

## About this Report

This annual report was prepared by your San Joaquin Valley Air Pollution Control District. The District is a public health agency committed to improving the health and quality of life for all Valley residents through effective and cooperative air quality programs. The report describes the District's efforts and progress in implementing one of those programs, the District's air toxics program, which addresses emissions of toxic air contaminants. Over the past several years, these efforts have resulted in significant reductions in the exposure of Valley residents to toxic substances.

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

The U.S. EPA and the California Air Resources Board have identified over 800 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.

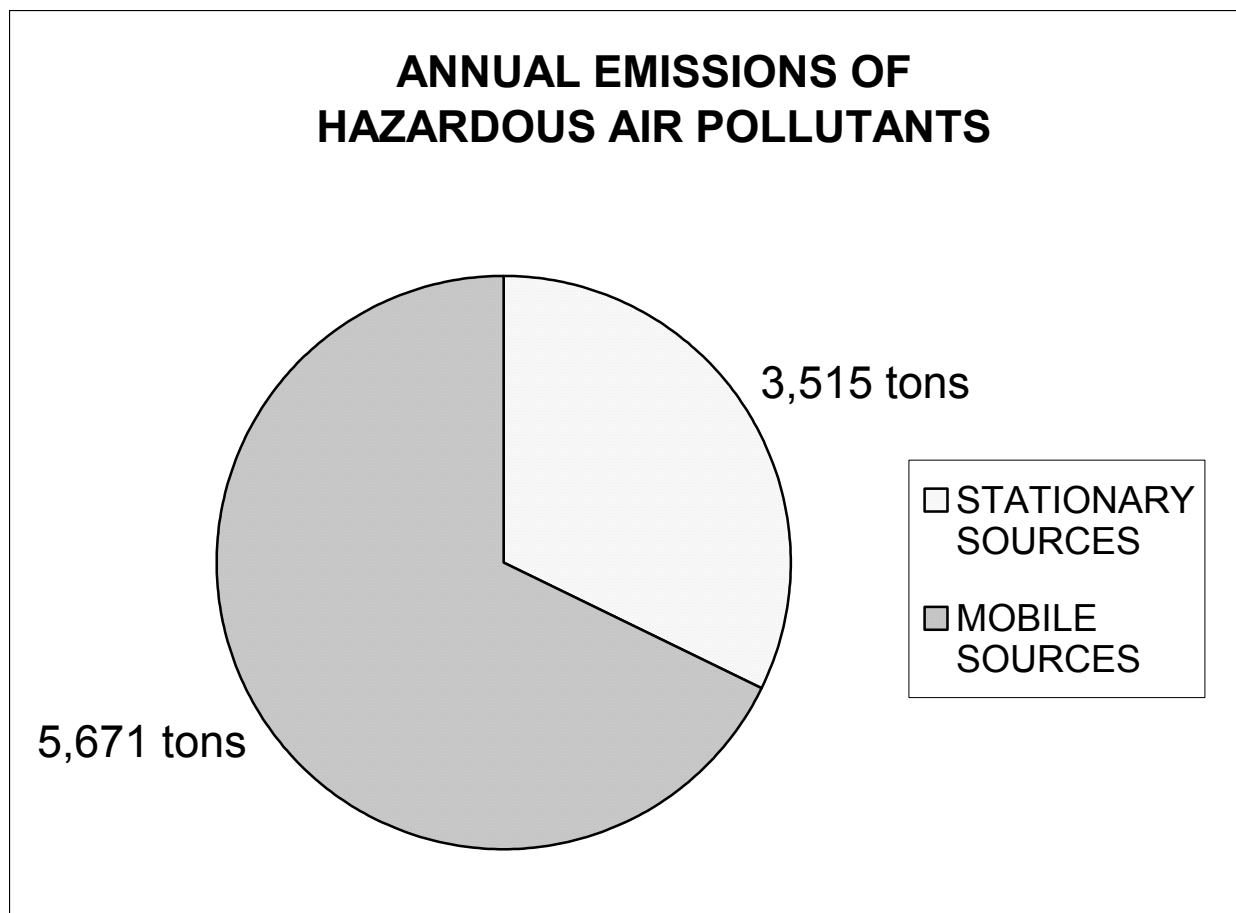
**Table 1 - San Joaquin Valley Hazardous Air Pollutant Emissions**

<b>Pollutant</b>	<b>Emissions (tons per year)</b>
Diesel Particulate Matter	4,643
Formaldehyde	3,836
Benzene	3,039
Acetaldehyde	1,285
1,3-Butadiene	668
Perchloroethylene	469
Methylene chloride	390
Acrolein	241

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

Toxic Air Contaminants are emitted both from mobile sources (i.e., cars, trucks, buses, tractors, etc), which are primarily regulated by the State and U.S.EPA; and from stationary sources, which are regulated by the District. Figure 1 below shows a comparison of mobile and stationary source emissions of hazardous air pollutants in the San Joaquin Valley. Approximately 62% of hazardous air pollutant emissions are from mobile sources.

