



DOCUMENTATION FOR THE FINAL 2002 POINT SOURCE NATIONAL EMISSIONS INVENTORY

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DOCUMENTATION FOR THE FINAL 2002 POINT SOURCE NATIONAL EMISSIONS
INVENTORY

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TABLE OF CONTENTS

Section	<u>Page</u>
1.0 INTRODUCTION	5
1.1 What is the National Emissions Inventory?	5
1.2 Why Did the EPA Create the NEI?	5
1.3 How Will the EPA Use The NEI?	6
1.4 Report Organization	7
2.0 INFORMATION QUALITY GUIDELINES ADDENDUM FOR THE 2002 NEI FOR HAPS	8
2.1 Purpose	8
2.2 Explanation of Potential Uses	8
2.3 Product Content - Inputs, Methodologies, and Outputs	9
2.4 Product Limitations and Caveats	11
2.5 Contact Information	12
3.0 DEVELOPMENT OF THE FINAL POINT SOURCE NEI	13
3.1 EIAG Requested State, Local, and Tribal Inventory Data in 2004	14
3.2 Initial Data Received from State, Local, and Tribal Agencies	16
3.3 Initial Data Received from Trade Associations	16
3.4 EIAG Requested ESD Maximum Achievable Control Technology Inventory Data and Facility Lists	20
3.5 Supplementing with TRI Data	22
3.6 Supplementing with DOE and CAMD Electric Utility Data	23
3.7 Processing State, Local, Tribal Agency, MACT, and Industry Data sets	24

TABLE OF CONTENTS (Continued)

3.8	Distribution of Quality Control Reports	25
3.9	Blend-Merging.....	27
3.10	Particulate Matter Augmentation.....	32
3.11	Boiler Augmentation.....	34
3.12	Chromium Augmentation	34
4.0	COMPILING THE INVENTORY DATA INTO THE NEI DATABASE.....	36
4.1	NIF 3.0 and EPA’s Data Standards.....	36
4.1.1	SIC/NAICS Data Standard	36
4.1.2	Latitude/Longitude Data Standard.....	37
4.1.3	Chemical Identification Data Standard.....	37
4.1.4	Facility Identification Data Standard.....	38
4.1.5	Contact Standards	38
4.2	NOF 3.0 and Data Standards	38
5.0	FUTURE UPDATES TO THE 2002 NEI	39
6.0	REFERENCES	40
Appendix A	State, Local and Tribal Data Base Summary Tables for the Draft 2002 Point Source NEI.....	41
Appendix B	MACT Facility Lists for the Final 2002 Point Source NEI.....	50

LIST OF TABLES

Table	<u>Page</u>
3-1 Data Elements Requested from States, Tribes and Local Agencies	17
3-2 States, Local Areas, and Tribes that Provided 2002 Inventory Data	18
3-3 New MACT Source Categories in the Draft 2002 NEI	21
3-4 ESD-Supplied MACT Facility List Flags.....	22
3-5 State and Local Areas and Tribes Providing Revisions to Final 2002 NEI.....	26
3-6 Data Source Code and Description for NO _x , SO ₂ , and Hg Emissions at EGUs.....	33

1.0 INTRODUCTION

1.1 What is the National Emissions Inventory?

The National Emissions Inventory (NEI) is a comprehensive inventory covering all criteria air pollutants (CAPs) and hazardous air pollutants (HAPs) for all areas of the United States. The NEI was created by the EPA's Emission Inventory and Analysis Group (EIAG) in Research Triangle Park, North Carolina.

This report presents an overview of how the point source component of the final 2002 NEI was compiled. Ultimately, the final 2002 NEI will be used to support air quality modeling and other activities. To this end, the EPA established a goal to compile comprehensive, facility-specific data in its 2002 base year NEI for point sources, in addition to preparing nonpoint area and mobile source 2002 base year inventories.

1.2 Why Did the EPA Create the NEI?

The Clean Air Act (CAA), as amended in 1990, includes many mandates for the EPA related to CAPs and HAPs. Regulatory agencies rely on emission inventories as indicators of air quality changes and to set permit requirements. The NEI contains emission estimates for the following CAPs:

- Carbon monoxide (CO)
- Condensable particulate matter (PM-CON)
- Filterable and primary particulate matter less than 2.5 microns (PM2.5-FIL and PM2.5-PRI)
- Filterable and primary particulate matter less than 10 microns (PM10-FIL and PM10-PRI)
- Nitrogen oxides (NO_x)

- Sulfur dioxide (SO₂)
- Volatile organic compounds (VOC)

Ammonia is also included in the NEI as a precursor to PM formation. Lead is both a CAP and a HAP.

The NEI is a tool that EPA can use to meet the CAA mandates for HAPs as well. The CAA presents a list of 188 HAPs (see <http://www.epa.gov/ttn/atw/orig189.html> for a list of pollutants and their chemical abstract service [CAS] numbers), for which EPA is to identify their sources, quantify their emissions by source category, develop regulations for each source category, and assess public health and environmental impacts after the regulations are put into effect.

1.3 How Will the EPA Use The NEI?

It is anticipated that the 2002 point source inventory developed from this effort will have multiple end uses. The data have been formatted according to protocols established for the EPA's NEI submittals. The common data structure on which the NEI platform is based will allow the NEI point source data to be transferred to multiple end-users for a variety of purposes.

The CAP emission inventory data are used in State Implementation Plans (SIPs), compliance demonstrations, emissions trading, and in modeling activities designed to evaluate ambient air concentrations.

The NEI is a critical component of the EPA's National Air Toxics Program (as described in EPA's July 19, 1999 Federal Register notice, 64 FR 38706). The initial objective is to make the data available to EPA modelers for use in the National Air Toxics Assessment (NATA). In addition, the emissions data compiled as part of this inventory effort will be used in residual risk assessments conducted by EPA.

1.4 Report Organization

Following this introduction, Section 2 provides the Information Quality Guidelines Addendum, a summary of the procedures EIAG implements on the NEI, to make the development of the inventory more transparent. Section 3.0 provides information on how the 2002 NEI point source emission estimates were first derived from state, tribal and local agency inventories, from data provided by the EPA's Emission Standards Division (ESD), from electric generating utility (EGU) data collected by the Department of Energy (DOE) (DOE, 2003) and EPA's Clean Air Markets Division (CAMD) (EPA, 2004a), and from the Toxic Release Inventory (TRI) (U.S. EPA, 2004b) and how these data sources were combined by EPA into the draft and final 2002 NEIs. Section 4.0 provides information on how the inventory data were compiled into a common data structure. Section 5 describes the process for future updates to the 2002 NEI. Section 6 presents references cited in this report.

