preserving; Clay Ceramics Manufacturing; Glass Manufacturing; Secondary Nonferrous Metals Processing; Electric Arc Furnace Steelmaking Facilities; and Hospital Ethylene Oxide Sterilizers.

### Current Status of Delegation

The District currently is delegated authority by EPA to implement and enforce NESHAPS through two mechanisms. First, all major sources of HAPs are required to obtain Title V operating permits. The NESHAP requirements for these major sources are included in the Title V permits, and are directly implemented and enforced by the District through those permits. Second, the District is delegated authority to implement and enforce all area source NESHAPS that are included in District Rule 4002, most recently amended on May 20, 2004. The District is investigating options for obtaining delegation of authority for the recently adopted area source NESHAPS. Under the District's Air Toxics Program and federal



regulations, there are several options for implementing new NESHAP standards. These options are discussed in more detail below. The District will choose the most appropriate option for implementing each Federal standard, and will hold public workshops to obtain public input on the implementation of these additional standards.

### **Straight Delegation**

Accepting delegation of the federal standard as written by amending Rule 4002 or by agreeing to automatic delegation with an option of opting-out for specific NESHAPS using an approach developed by the California Air Pollution Control Officers Association (CAPCOA);

### **Rule Adjustment**

Proposing minor changes to the federal MACT rule that make the adjusted rule no less stringent than the federal standard;

### **Rule Substitution**

Substituting one or more existing, new, or amended District rules for the federal standard (It should be noted that California Districts have been delegated authority for the chrome plating and dry cleaning NESHAPS because EPA has agreed that the ATCMs for those source categories are equivalent to the NESHAPS.);

### **Streamlining Multiple Applicable Requirements**

Minimizing duplicative requirements by placing the more stringent emission limit or workplace practice standard on the permit along with the corresponding monitoring, recordkeeping, and reporting requirements.

### **Program Substitution**

Using existing programs to assure compliance with the requirements of federal standards.

### **No Delegation**

Use existing programs to reduce the emissions of hazardous air pollutants without delegation of federal standards.

The NESHAPS for which the District has received delegation through Rule 4002 are listed in Table B-1 in Appendix B. All current NESHAPS for which the District has not received delegation through Rule 4002 are listed in Table B-2 in Appendix B.

- Section 5 -

## **California Environmental Quality Act and Health Risk Reduction**

The California Environmental Quality Act (CEQA) requires public agencies to evaluate project environmental impacts and all feasible alternatives or mitigation measures that can substantially reduce or avoid those impacts. Generally, the main responsibility for satisfying CEQA requirements, or “lead agency” role, falls to city or county planning agencies.

From a health risk perspective, land use decisions are critical to improving air quality within the San Joaquin Valley Air Basin because land use patterns greatly influence potential exposure of sensitive receptors to sources of air pollution. Under CEQA, land use agencies must evaluate the potential significance of health risks associated with the projects they approve. However, most land use agencies lack the necessary technical expertise to assess health risk impacts associated with exposure to toxic air contaminants. As a result, there is a great need for the District to provide land use agencies tools that will assist them with incorporating health risk assessment of exposure to toxic air contaminants into their land use decisions.

### **Modeling Guidance and Tools**

Air districts have traditionally provided guidance to local lead agencies in evaluating and addressing air pollution impacts from projects subject to CEQA. Recognizing the need for information and screening tools to support decision makers as they establish policies and programs for CEQA, the District has revised its Health Risk Assessment (HRA) modeling guidance document to address issues that arise in CEQA HRAs.

### **Public Assistance**

With concerns about health risk impacts from CEQA projects and the need to streamline the CEQA HRA review process; the District has dedicated a significant amount of effort into providing assistance to proponents and their consultants in preparing CEQA HRAs. This assistance includes providing extensive assistance to consultants regarding health risk modelling. In addition to providing direct assistance, the District carefully reviews the HRAs included in CEQA documents circulated by public agencies for review, and provides further feedback and guidance.

- Section 6 -

## Air Dispersion Modeling

Air quality models use mathematical techniques to simulate the physical and chemical processes that affect air pollutants as they disperse and react in the atmosphere. These models form the backbone of the air toxics management process, as they are used to assess the potential exposure of the public to various toxic emissions. Using inputs of meteorological data and source parameter information such as emission rates and stack height, models predict ambient concentrations of primary pollutants that are emitted. Models are also important to the air quality management process because they determine compliance with National/State Ambient Air Quality Standards (NAAQS/SAAQS), and other regulatory requirements such as New Source Review (NSR).

### EPA Regulatory Model (AERMOD)

The American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC) was formed to introduce state-of-the-art modeling concepts into the EPA's air quality models. The members of AERMIC developed a modeling system, AERMOD, to incorporate air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain.