**Figure 1 – Comparison of Mobile and Stationary Source Emissions**



*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 still required to provide updates to their emissions reports every four years. In 2004, the District reviewed and approved toxic emissions inventory reports and updates for 49 Valley facilities. New data from these reports was entered into the California Emission Inventory Data and Reporting System (CEIDARS).

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. The District prepared updated toxic emissions inventories for these facilities in 2003, and will update this data again in 2007.

### **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 Hot Spots 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 Toxic Emission Inventory Report, the District ranks the health risk posed by the facility as "low", "medium", or "high" priority. Facilities ranked as high priority are required to perform health risk assessments. District personnel perform the prioritizations using computerized spreadsheets and database programs. The following table summarizes the 28 prioritizations performed for Valley facilities in 2004.

**Table II – 2004 Prioritization Statistics**

<b>Facility Name</b>	<b>Location</b>	<b>Priority</b>
----------------------	-----------------	-----------------

<b>Facility Name</b>	<b>Location</b>	<b>Priority</b>
DIAMOND WALNUT GROWERS, INC.	Stockton	High
AERA ENERGY LLC	Kern County	Intermediate
HANFORD L P	Hanford	Intermediate
GUARDIAN FABRICATION INC	Reedley	Intermediate
PACIFIC PIPELINE SYSTEM, LLC	Lebec	Intermediate
DEL REY PACKING	Del Rey	Intermediate
CALIF STATE PRISON – CORCORAN	Corcoran	Intermediate
NEWARK SIERRA PAPERBOARD CORP.	Stockton	Intermediate
THE WINE GROUP, INC.	Ripon	Intermediate
COVANTA STANISLAUS, INC	Crows Landing	Intermediate
STYROTEK INC	Delano	Intermediate
KINGS COUNTY ANIMAL CONTROL	Hanford	Intermediate
PARK VIEW MAUSOLEUM & CREMATORY	Manteca	Intermediate
EVERGREEN CREMATION SERVICE	Fresno	Intermediate
UNION CEMETERY ASSOCIATION	Bakersfield	Intermediate
LOS BANOS FOODS, INC	Los Banos	Intermediate
TINKLER MISSION CHAPEL	Fresno	Intermediate
J R SIMPLOT COMPANY	Helm	Intermediate
DAI OILDALE INC	Oildale	Intermediate
OWENS-BROCKWAY GLASS CONTAINER	Tracy	Intermediate
BELMONT MEMORIAL PARK	Fresno	Low
LONE STAR GAS LIQUIDS	Shafter	Low
PARAMOUNT KING LLC	Lost Hills	Low
ADVANCED FOOD PRODUCTS LLC	Visalia	Low
RECOT INC	Bakersfield	Low
TULARE COUNTY ANIMAL CONTROL	Visalia	Low
LODI MEMORIAL CEMETERY	Lodi	Low
MODERN WELDING	Fresno	Low
CERES CEMETERY	Ceres	Low

One facility, the Diamond Walnut Growers operation in Stockton, was determined to be high priority facility again in 2004 due to fumigant emissions. Diamond was designated as a significant risk facility previously, and performed public notifications as required in under State law in 2003. They will be required to repeat the public notifications in 2005.

*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.

The District approved one additional health risk assessment in 2004. The determination based on this Health Risk Assessment is given in Table III.

**Table III - Health Risk Assessments Approved in 2004**

Facility Name	Location	Risk Determination
California Air National Guard	Fresno	Not a Significant Risk Facility Requiring Public Notification

**Preventing the Creation of 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. This risk management review is performed by District staff as part of the engineering evaluation for these projects. Since risk management review is performed concurrently with other project review functions using streamlined procedures, the process does not extend the length of time necessary to process applications.

Under the District's risk management policy, 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 not to be approvable as proposed, District staff work with the applicant to find approvable low-risk alternatives to the initial proposal. During 2004, District staff performed risk

management reviews for over 500 projects with increases in hazardous air pollutant emissions.

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

District activities aimed at limiting and reducing emissions of toxic air contaminants include: 1) addressing the risk due to diesel exhaust; 2) implementing federal air toxics mandates; and 3) Risk Reduction Audits and Plans performed as part of Air Toxics Hot Spots Requirements.