Appendix A provides summary information on the state, local, and tribal agency inventory data provided to EPA for use in the draft 2002 NEI. Appendix B lists the source of facility lists used to flag facilities in each Maximum Achievable Control Technology (MACT) and Section 112(k) Area Source Standards category in the final 2002 NEI.

2.0 INFORMATION QUALITY GUIDELINES ADDENDUM FOR THE 2002 NEI

2.1 Purpose

The National Emissions Inventory (NEI) is a comprehensive inventory covering all criteria air pollutants (CAPs) and hazardous air pollutants (HAPs) for all areas of the United States. The NEI was created by the EPA's EIAG in Research Triangle Park, North Carolina. Ultimately, the 2002 base year NEI will be used to support air quality modeling and other activities. To this end, the EPA established a goal to compile comprehensive, facility-specific data in its 2002 base year NEI for point sources, in addition to preparing nonpoint area and mobile source 2002 base year inventories.

2.2 Explanation of Potential Uses

The Clean Air Act (CAA) includes many mandates for the EPA related to CAPs and HAPs. The NEI is a tool that EPA can use to meet the CAA mandates. Regulatory agencies rely on emission inventories as indicators of air quality changes and to set permit requirements. The CAA presents a list of 188 HAPs for which EPA is to identify their sources, quantify their emissions by source category, develop regulations for each source category, and assess public health and environmental impacts after the regulations are put into effect.

It is anticipated that the 2002 point source inventory developed from this effort will have multiple end uses. The CAP emission inventory data are used in State Implementation Plans (SIPs), compliance demonstrations, emissions trading, and in modeling activities designed to evaluate ambient air concentrations.

The NEI is a critical component of the EPA's National Air Toxics Program. The initial objective is to make the data available to EPA modelers for use in the National Air Toxics Assessment (NATA). In addition, the emissions data compiled as part of this inventory effort will be used in residual risk assessments conducted by EPA.

2.3 Product Content - Inputs, Methodologies, and Outputs

The scope of the inventory effort was to compile 2002 base year emissions data for point source facilities in the United States, its territories, and tribal areas.

Criteria pollutant emissions for the NEI are collected under the Consolidated Emissions Reporting Rule (CERR) (40 CFR Part 51). Under the CERR, EPA requires states to report SO₂, VOC, NO_x, CO, Pb, PM₁₀, PM_{2.5} and NH₃. The CERR specifies two sets of reporting thresholds for criteria pollutants. Type A (large sources) must report annually, while Type B sources must report every three years. The actual thresholds differ by pollutant and depend upon whether the source is in a nonattainment area or not. For the 2002 NEI, EPA collected information on both Type A and Type B sources.

For HAPs, major sources are defined in the CAA as stationary sources that:

- Have the potential to emit 10 tons per year (tpy) or more of one HAP; or
- Have the potential to emit 25 tpy or more of any combination of HAPs.

Smaller point source facilities with annual emissions below these thresholds can be defined as point area sources and inventoried as such. While states are more likely to report major sources as point sources and smaller sources as nonpoint sources, there are no reporting thresholds for the NEI, and EPA encourages states to submit small sources to the point inventory. In particular, some source categories which are composed of smaller facilities may emit pollutants which have a high toxicity, and states, local agencies and tribes may give these categories higher priority in data collection efforts as point sources.

The goal in developing the point source NEI was to obtain facility-specific data such as facility name, location, stack information, emissions, and process descriptions. It was hoped that the data would be sufficient to support modeling and risk assessment needs. The starting point

for obtaining these facility-specific data was, therefore, state and local air pollution control agencies and tribes, who are most likely to have this type of detailed inventory data.

State and local agencies and tribes were asked to supply emission inventory data to the EPA. Inventory data and facility lists were also requested from the EPA's Emission Standards Division (ESD) for Maximum Achievable Control Technology (MACT) and Section 112(k) Area Source Standards categories. EIAG also collected emission inventory data for electric generating units (EGUs) from the Department of Energy's (DOE) Energy Information Agency (EIA) and EPA's Clean Air Markets Division (CAMD).

To develop a complete point source NEI for HAPs, EPA's Toxic Release Inventory (TRI) data were also used. The purpose of appending TRI data to the tribal-, local-, state-, and ESD-combined databases was to make sure all HAPs and ammonia emissions data for facilities that report to TRI are included in the NEI.

The EIAG report *NEI Quality Assurance and Data Augmentation for Point Sources* (U.S. EPA, 2006) provides details on all of the quality assurance (QA) and augmentation of the initial data obtained for the 2002 NEI. A variety of QA activities are conducted to identify duplicate records, referential integrity problems, and records with missing or out-of-range parameters that are needed for air quality and exposure modeling.

EPA also created QC reports which it distributed to states, tribes, and local agencies after the initial receipt and processing of the data submittals and during its internal review period. It provided reports on this process to give states, tribes, and local agencies a chance to fix errors, review augmented data, and provide comments on EPA's process.

NEI output data are released in a number of formats. EPA's file transfer protocol (ftp) site has separate national point, nonpoint, onroad, and nonroad mobile source 2002 NEI files. The specific data structure used for the 2002 NEI is based on NEI Input Format (NIF)

Version 3.0. The files posted include a README file that describes the different files posted on the site and how to use them, several summary files that bring together important NEI data elements in a more compact format, and lookup tables to aid in decoding abbreviations used throughout the inventory.

2.4 Product Limitations and Caveats

The 2002 NEI is a composite of emission estimates generated by state and local regulatory agencies, tribes, industry, and EPA. Because the estimates originated from a variety of sources and estimation methods, as well as for differing purposes, they will in turn vary in quality, pollutants included, level of detail, and geographic coverage. However, this compilation of emissions estimates represents the best available information to date.

Users of the data should consider that pollutants emitted from a particular source may have little impact on the immediate geographic area, the amount of pollutants emitted does not indicate whether the source is complying with applicable regulations, and risk of individual HAPs may not correspond to risks associated with emissions of HAPs (e.g., 1 lb of benzene emissions and 1 lb of toluene emissions do not result in equal risks).