With the promulgation of AERMOD as the preferred air dispersion model in EPA's *Guideline on Air Quality Models* (signed by the EPA Administrator on October 21, 2005 and published November 9, 2005 in the *Federal Register*), AERMOD is used for appropriate application as a replacement for ISCST3 after November 9, 2006.

### Meteorological Data

The District purchased data generated from the MM5 meteorological model for the western part of the San Joaquin Valley. This allowed for better modeling on the Westside of the valley; where there are no Automated Surface Observation System (ASOS) that collect sufficient data needed for met processing.

All processed data is freely available for download on the District's web page at [http://www.valleyair.org/busind/pto/Tox\\_Resources/AirQualityMonitoring.htm](http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm).

## **Modeling Guidance**

The District has developed a modeling guidance document that was designed to address major issues involved with running AERMOD and specific guidance with default modeling parameters for common source types. The modeling guidance document can be found on the District's web site at [http://www.valleyair.org/busind/pto/Tox\\_Resources/AirQualityMonitoring.htm](http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm).

## **Modeling Support to Public Agencies, State-wide, and Others**

The District is one of the leading air dispersion modeling experts in the State of California, a position earned by ensuring that the newest models and techniques are implemented by the District, and by providing modeling guidance to support internal and external users. Additionally, District staff has been called by local government agencies, other Districts, consultants working on projects outside the Valley, and ARB to provide modeling assistance and guidance.

## **APPENDICES**

Appendix A: Toxic Emissions Summary

Appendix B: Current Status of NESHAP Delegation

Appendix A - Table A-1

## Toxic Emissions Summary

Pollutant	Emissions (tons per year)
Diesel Particulate Matter	6,073
Formaldehyde	4,065
Benzene	1,680
Acetaldehyde	1,602
1,3-Butadiene	515
Perchloroethylene	360
Acrolein	1023
Methylene Chloride	404
PAHs	199
p-Dichlorobenzene	156
Manganese	44
Styrene	23
Nickel	4
Chromium	8
Trichloroethylene	13
Lead	8
Vinyl Chloride	1
Acrylonitrile	2
Arsenic	2
Cadmium	1
Mercury	1
Ethylene Oxide	1
Chloroform	0
Ethylene Dichloride	0
Beryllium	0
Carbon Tetrachloride	0
Dioxins/Benzofurans	0
Chromium, Hexavalent	0

<sup>1</sup> Emissions for eight counties of San Joaquin Valley from California Air Resources Board California Toxics Inventory (CTI) for 2008, the latest available year. Data for CTI was obtained from a variety of District and State sources.

Appendix B

## Current Status of NESHAP Delegation

### *NESHAP Delegated*

**NESHAPS for Which Authority Has Been Delegated to the District Because They Are Included in Rule 4002**

**Table B-1 - 40 CFR 63**

<b><i>Subpart</i></b>	<b><i>Title</i></b>
A	General Provisions
F-I	National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry
J	National Emission Standards for Hazardous Air Pollutants from Polyvinyl Chloride and Copolymers Production
L	National Emission Standards for Coke Oven Batteries
R	National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)
S	National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry
T	National Emission Standards for Halogenated Solvent Cleaning (except §63.462 - Batch cold cleaning machine standards)
U	National Emission Standards for Hazardous Air Pollutant Emissions: Group I Polymers and Resins
W	National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production
X	National Emission Standards for Hazardous Air Pollutants From Secondary Lead Smelting
Y	National Emission Standards for Marine Tank Vessel Loading Operations
AA	National Emission Standards for Hazardous Air Pollutants From Phosphoric Acid Manufacturing Plants
BB	National Emission Standards for Hazardous Air Pollutants From Phosphate Fertilizers Production Plants
CC	National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
DD	National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations
EE	National Emission Standards for Magnetic Tape Manufacturing Operations
GG	National Emission Standards for Aerospace Manufacturing and Rework Facilities
HH	National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities
II	National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)
JJ	National Emission Standards for Wood Furniture Manufacturing