#### *Addressing Risk Due to Diesel Exhaust*

In August of 1998, following a comprehensive 10-year scientific investigation, the California Air Resources Board 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, the 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, they chose to establish an advisory committee of interested parties, and develop a comprehensive risk management plan that would result in significant reductions in emissions of diesel particulate matter.

Although the vast majority of diesel engines are associated with mobile sources of air pollution (trucks, locomotives, tractors, etc.) regulated by the State, many industrial and commercial operations also use stationary and transportable diesel engines that are subject to District permitting requirement. Under the District's Risk Management Policy for New and Modified Sources, Toxic Best Available Control Technology (TBACT) is required for emission units that pose a "greater than de minimus" increase in risk. However, before the requirements of this policy could be implemented for diesel engines, TBACT still had to be determined. This TBACT determination came in October of 2000, when the ARB approved the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines, which was developed by the Statewide advisory committee of interested parties. In approving the guidance, the

State Board found that catalyzed diesel particulate filters, which have been used successfully for a wide variety of applications, are TBACT for stationary non-emergency engines, and that an emission rate of 0.149 grams per Horsepower-hour or less is TBACT for emergency engines.

The District began implementing the State guidance for stationary diesel engines in March of 2001. Since that time, the District has approved several hundred proposals for new cleaner engines meeting these TBACT requirements. In 2002, the District has also began collecting and reviewing diesel emissions and risk data in update reports prepared for stationary sources under the State Air Toxics Hot Spots Program.

### *Implementation of Federal Air Toxics Mandates*

Title III of the 1990 Federal Clean Air Act Amendments rewrote Section 112 of the Act requiring the EPA to embark on a ten-year effort to develop detailed technology-based standards for 189 hazardous air pollutants. These new federal Maximum Achievable Control Technology (MACT) Standards affect over 70 source categories, many of which are already subject to State regulation. Other Title III mandates may also duplicate existing State and local requirements.

Under the District's Integrated Air Toxics Program and federal regulations, there are several options for implementing new technology-based federal standards:

- 1) Straight Delegation -- Accepting delegation of the federal standard as written;
- 2) Rule Adjustment -- Proposing minor changes to the federal MACT rule that make the adjusted rule no less stringent than the federal standard;
- 3) Rule Substitution -- Substituting one or more existing, new, or amended District rules for the federal standard;
- 4) 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.
- 5) Program Substitution -- Using existing programs to assure compliance with the requirements of federal standards.

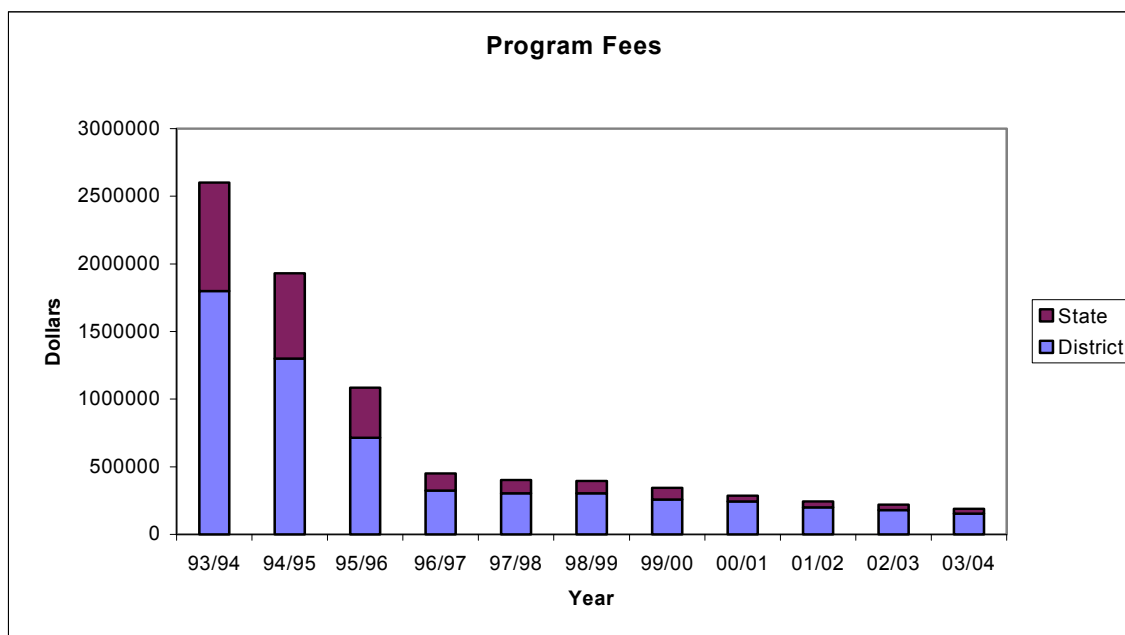
The District must choose the most appropriate option for implementing each federal standard. Three series of public workshops have been held to obtain public input on the implementation of federal standards. Options chosen for implementing Federal Standards are given in Appendix B.