In addition, state, tribal and local agency-supplied emissions data are given priority in the point source NEI. These submissions are reviewed by the EIAG for data handling and entry errors, and potential double counting. The estimation methods, reliability of data sources and calculations, and other quality assurance issues are the responsibility of the preparing agency. To the extent possible, state, local, and tribal agency-supplied data that appear as outliers in the data set are flagged for further review, and state/local/tribal agency officials are contacted to verify the validity of the data. In some cases, the questionable data are removed.

For some source facilities, emission estimates were not available for 2002. In these cases, data for other base years were used. For some of these source categories, ESD provided emissions data for a year other than 2002 and noted that the data are the best available to

represent 2002. When data are reported for a year other than 2002, the year of the emission estimate is noted in the NEI. Mercury emissions from electric utilities were not included in the draft version of the Point Source NEI due to considerations associated with the proposed Clean Air Mercury Rule (CAMR), but are included in the final version of the point source NEI. EPA issued the proposed CAMR concerning coal- and oil-fired electric utility steam generating units (power plants) on January 30, 2004, and issued a supplemental proposal on March 16, 2004. The proposed rule presents two primary alternative approaches to regulating mercury from power plants. EPA received numerous comments on its proposed regulatory approaches, and evaluated those comments to determine how the new data and information received in the comments affected the benefit-cost analysis and regulatory options under consideration. The final CAMR as promulgated prior to the release of the final 2002 NEI. Thus, mercury emissions from electric utilities were only included in the final 2002 NEI.

2.5 Contact Information

NEI point source questions should be forwarded to:

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3.0 DEVELOPMENT OF THE FINAL POINT SOURCE NEI

The scope of the inventory effort was to compile and subsequently update 2002 base year emissions data for point source facilities in the United States and its territories.

CAP emissions in the NEI are collected under the Consolidated Emissions Reporting Rule (CERR) (40 CFR Part 51). Under the CERR, EPA requires states to report SO₂, VOC, NO_x, CO, Pb, PM₁₀, PM_{2.5} and NH₃. The CERR specifies two sets of reporting thresholds for CAPs. Type A (large sources) must report annually, while Type B sources must report every three years. The actual thresholds differ by pollutant and depend upon whether the source is in a nonattainment area or not. For the 2002 NEI, EPA collected information on both Type A and Type B sources.

For HAPs, major sources are defined in the CAA as stationary sources that:

- Have the potential to emit 10 tons per year (tpy) or more of one HAP; or
- Have the potential to emit 25 tpy or more of any combination of HAPs.

Smaller point source facilities with annual emissions below these thresholds can be defined as point area sources and inventoried as such. While states are more likely to report major sources as point sources and smaller sources as nonpoint sources, there are no reporting thresholds for the NEI, and EPA encourages states to submit small sources to the point inventory. In particular, some source categories which are composed of smaller facilities may emit pollutants which have a high toxicity, and states may give these categories higher priority in data collection efforts as point sources.

The goal in developing the point source NEI was to obtain facility-specific data such as facility name, location, stack information, emissions, and process descriptions. It was hoped that the data would be sufficient to support exposure and other modeling analyses, calculate risk, project control strategies, and track progress to meet the requirements of the CAA. The starting

point for obtaining this facility-specific data was, therefore, state and local air pollution control agencies, who are most likely to have this type of detailed inventory data.

3.1 EIAG Requested State, Local, and Tribal Inventory Data in 2004 and Revisions in 2005

State and local agencies and tribes were asked to supply CAP and HAP emission inventory data to the EPA in June 2004. If they were unable to provide emission inventory data, then the EPA prepared default emission inventory data for the 2002 NEI. EPA will use these data to support assessments which will be used in regulatory decision making.

The target inventory area includes every state, tribal area, and territory in the United States and every county within a state. There are no boundary limitations pertaining to traditional criteria pollutant nonattainment areas or to designated urban areas. If a facility was included in a state or local database, it is included in the NEI regardless of where in the state it was located. The pollutants inventoried include all CAPs:

- Carbon monoxide (CO)
- Condensable particulate matter (PM-CON)
- Filterable and primary particulate matter less than 2.5 microns (PM2.5-FIL and PM2.5-PRI)
- Filterable and primary particulate matter less than 10 microns (PM10-FIL and PM10-PRI)
- Nitrogen oxides (NO_x)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (VOC)
- Lead (Lead is also a HAP)

The CAP emission inventory data are used in State Implementation Plans (SIPs), compliance demonstrations, emissions trading, and in modeling activities designed to evaluate ambient air concentrations, exposure assessments and risk calculations.

The NEI requested data also include ammonia, a PM precursor, and the 188 HAPs identified in Section 112(b) of the CAA. Some agencies collect information on more toxic air pollutants, but only the 188 HAPs are included in the NEI. In addition to numerous specific chemical species and compounds, the list of 188 HAPs includes several compound groups (e.g., individual metals and their compounds, polycyclic organic matter (POM), and glycol ethers); the NEI includes emission estimates for the individual compounds wherever possible. Many of the uses of the NEI depend upon data for individual compounds within these groups rather than aggregated data on each group as a whole. The pollutant code table that lists all of the specific pollutants and compound groups included in the 2002 NEI along with their Chemical Abstract Services (CAS) numbers (for individual compounds) can be found in the 2002 State Lookup File, 02nei_lkup_states.zip, found at:

<ftp://ftp.epa.gov/EmisInventory/2002finalnei/documentation/point/> .

Table 3-1 summarizes the data elements that were targeted for the inventory request. EIAG requested 2002 facility, unit, process, or stack-specific emissions data. If nonpoint area and mobile source data were available, these were also requested. No limits were set on the type of source categories for which data would be collected. For CAPs, EIAG expected that at a minimum states, local agencies and tribes would comply with the CERR reporting requirements for Type A and Type B sources. For HAPs, it was expected that each agency would have different designations for the sources for which they collect emissions data at the point level (as opposed to treating them as nonpoint area sources); no effort was made to strictly define what would be considered a “major source” in the data collection effort.