<b>Subpart</b>	<b>Title</b>
	Operations
KK	National Emission Standards for the Printing and Publishing Industry
LL	National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants
MM	National Emission Standards for Hazardous Air Pollutants from Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semicheical Pulp Mills
YY	National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology (Generic MACT)
CCC	National Emission Standards for Hazardous Air Pollutants for Steel Pickling--HCl Process Facilities and Hydrochloric Acid Regeneration Plants
DDD	National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production
GGG	National Emission Standards for Hazardous Air Pollutants From Pharmaceutical Production
HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities
III	National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production
JJJ	National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins
LLL	National Emission Standards for Hazardous Air Pollutants for Source Categories; Portland Cement Manufacturing Industry
MMM	National Emission Standards for Hazardous Air Pollutants: Pesticide Active Ingredient Production
NNN	National Emission Standards for Hazardous Air Pollutants for Source Categories; Wool Fiberglass Manufacturing
OOO	National Emission Standards for Hazardous Air Pollutant Emissions: Manufacture of Amino/Phenolic Resins
PPP	National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production
QQQ	National Emission Standards for Hazardous Air Pollutants from Primary Copper Smelting
RRR	National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production
TTT	National Emission Standards for Hazardous Air Pollutants for Primary Lead Smelting
UUU	National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
VVV	National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works
XXX	National Emission Standards for Hazardous Air Pollutants for Ferroalloys Production: Ferromanganese and Silicomanganese
AAAA	National Emission Standards for Hazardous Air Pollutants from Municipal Solid Waste Landfills
CCCC	National Emission Standards for Hazardous Air Pollutants from

<b>Subpart</b>	<b>Title</b>
	Manufacturing of Nutritional Yeast
EEEE	National Emission Standards for Hazardous Air Pollutants from Organic Liquids Distribution (Non-Gasoline)
FFFF	National Emission Standards for Hazardous Air Pollutants from Miscellaneous Organic Chemical Manufacturing
GGGG	National Emission Standards for Hazardous Air Pollutants from Solvent Extraction for Vegetable Oil Production
HHHH	National Emission Standards for Hazardous Air Pollutants from Wet-Formed Fiberglass Mat Production
JJJJ	National Emission Standards for Hazardous Air Pollutants from Paper and Other Web Coating
KKKK	National Emission Standards for Hazardous Air Pollutants from Surface Coating of Metal Cans
MMMM	National Emission Standards for Hazardous Air Pollutants from Surface Coating of Miscellaneous Metal Parts and Products
NNNN	National Emission Standards for Hazardous Air Pollutants from Surface Coating of Large Appliances
OOOO	National Emission Standards for Hazardous Air Pollutants from Printing, Coating, and Dyeing of Fabrics and Other Textiles
PPPP	National Emission Standards for Hazardous Air Pollutants from Surface Coating of Plastic Parts and Products
QQQQ	National Emission Standards for Hazardous Air Pollutants from Surface Coating of Wood Building Products
RRRR	National Emission Standards for Hazardous Air Pollutants from Surface Coating of Metal Furniture
SSSS	National Emission Standards for Hazardous Air Pollutants from Surface Coating of Metal Coil
TTTT	National Emission Standards for Hazardous Air Pollutants from Leather Finishing Operations
UUUU	National Emission Standards for Hazardous Air Pollutants from Cellulose Products Manufacturing
VVVV	National Emission Standards for Hazardous Air Pollutants from Boat Manufacturing
WWWW	National Emission Standards for Hazardous Air Pollutants from Reinforced Plastic Composites Production
XXXX	National Emission Standards for Hazardous Air Pollutants from Rubber Tire Manufacturing
YYYY	National Emission Standards for Hazardous Air Pollutants from Stationary Combustion Turbines
AAAAA	National Emission Standards for Hazardous Air Pollutants from Lime Manufacturing Plants
BBBBB	National Emission Standards for Hazardous Air Pollutants from Semiconductor Manufacturing
CCCCC	National Emission Standards for Hazardous Air Pollutants from Coke Ovens: Pushing, Quenching, and Battery Stacks
EEEEE	National Emission Standards for Hazardous Air Pollutants from Iron and Steel Foundries



<b>Subpart</b>	<b>Title</b>
FFFFF	National Emission Standards for Hazardous Air Pollutants from Integrated Iron and Steel Manufacturing
GGGGG	National Emission Standards for Hazardous Air Pollutants from Site Remediation
HHHHH	National Emission Standards for Hazardous Air Pollutants from Miscellaneous Coating Manufacturing
IIIII	National Emission Standards for Hazardous Air Pollutants from Mercury Emissions From Mercury Cell Chlor-Alkali Plants
JJJJJ	National Emission Standards for Hazardous Air Pollutants from Brick and Structural Clay Products Manufacturing
KKKKK	National Emission Standards for Hazardous Air Pollutants from Clay Ceramics Manufacturing
LLLLL	National Emission Standards for Hazardous Air Pollutants from Asphalt Processing and Asphalt Roofing Manufacturing
MMMMM	National Emission Standards for Hazardous Air Pollutants from Flexible Polyurethane Foam Fabrication Operations
PPPPP	National Emission Standards for Hazardous Air Pollutants from Engine Test Cells/Stands
QQQQQ	National Emission Standards for Hazardous Air Pollutants from Friction Materials Manufacturing Facilities
RRRRR	National Emission Standards for Hazardous Air Pollutants from Taconite Iron Ore Processing
SSSSS	National Emission Standards for Hazardous Air Pollutants from Refractory Products Manufacturing
TTTTT	National Emission Standards for Hazardous Air Pollutants from Primary Magnesium Refining