### *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.

### **Minimizing Program Costs**

During 2004, District progress in making air toxics reduction efforts more cost effective continued. These further reductions were 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 has been realized in the past 11 fiscal years.





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

**Activities by California Air Resources Board 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.

**Appendix A- Table A-1**

## San Joaquin Valley Hazardous Air Pollutant Emissions<sup>1</sup>

Pollutant	Emissions (tons per year)
Diesel Particulate Matter	4,643
Formaldehyde	3,836
Benzene	3,039
Acetaldehyde	1,285
1,3-Butadiene	668
Perchloroethylene	469
Methylene chloride	390
Acrolein	241
Styrene	185
p-Dichlorobenzene	144
Chromium	62
Nickel	36
Lead	9.9
Manganese	9.6
Arsenic	9.2
PAHs	5.3
Chloroform	2.6
Trichloroethylene	1.9
Cadmium	1.5
Mercury	1.3
Hexavalent Chromium	0.61
Ethylene oxide	0.16
Ethylene dibromide	0.13
Ethylene dichloride	0.13
Beryllium	0.076
Vinyl chloride	0.075
Carbon tetrachloride	0.027
Acrylonitrile	0.0048
Hydrazine	0.0012
Dioxins/Benzofurans	0.00002
Hexachlorobenzene	0.00001

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

## Appendix B

### Options chosen for Implementing MACT Standards

<b><u>40 CFR 63</u></b>	<b><u>Source Category</u></b>	<b><u>Option</u></b>
Subpart F-I	Synthetic Organic Chemical Mfg. (HON)	Straight Delegation
Subpart L	Coke Oven Batteries	Straight Delegation
Subpart M	Dry Cleaning	Rule Substitution
Subpart N	Chromium Electroplating and Anodizing	Rule Substitution
Subpart O	Ethylene Oxide Sterilization Facilities	Straight Delegation
Subpart Q	Industrial Process Cooling Towers	Straight Delegation
Subpart R	Gasoline Distribution	Streamlining MAR
Subpart S	Pulp and Paper Industry	Straight Delegation
Subpart T	Halogenated Solvent Cleaning	Rule Substitution
Subpart U	Group I Polymers and Resins	Straight Delegation
Subpart W	Epoxy Resins and Non-Nylon Polyamides	Straight Delegation
Subpart X	Secondary Lead Smelting	Straight Delegation
Subpart Y	Marine Tank Vessel Loading Operations	Straight Delegation
Subpart U	Group I Polymers and Resins	Straight Delegation
Subpart AA	Phosphoric Acid Manufacturing Plants	Straight Delegation
Subpart BB	Phosphate Fertilizer Production Plants	Straight Delegation
Subpart CC	Petroleum Refineries	Streamlining MAR
Subpart DD	Off-Site Waste and Recovery Operations	Streamlining MAR
Subpart EE	Magnetic Tape Manufacturing	Straight Delegation
Subpart GG	Aerospace Manufacturing and Rework	Straight Delegation
Subpart HH	Oil and Natural Gas Production Facilities	Streamlining MAR
Subpart II	Shipbuilding and Repair (Surface Coating)	Straight Delegation
Subpart JJ	Wood Furniture Manufacturing	Straight Delegation
Subpart KK	Printing and Publishing Industry	Straight Delegation
Subpart LL	Primary Aluminum Reduction Plants	Straight Delegation
Subpart YY	Generic MACT	Straight Delegation
Subpart CCC	Steel Pickling	Straight Delegation
Subpart DDD	Mineral Wool Production	Straight Delegation
Subpart GGG	Pharmaceutical Production	Straight Delegation
Subpart HHH	Natural Gas Transmission and Storage	Streamlining MAR
Subpart III	Flexible Polyurethane Foam Production	Streamlining MAR
Subpart JJJ	Group IV Polymers and Resins	Straight Delegation
Subpart LLL	Portland Cement Manufacturing	Straight Delegation
Subpart MMM	Pesticide Active Ingredient Manufacturing	Straight Delegation
Subpart NNN	Wool Fiberglass Manufacturing	Streamlining MAR
Subpart OOO	Manufacture of Amino/Phenolic Resins	Straight Delegation
Subpart PPP	Polyether Polyol Production	Straight Delegation
Subpart RRR	Secondary Aluminum Production	Straight Delegation
Subpart TTT	Primary Lead Smelting	Straight Delegation
Subpart VVV	Publicly Owned Treatment Works	Straight Delegation
Subpart XXX	Ferroalloys Production	Straight Delegation
Subpart J -	Polyvinyl Chloride and Copolymers	Straight Delegation
Subpart MM -	Chemical Recovery Combustion	Straight Delegation
Subpart QQQ -	Primary Copper Smelting	Straight Delegation