The data request portion of the initial data collection effort was essentially completed by June 2004. EIAG needed to establish a date for the receipt of data in order to complete the

remaining tasks to develop the draft of the 2002 NEI. These tasks included processing the data for upload to the NEI format, requesting and processing data from ESD, supplementing with Department of Energy (DOE) and US EPA Clean Air Market Division (CAMD)-derived electric generating unit (EGU) data, supplementing with TRI data if gaps remained, and identifying duplicate facilities between these multiple data sources. Additionally, EPA reviewed and augmented missing, out-of-range, and bad geographic coordinates and stack parameters; and augmented missing particulate matter (PM) emissions. A draft of the 2002 NEI was posted in February 2005 on EPA's FTP site. States, tribes, and local tribal agencies had three months to review the draft and submit revisions. Revisions were due by May 1, 2005.

3.2 Initial Data Received from State, Local, Tribal and Regional Agencies

Table 3-2 lists the 73 agencies (in all 50 states plus the District of Columbia and 10 Tribes) for which point source inventory data were initially obtained in 2004. In addition, to state, local, and tribal submittals one Regional Planning Organization (RPO), the Lake Michigan Air Directors Consortium (LADCO) submitted data for wildfires, prescribed burning, and agricultural burning. In Table 3-2 these fire files are listed under the relevant state. There were no efforts by EIAG to review the inventory estimates for their accuracy or calculate new emission estimates. The goal at this point was to compile whatever state, local, and tribal data were available. Filling data gaps and evaluating the quality of the data are addressed later in this process. Appendix A provides detailed contact information and summary statistics for data submitted by each state, local agency, and tribe.

3.3 Initial Data Received from Trade Associations

One trade association (the American Chemistry Council) submitted data for 4,4'-methylenediphenyl diisocyanate (MDI). These data were not incorporated into the draft, but were incorporated into the final 2002 NEI.

Table 3-1. Data Elements Requested from States, Tribes, and Local Agencies

Emission Level	Data Elements
Site	Facility name
	Physical Address
	Site Latitude and Longitude
	State and County FIPS code, Tribal code
	Facility IDs (local, state, or federal); ORIS Facility ID if EGU
	Standard Industrial Classification (SIC) codes
	North American Industry Classification System (NAICS) codes
Emission Unit	Unit description and IDs (ORIS Boiler ID if EGU)
	Unit design capacity
Emission Process	Process description and IDs
	Source Classification Code (SCC)
	Winter, spring, summer, fall percent throughput
	Heat content, sulfur content, ash content
	MACT code, MACT compliance status
Emission Period	Actual throughput and throughput units
	Process activity during period (e.g., number of hrs process is active during period)
Emission	Pollutant code
	Emissions estimate (e.g., actual emissions in tons per year)
	Start date, end date
	Emission type (e.g., daily, weekend, entire year)
	Emission Estimation Calculation Method (Include emission factor if emission factor is the method)
	Emission Data Quality Rating
	Control Status
	HAPs Emission Performance Level (actual, allowable, potential, maximum)
Emission Release Point	Emission Release Point ID
	Emission release point type (stack vs fugitive)
	Stack height, diameter, exit gas temperature, exit gas velocity, exit gas flow rate
	Location (X and Y coordinates, UTM) and Measurement Accuracy Determination codes
Control Equipment	Control efficiency, capture efficiency
	Device type

Table 3-2. States, Local Areas and Tribes that Provided 2002 Inventory Data in June 2004

State	Agency Name	Inventory Type ^a	Inventory Year
Alabama	Alabama Department of Environmental Management	CRITHAP	2002
Alabama	Jefferson County Board of Health	CRITHAP	2002
Alaska	Alaska Department of Environmental Conservation	CRIT	2002
Arizona	Arizona Department of Environmental Quality	CRITHAP	2002
Arizona	Maricopa County Environmental Services Department	CRIT	2002
Arkansas	Arkansas Department of Environmental Quality	CRITHAP	2002
California	California Air Resources Board	CRIT	2002
California	California Air Resources Board	HAP	2002
Colorado	Colorado Department of Public Health and Environment	CRITHAP	2002
Connecticut	Connecticut Department Bureau of Air Management	CRITLEAD	2001, 2002
Connecticut	New Haven Community Clean Air Initiative	HAP	2002, 1999, 1997
Delaware	Delaware Department of Natural Resources	CRITHAP	2002
District of Columbia	DC Department of Health	CRIT	2002
Florida	Florida Department of Environmental Protection	CRIT	2002
Florida	Florida Department of Environmental Protection	CRITHAP	2002
Georgia	Georgia Department of Natural Resources	CRITLEAD	2002
Hawaii	Hawaii Department of Health, Clean Air Branch	CRITLEAD	2002
Idaho	Idaho Department of Environmental Quality	CRIT	2002
Idaho	Idaho Department of Environmental Quality	CRITHAP	2002
Illinois	Illinois Environmental Protection Agency	CRITHAP	2002
Indiana	Indiana Department of Environmental Management (Fires)	CRIT	2002
Indiana	Indiana Department of Environmental Management	CRITLEAD	2002
Indiana	Indiana Department of Environmental Management	HAP	2002
Iowa	Iowa Department of Natural Resources, Air Quality	CRITHAP	2002
Kansas	Kansas Department of Health and Environment (NH ₃)	CRIT	2002
Kansas	Kansas Department of Health and Environment	CRITHAP	2002
Kentucky	Air Pollution Control District of Jefferson County	CRITHAP	2002
Kentucky	Air Pollution Control District of Jefferson County	HAP	2002
Kentucky	Kentucky Division of Air Quality	CRITHAP	2002
Louisiana	Louisiana Department of Environmental Quality	CRITHAP	2002
Maine	Maine Department of Environmental Protection	CRIT	2002
Maine	Maine Department of Environmental Protection	CRITHAP	2002
Maryland	Maryland Department of Environment	CRITHAP	2002
Massachusetts	Massachusetts Department of Environmental Protection	CRITHAP	2002
Massachusetts	Massachusetts Department of Environmental Protection	HAP	2002
Michigan	Michigan Department of Environmental Quality - Air Quality (Fires)	CRIT	2002
Michigan	Michigan Department of Environmental Quality - Air Quality	CRITHAP	2002
Minnesota	Minnesota Pollution Control Agency	CRIT	2002
Minnesota	Minnesota Pollution Control Agency	HAP	2002
Mississippi	Mississippi Department of Environmental Quality	CRITHAP	2002
Missouri	Missouri Department of Natural Resources, Air Pollution Control Program (NH ₃)	CRIT	2002
Missouri	Missouri Department of Natural Resources, Air Pollution	CRITHAP	2002