**NESHAP Not Delegated**

**NESHAPS for Which Authority Has Not Yet Been Delegated to the District**

**Table B-2 - 40 CFR 63**

<b>Subpart</b>	<b>Title</b>
L	National Emission Standards For Coke Oven Batteries
M	National Perchloroethylene Air Emission Standards For Dry Cleaning Facilities – California Not Delegated Authority To Enforce 17 CCR 93109 Instead Of Subpart M For Major Sources.
N	National Emission Standards For Chromium Emissions From Hard And Decorative Chromium Electroplating And Chromium Anodizing Tanks – California Delegated Authority To Enforce 17 CCR 93102 Instead Of Subpart N. Applies To Old ATCM.
O	Ethylene Oxide Emissions Standards For Sterilization Facilities
Q	National Emission Standards For Hazardous Air Pollutants For Industrial Process Cooling Towers
OO	NATIONAL Emission Standards For Tanks - Level 1
PP	National Emission Standards For Containers
QQ	National Emission Standards For Surface Impoundments
RR	National Emission Standards For Individual Drain Systems
SS	National Emission Standards For Closed Vent Systems, Control Devices, Recovery Devices And Routing To A Fuel Gas System Or A Process
TT	National Emission Standards For Equipment Leaks - Control Level 1
UU	National Emission Standards For Equipment Leaks - Control Level 2 Standards
VV	National Emission Standards For Oil-Water Separators And Organic-Water Separators
WW	National Emission Standards For Storage Vessels (Tanks) - Control Level 2
XX	National Emission Standards For Ethylene Manufacturing Process Units: Heat Exchange Systems And Waste Operations
EEE	National Emission Standards For Hazardous Air Pollutants From Hazardous Waste Combustors
DDDD	National Emission Standards For Hazardous Air Pollutants: Plywood And Composite Wood Products
IIII	National Emission Standards For Hazardous Air Pollutants: Surface Coating Of Automobiles And Light-Duty Trucks
ZZZZ	National Emissions Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines
DDDDD	National Emission Standards For Hazardous Air Pollutants For Industrial, Commercial, And Institutional Boilers And Process Heaters
NNNNN	National Emission Standards For Hazardous Air Pollutants: Hydrochloric Acid Production
WWWWW	National Emission Standards For Hospital Ethylene Oxide Sterilizers
YYYYY	National Emission Standards For Hazardous Air Pollutants For Area Sources: Electric Arc Furnace Steelmaking Facilities
ZZZZZ	National Emission Standards For Hazardous Air Pollutants For Iron And

<b>Subpart</b>	<b>Title</b>
	Steel Foundries Area Sources
BBBBBB	National Emission Standards For Hazardous Air Pollutants For Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, And Pipeline Facilities
CCCCCC	National Emission Standards For Hazardous Air Pollutants For Source Category: Gasoline Dispensing Facilities
DDDDDD	National Emission Standards For Hazardous Air Pollutants For Polyvinyl Chloride And Copolymers Production Area Sources
EEEEEE	National Emission Standards For Hazardous Air Pollutants For Primary Copper Smelting Area Sources
FFFFFF	National Emission Standards For Hazardous Air Pollutants For Secondary Copper Smelting Area Sources
GGGGGG	National Emission Standards For Hazardous Air Pollutants For Primary Nonferrous Metals Area Sources - Zinc, Cadmium, And Beryllium
HHHHHH	National Emission Standards For Hazardous Air Pollutants: Paint Stripping And Miscellaneous Surface Coating Operations At Area Sources
LLLLLL	National Emission Standards For Hazardous Air Pollutants For Acrylic And Modacrylic Fibers Production Area Sources
MMMMMM	National Emission Standards For Hazardous Air Pollutants For Carbon Black Production Area Sources
NNNNNN	National Emission Standards For Hazardous Air Pollutants For Chemical Manufacturing Area Sources: Chromium Compounds
OOOOOO	National Emission Standards For Hazardous Air Pollutants For Flexible Polyurethane Foam Production And Fabrication Area Sources
PPPPPP	National Emission Standards For Hazardous Air Pollutants For Lead Acid Battery Manufacturing Area Sources
QQQQQQ	National Emission Standards For Hazardous Air Pollutants For Wood Preserving Area Sources
RRRRRR	National Emission Standards For Hazardous Air Pollutants For Clay Ceramics Manufacturing Area Sources
SSSSSS	National Emission Standards For Hazardous Air Pollutants For Glass Manufacturing Area Sources
TTTTTT	National Emission Standards For Hazardous Air Pollutants For Secondary Nonferrous Metals Processing Area Sources