## Appendix B

### Options chosen for Implementing MACT Standards (cont.)

#### **40 CFR 63**

#### **Source Category**

Subpart UUU -	Petroleum Refineries: Catalytic, SRUs	Straight Delegation
Subpart AAAA -	Municipal Solid Waste Landfills	Straight Delegation
Subpart EEEE -	Organic Liquids Distribution (Non-Gasoline)	Straight Delegation
Subpart CCCC -	Manufacturing of Nutritional Yeast	Straight Delegation
Subpart DDDD -	Plywood and Composite Wood Products	Straight Delegation
Subpart FFFF -	Miscellaneous Organic Chemical Mfg.	Straight Delegation
Subpart GGGG -	Solvent Extraction for Vegetable Oil	Streamlining MAR
Subpart HHHH -	Wet-Formed Fiberglass Mat Production	Straight Delegation
Subpart IIII -	Surface Coating of Autos and Lt Trucks	Straight Delegation
Subpart JJJJ -	Paper and Other Web Coating	Straight Delegation
Subpart KKKK -	Surface Coating of Metal Cans	Straight Delegation
Subpart LLLL -	Asphalt Processing and Roofing Mfg	Straight Delegation
Subpart MMMM -	Surface Coating of Metal Parts and Products	Straight Delegation
Subpart NNNN -	Surface Coating of Large Appliances	Straight Delegation
Subpart OOOO -	Printing, Coating, and Dyeing of Textiles	Straight Delegation
Subpart PPPP -	Surface Coating of Plastic Parts and Products	Straight Delegation
Subpart QQQQ -	Surface Coating of Wood Building Products	Straight Delegation
Subpart RRRR -	Surface Coating of Metal Furniture	Straight Delegation
Subpart SSSS -	Surface Coating of Metal Coil	Straight Delegation
Subpart TTTT -	Leather Finishing Operations	Straight Delegation
Subpart UUUU -	Cellulose Products Manufacturing	Straight Delegation
Subpart VVVV -	Boat Manufacturing	Streamlining MAR
Subpart WWWW -	Reinforced Plastic Composites	Streamlining MAR
Subpart XXXX -	Rubber Tire Manufacturing	Straight Delegation
Subpart YYYY -	Stationary Combustion Turbines	Streamlining MAR
Subpart ZZZZ -	Stationary Reciprocating I.C. Engines	Streamlining MAR
Subpart AAAAA -	Lime Manufacturing Plants	Streamlining MAR
Subpart BBBB -	Semiconductor Manufacturing	Straight Delegation
Subpart CCCC -	Coke Ovens: Pushing, Quenching, and Stacks	Straight Delegation
Subpart DDDD -	ICI Boilers and Process Heaters	Straight Delegation
Subpart EEEE -	Iron and Steel Foundries	Straight Delegation
Subpart FFFF -	Integrated Iron and Steel Manufacturing	Straight Delegation
Subpart GGGG -	Site Remediation	Straight Delegation
Subpart HHHH -	Miscellaneous Coating Manufacturing	Straight Delegation
Subpart IIII -	Mercury From Mercury Cell Chlor-Alkali	Straight Delegation
Subpart JJJJ -	Brick and Structural Clay Products Mfg	Straight Delegation
Subpart KKKK -	Clay Ceramics Manufacturing	Straight Delegation
Subpart MMMM -	Flexible Polyurethane Foam Fabrication	Straight Delegation
Subpart NNNN -	Hydrochloric Acid Production	Straight Delegation
Subpart PPPP -	Engine Test Cells/Stands	Straight Delegation
Subpart QQQQ -	Friction Materials Manufacturing Facilities	Straight Delegation
Subpart RRRR -	Taconite Iron Ore Processing	Straight Delegation
Subpart SSSS -	Refractory Products Manufacturing	Straight Delegation
Subpart TTTT -	Primary Magnesium Refining	Straight Delegation