State	Agency Name	Inventory Type ^a	Inventory Year
	Control Program		
Montana	Montana Department of Environmental Quality	CRITHAP	2002
Nebraska	City of Omaha Public Works Department	CRITHAP	2002
Nebraska	Lincoln-Lancaster County Health Department	CRITHAP	2002
Nebraska	Washoe County Air Quality Management Division	CRIT	2002
Nebraska	Nebraska Department of Environmental Quality	CRITHAP	2002
Nevada	Clark County Department of Air Quality and Management	CRIT	2002
Nevada	Nevada Bureau of Air Quality	CRIT	2002
New Hampshire	New Hampshire Department of Environmental Services	CRITHAP	2002
New Jersey	New Jersey Department of Environmental Protection	CRIT	2001, 2002
New Jersey	New Jersey Department of Environmental Protection	HAP	1997-2000, 2002
New Mexico	City of Albuquerque	CRITHAP	2002
New Mexico	New Mexico Environmental Department	CRITHAP	2001, 2002, 2003
New York	New York State Department of Environmental Conservation	CRITHAP	2002
North Carolina	Forsyth County Environmental Affairs Department	CRITHAP	2002
North Carolina	Mecklenburg County Air Quality	CRITHAP	2002
North Carolina	North Carolina Department of Air Quality	CRITHAP	2002
North Carolina	Western North Carolina Regional Air Quality Agency (Buncombe County)	CRITHAP	2002
North Dakota	Department of Health	CRIT	2002
Ohio	Dayton, Ohio Regional Air Pollution Control Agency	CRITHAP	2001, 2002
Ohio	Ohio Environmental Protection Agency (Fires)	CRIT	2002
Ohio	Ohio Environmental Protection Agency	CRITLEAD	2002
Ohio	Ohio Environmental Protection Agency	HAP	2002
Oklahoma	Oklahoma Department of Environmental Quality	CRITHAP	2002
Oregon	Lane Regional Air Pollution Authority	CRIT	2002
Oregon	Oregon Department of Environmental Quality	CRITHAP	2002
Oregon	Oregon Department of Environmental Quality	CRITLEAD	2002
Oregon	Oregon Department of Environmental Quality	HAP	2002
Pennsylvania	Alleghany County Health Department	CRITHAP	2001, 2002
Pennsylvania	City of Philadelphia	CRITHAP	2001, 2002
Pennsylvania	Pennsylvania Department of Environmental Protection	CRITHAP	2002
Rhode Island	Rhode Island Department of Environmental Management, Office of the Air Resource	CRITHAP	2002
South Carolina	South Carolina Department of Health and Environmental Control	CRITHAP	2002
South Dakota	South Dakota Department of Environment and Natural Resources	CRIT	2002
Tennessee	Chattanooga Hamilton County Air Pollution Control Bureau	CRITHAP	2002
Tennessee	Knox County Department of Air Quality Management	CRITHAP	2002
Tennessee	Memphis and Shelby County Health Department	CRITHAP	2002
Tennessee	Metro Public Health Dept. Nashville/Davidson County	CRITHAP	2002
Tennessee	Tennessee Department of Environment and Conservation, Air Pollution Control Bureau	CRITHAP	2002
Texas	Texas Commission on Environmental Quality	CRITHAP	2002
Tribal	Coeur d'Alene Tribe	CRITHAP	1998, 2001

State	Agency Name	Inventory Type ^a	Inventory Year
Tribal	Fond du Lac Band of Chippewa Tribe	CRITLEAD	2001
Tribal	Fort Peck Tribe	CRIT	2000
Tribal	Gila River Tribe	CRIT	1997
Tribal	La Posta Tribe	CRIT	1999
Tribal	Santa Ana Tribe	CRIT	1998
Tribal	Salt River	CRIT	1999
Tribal	Laguana	CRIT	1999
Tribal	Umatilla	CRIT	1999
Tribal	Ute Mountain	CRIT	1999
Utah	Utah Division of Air Quality	CRITHAP	2002
Vermont	Vermont Department of Environmental Quality	CRIT	2002
Vermont	Vermont Department of Environmental Quality	HAP	2002
Virginia	Virginia Department of Environmental Quality	CRITHAP	2002
Washington	Olympic Region Clean Air Agency	CRITHAP	2002
Washington	Puget Sound Clean Air Agency	CRITHAP	2002
Washington	Washington State Department of Ecology	CRITHAP	2002
West Virginia	West Virginia Division of Air Quality	CRITHAP	2002
Wisconsin	Wisconsin Department of Natural Resources (Fires)	CRIT	2002
Wisconsin	Wisconsin Department of Natural Resources	CRITHAP	2002
Wyoming	Wyoming Department of Environmental Quality	CRITHAP	2002

^a Inventory Type Code Key:

CRIT - Data submittal contained CAP emissions only.

CRITHAP - Data submittal contained both CAP and HAP emissions.

HAP - Data submittal contained only HAP emissions.

CRITLEAD - Data submittal contained CAP and lead emissions.

3.4 EIAG Requested ESD Maximum Achievable Control Technology Inventory Data and Facility Lists

State, local, and tribal databases represent the core of the point source inventory. Inventory data were also requested from the EPA's ESD for MACT/residual risk source categories. A list of MACT categories and their codes used in the NEI are in the the 2002 State Lookup File, 02nei_lkup_states.zip. While ESD provided mostly HAP data, some MACT categories do include CAP estimates as well.

Data specifically to be used in the 2002 NEI were provided for 19 MACT source categories (Table 3-3). For most MACT and Section 112(k) Area Source Standards categories, facility lists were prepared and these lists were used to assign category codes to state, local, tribal and TRI-based facilities in the NEI. These lists were prepared by ESD engineers based on prior

data collection efforts and their knowledge of the sources in each category. See Appendix B for a complete listing of categories and the source of the facility list for each. While some lists were collected solely for the 2002 efforts, some were based on the 1999 NEI. Table 3-4 lists the facility list flags that appear in Appendix B.

Table 3-3. New MACT Source Categories in the Draft 2002 NEI

MACT Code	MACT/Area Source Category	Year
(Not a MACT category)	Coke Ovens: Byproducts	1999
0303	Coke Ovens: Pushing, Quenching, & Battery Stacks	1999
0302	Coke Ovens: Charging, Top Side, and Door Leaks	1999
0364	Stainless and Nonstainless Steel Manufacturing: Electric Arc Furnaces (EAF) (Mercury emissions only)	2002
0414	Brick and Structural Clay Products Manufacturing	2002
0603	Marine Vessel Loading Operations	1999
0705	Magnetic Tapes (Surface Coating)	1999, 2000, 2001
0801-1	Commercial Hazardous Waste Incinerators	1999
0801-2	On-Site Hazardous Waste Incinerators	1999
0801-3	Cement Kilns	1999
0801-4	Lightweight Aggregate Kilns	1999
1312	Epoxy Resins Production	2002
1322	Non-Nylon Polyamides Production	2002
1609	Commercial Sterilization Facilities	2002
0802	Municipal Landfills	1999
1801	Medical Waste Incinerators	2002
1802	Municipal Waste Combustors	1999
1802-1	Municipal Waste Combustors: Small	1999, 2002
1802-2	Municipal Waste Combustors: Large	1999, 2000
1808-1*	Utility Boilers: Coal	2002

* ESD only provided mercury estimates for Utility Coal Boilers.

Table 3-4. ESD-Supplied MACT Facility List Flags

Facility List Flag	Description
FACILLIST-99NEI	Facility list derived from 1999 NEI
FACILLIST-ESD02	Facility supplied by ESD in 2002
FACILLIST-RTI	Facility list supplied by ESD in 2002

After the draft 2002 NEI was compiled, ESD provided estimates of mercury emissions from electric utilities that were incorporated into the final 2002 NEI. Additional changes to MACT draft data included:

- reapplying MACT codes based on additional facility matching and corrections to MACT default tables;
- assigning new MACT codes to stationary combustion turbines (MACT Code 0108) and internal combustion engines (MACT Code 0105) based on fuel type;
- revising estimates for MACT categories based on ESD comments to the draft NEI;
- incorporating most recent data for mercury emissions from electric arc furnaces;
- incorporating mercury emissions provided by EPA Region Nine for gold mines;
- applying MACT codes and compliance codes to facilities formerly assigned a “MultiMACT” code; and
- applying MACT codes and compliance codes to facilities with newly assigned NAICS codes.

3.5 Supplementing with TRI Data

To assess the NEI for source category and facility coverage, TRI data were used (EPA, 2004b). TRI is a publicly available EPA database that contains information on toxic chemical releases reported annually by certain covered industry groups. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990. The TRI contains both HAP and ammonia

emissions data, and is used in the NEI to supplement reporting of these compounds. The purpose of this TRI review was to determine if the tribal-, local-, state-, and ESD-combined databases (referred to hereafter as the NEI) needed to be supplemented with data for facilities that reported to TRI, but were not included in the NEI submittals. For facilities included in both the NEI and TRI, it was assumed that the NEI data were more accurate and, thus, no revisions were made for those facilities.

The TRI facilities missing from the NEI were identified through a process of elimination. Facilities included in the NEI were matched against TRI-listed facilities using one or more of the following parameters:

- TRI ID;
- County;
- Facility name;
- Facility address; and
- Latitude and longitude coordinates.

TRI data can be identified in the NEI by the “T” data source code in the Emission record. See the the 2002 State Lookup File, 02nei_lkup_states.zip for more information on data source types.

3.6 Supplementing with DOE and CAMD Electric Utility Data

The NEI was also supplemented with data obtained from the DOE’s Energy Information Agency (EIA) (DOE, 2003) and EPA’s CAMD Emission Tracking System/Continuous Emissions Monitoring (ETS/CEM) data (EPA, 2004a) for EGUs. The detailed methodology used to extract, process, and develop emissions estimates from these sources is discussed in the document: “Documentation for the 2002 Electric Generating Unit (EGU) National Emissions

Inventory (NEI)” (EPA, 2004c). These data are included in the NEI along with state, local or tribal agency submitted emissions data for EGU sources. See Section 3.9 for a detailed discussion on how DOE and CAMD data were merged with state, local, and tribal agency data.

After the draft 2002 NEI was released, EGU stack parameters were revised.

3.7 Processing State, Local, and Tribal Agency, MACT, and Industry Data Sets

All data sets provided to EIAG were first formatted to be consistent with each other and the NEI Input Format (NIF). Several processing and screening steps were initially performed on each of the state, local, tribal, ESD, TRI, and EGU databases as they were received. These steps included:

- Logging each file as received and recording summary statistics on the file;
- Converting the files to NIF 3.0;
- Setting primary keys on each table;
- Removing duplicate records;
- Screening for records that contain CAPs, ammonia, or HAPs on the CAA list of 188;
- Correcting XY coordinate type;
- Adding state abbreviation based on FIPS code;
- Verifying/correcting control status;
- Correcting referential integrity violations;
- Checking/correcting miscellaneous data codes such as emission release point type, emission type, and emission unit numerator; and
- Conducting quality control (QC) on latitudes/longitudes and stack parameters and defaulting missing or bad data.

3.8 Distribution of Quality Control Reports

EPA created four QC reports which it distributed to states, tribes, and local agencies after the initial receipt and processing of the data submittals and during its internal review period. During this period, EPA also augmented some data elements. The QC reports were intended to give states, tribes, and local agencies a chance to review augmented data, correct errors, and provide comments on EPA's QC process. The four QC reports are as follows:

- 1) Data QC Report - summarizes structural problems with the data, e.g., data errors, incorrect codes, data integrity issues, etc;
- 2) Latitude/Longitude QC Report - lists latitude/longitudes that failed QC review and provides EPA defaulted coordinates;
- 3) Stack Parameters QC Report - lists stack parameters that failed QC review and provides EPA defaulted parameters; and
- 4) Content QC Report - compares 2002 data to 1999 data, highlights potential outliers, missing facilities, and missing pollutants.

The detailed QC and augmentation procedures used to generate QC reports 2, 3, and 4 are given in EPA's *NEI Quality Assurance and Data Augmentation for Point Sources* (U.S. EPA, 2006).

After reports 1, 2, and 3 were issued, reviewers were asked to submit comments and changes. EPA reviewed these comments and incorporated them into the draft 2002 Point Source NEI whenever possible. If EPA disagreed with a proposed change or needed more information, the revision was not processed for the draft, but it may have been incorporated into the final 2002 NEI. Report #4 was distributed in December, 2004, and the contents of this report were meant to help state, local, and tribal agencies review their data and submit additional revisions by May 1, 2005. Revisions submitted by states, local agencies, and tribes during this final review period are summarized in Table 3-5. EPA processed revisions received from states, local agencies and

tribes and then conducted additional QA to identify remaining outliers. EPA corrected these outliers with assistance from state, local agencies and tribes to produce the final 2002 NEI.

The *Documentation for the Draft 2002 Point Source National Emissions Inventory* (U.S. EPA, 2005b) contains samples from each of these reports described above as well as a summary table of which state, local and tribal agencies supplied comments on reports 1, 2 and 3. It also contains the very detailed data QC reports generated for each state, local agency and tribal original data submittal.

Table 3-5. States and Local Areas and Tribes that Provided Revisions to the 2002 NEI

State	Agency Name	Inventory Type ^a	Revisions	New Submittal
Alabama	Alabama Department of Environmental Management	CRITHAP	x	
Alaska	Alaska Department of Environmental Conservation	CRIT	x	
Arizona	Arizona Department of Environmental Quality	CRITHAP	x	
Arizona	Maricopa County Environmental Services Department	CRIT	x	
Arizona	Pinal County Air Quality Department	CRIT	x	
Arkansas	Arkansas Department of Environmental Quality	CRITHAP	x	
California	California Air Resources Board	CRIT	x	
Connecticut	Connecticut Department Bureau of Air Management	CRIT	x	
Delaware	Delaware Department of Natural Resources	CRITHAP	x	
Florida	Florida Department of Environmental Protection	CRITHAP	x	
Florida	Pinellas County Air Quality Division	HAP	x	
Georgia	Georgia Department of Natural Resources	CRITLEAD	x	
Idaho	Idaho Department of Environmental Quality	CRITHAP	x	
Illinois	Illinois Environmental Protection Agency	CRIT	x	
Indiana	Indiana Department of Environmental Management	HAP	x	
Iowa	Iowa Department of Natural Resources, Air Quality	CRIT	x	
Kansas	Kansas Department of Health and Environment	CRITHAP	x	
Kentucky	Kentucky Division of Air Quality	CRIT	x	
Maine	Maine Department of Environmental Protection	CRITHAP	x	
Michigan	Michigan Department of Environmental Quality - Air Quality	HAP	x	
Minnesota	Minnesota Pollution Control Agency	CRITHAP	x	
Missouri	Missouri Department of Natural Resources, Air Pollution Control Program	CRITHAP	x	
New Jersey	New Jersey Department of Environmental Protection	CRITHAP	x	

State	Agency Name	Inventory Type ^a	Revisions	New Submittal
New Mexico	City of Albuquerque	CRITHAP	x	
New Mexico	New Mexico Environmental Department	CRITHAP	x	
North Carolina	North Carolina Department of Air Quality	CRITHAP	x	
North Carolina	Mecklenburg County Air Quality	HAP	x	
North Carolina	Western North Carolina Regional Air Quality Agency	HAP	x	
Ohio	Dayton, Ohio Regional Air Pollution Control Agency	CRITHAP	x	
Ohio	Ohio Environmental Protection Agency	HAP, CRITLEAD	x	
Oregon	Oregon Department of Environmental Quality	CRITHAP	x	
Pennsylvania	Alleghany County Health Department	CRITHAP	x	
Pennsylvania	Pennsylvania Department of Environmental Protection	CRITHAP	x	
Rhode Island	Rhode Island Department of Environmental Management, Office of the Air Resource	CRIT	x	
South Carolina	South Carolina Department of Health and Environmental Control	CRITHAP	x	
Tribal	Fort Mojave Indian Tribe of Arizona, California & Nevada	CRIT		x
Tribal	Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona	CRITHAP		x
Tribal	Shoshone-Bannock Tribes of the Fort Hall Reservation of Idaho	CRIT		x
Tribal	Cabazon Band of Cahuilla Mission Indians of the Cabazon Reservation, California	CRIT		x
Tribal	Penobscot Tribe of Maine	CRITHAP		x
Tribal	Leech Lake Band of Ojibwe	CRIT		x
Tribal	Fort Peck Tribe	CRIT	x	
Utah	Utah Division of Air Quality	CRIT	x	
Virginia	Virginia Department of Environmental Quality	CRIT	x	
Washington	Washington State Department of Ecology	CRIT	x	
West Virginia	West Virginia Division of Air Quality	HAP	x	
Wisconsin	Wisconsin Department of Natural Resources	CRIT	x	
Wyoming	Wyoming Department of Environmental Quality	CRITHAP	x	

In addition to these revisions and submittals that were included in the final 2002 NEI, the following state agencies and tribes submitted data after the deadline that were not incorporated into the final 2002 NEI: Tennessee Department of Environment and Conservation, Air Pollution Control Bureau and Wind River Arapahoe, Tohono O'Odham, and Yakama Nation Tribes

a) Inventory Type Code Key: CRIT –CAPs, CRITHAP –HAPs and CAPs, HAP – HAPs, CRITLEAD – CAP and lead

3.9 Blend-Merging (aka Data Selection)

Because the NEI is composed of databases submitted from multiple sources, there can be overlapping estimates from one or more of these sources. The NEI blend-merge or data selection process attempts to eliminate duplicates. It is important to note, however, that during the

preparation of the draft NEI that no estimate was actually deleted from EPA’s “master” inventory. Estimates deemed as duplicative were simply “unselected” and thus did not appear in any output or summary files. This method allowed EPA to track competing estimates, and refine its merging or data selection routine for the final 2002 NEI using different rules of selection. The original data selection routine is described in the documentation for the draft 2002 NEI (EPA, 2005b). The modified routine used in the preparation of the final 2002 NEI is described below.

Prior to any blend-merging, EPA must first match the facilities from the multiple data sources and assign common IDs to facilities found in one or more dataset. In preparation for the compilation of the integrated 2002 NEI, EIAG created a crosswalk of NEI HAP and CAP facilities from the 1999 NEI. EIAG built this crosswalk by first matching HAP and CAP facilities to one another and assigning unique identifiers to every facility in this crosswalk—the NEI Unique Facility ID. Facilities found in both the HAP and CAP inventories should share the same NEI Unique Facility ID. It is important to note that data providers sometimes use different Site IDs for their CAP and HAP inventories. In the NEI, these different Site IDs are retained; the common NEI Unique Facility ID indicates that sites are at the same facility. When state, local and tribal data submittals were received in June 2004, EPA compared facilities from these submittals to the crosswalk. When there was a name or local identifier match between the new data set and the crosswalk, EPA verified that other information such as state, county, address, zip code, TRI ID (or other type of ID), and latitude/longitude coordinates were identical. If so, both of the sites received the corresponding NEI Unique Facility ID. Facilities not found in the crosswalk were assigned a new NEI Unique Facility ID. More details on the NEI facility matching process can be found in Pope et al., 2004. After NEI Unique Facility IDs were assigned, data selection took place.

The data selection routine conducts two selection passes at the following grouping levels:

- Facility (NEI Unique Facility ID), pollutant code, data source (ranked)
- Facility (NEI Unique Facility ID), HAP category (ranked), data source (ranked)

First Selection Pass

In the first selection pass, which is performed only for HAP emission estimates for the matched facilities, the selection routine looks at state (S), local (L), tribal (B), TRI (T), ESD (M or P), Industrial (PI), EGU (CAMD and 767/CAMD*) data except for mercury data and ranks the estimates. The highest ranked estimate is selected from among the duplicates in the specified grouping.

The ranking of the data sources from highest to lowest is as follows.¹

Code	Rank	Definition
P	1	“Preferred” MACT
PI	2	“Preferred” Industrial
B	3	Tribal Data
L	4	Local Agency Data
S	5	State Data
C-01-F	6	1999 state-provided Wyoming PM and NO _x data
CAMD	7	Unit is only in 2002 ETS/CEM
767/CAMD	7	Unit is in 2002 ETS/CEM and 2002 Form EIA-767
767/CAMD1	7	Combined Cycle (heat recovery steam generator + combustion turbine)
767/CAMD2	7	Combined Cycle (steam turbine + combustion turbine)
M	8	MACT Data
T	8	TRI Data

¹ Additional data source codes for NO_x and SO₂ and Hg emissions from EGUs are presented in Table 3-6.

MACT categories given the highest ranking (“P” codes) include: Small and Large Municipal Waste Combustors (MWCs), Medical Waste Incinerators, Brick and Structural Clay Products Manufacturing, Electric Arc Furnaces (mercury only), and Coke Ovens. These data were supplied by ESD engineers and are preferred because they are based on extensive source test data, and/or a very complete inventory for the category.

The results of both passes are evaluated, and a final selection decision is made. Two passes are necessary, because if the selection is confined to specific pollutant codes or CAS numbers, then pollutants with different pollutant codes, where one is reported by CAS number and the other by HAP category, could be retained and result in double counting. For example, pollutant code 195 (lead and compounds) will not appear to duplicate pollutant code 7439921 (lead), and both pollutants will get through the pollutant-specific selection pass.

Second Selection Pass

The second selection pass, therefore, looks for duplicative HAPs at the category level at a facility, so that only one pollutant in a group is selected. Both pollutant specific and HAP category selection passes are necessary, since the HAP category pass would deselect specific pollutants in the same HAP category (e.g., chromium III vs. chromium VI).

Criteria pollutants are handled on a category basis only and therefore only the second selection pass is conducted on CAPs. Specifically, there are many fractions of PM (PM-PRI, PM-FIL, PM-CON, PM2.5-PRI, etc.) and for this selection process they are all categorized as PM. This approach was taken to avoid blending PM data from different sources (because of the relationship among the PM fractions).

It is important to note that data selection passes described above were not conducted on SO₂ and NO_x emissions from EGUs monitored by CAMD, or mercury emissions for coal-fired units developed by EPA. However, EPA conducted selection passes one and two on non-mercury HAPs and selection pass two on all other criteria pollutants at these units. The handling of SO₂, NO_x and mercury data is discussed below.

Special Treatment of EGUs

As discussed in Section 3.6, the NEI was also supplemented with data obtained from the EPA's CAMD ETS/CEM (EPA, 2004a) for EGUs.

The ETS/CEM data files contain heat input and NO_x and SO₂ emissions data that are generally based on monitoring data. EPA requires that all coal units have continuous emission monitors (CEMs) to report hourly data. Oil and gas units in general may, but are not required to, have CEMs. For additional information about EPA's requirements, see <http://www.epa.gov/airmarket/monitoring/factsheet.html>.

Because the NO_x and SO₂ ETS/CEM emissions data are deemed "preferred" by EPA, data for these units were given priority in the 2002 NEI. The first step in combining the CAMD NO_x and SO₂ EGU emission data was to match the facilities from the multiple data sources and assign a common ID—the NEI Unique Facility ID (strNTISiteID in tblPointSI). The data provider's local Site IDs (strStateFacilityIdentifier in tblPointSI) and emission release point records were retained.

After verifying that the facilities were mapped correctly, the CAMD units were mapped to the reported state, local, or tribal units. Units were mapped based on their SCC and reported emissions. Matches were not always 1:1. In some cases, one CAMD-reported unit was mapped to multiple state-reported units, and vice versa. In matching cases, the CAMD ETS/CEM NO_x and SO₂ emissions data replaced the reported state, local, and tribal NO_x and SO₂ emissions. Again, the data provider's Unit IDs and emission release point records were retained. Thus, the CAMD NO_x and SO₂ unit-level emissions records are linked to the data provider's process, control equipment, and emission release point records.

In a few cases, the state, local or tribal agency did not have an existing SO₂ or NO_x record at the matching unit. In those cases, new emissions records with ETS values were added to the agency's data. Again, these new records have the data provider's IDs.

In addition to merging SO₂ and NO_x from CAMD with state, local, and tribal data, EPA updated the mercury estimates for most of the coal-fired EGUs as well. Emission estimates for particulate divalent mercury, elemental gaseous mercury, and gaseous divalent mercury were

developed by EPA for coal-fired electric utility steam-generating units. The approach used to develop the estimates was to update an emissions model that was originally developed to determine the nationwide 1999 mercury estimates for all coal-fired electric utility steam-generating units.

The 1999 emissions model was updated based on EIA Form 767 information primarily for unit operating status changes, fuel type and amount burned, fuel moisture content, and air pollution control configuration (U.S. DOE, 2003).

Although one goal of these merging exercises was to maintain the data provider's IDs as the key identifiers in the inventory (while updating the estimates to match EPA's databases), EPA also stored two of its important identifiers in alternate fields in the inventory - the ORIS Facility Code and ORIS Boiler ID. DOE assigns its own facility ID - the Office of Regulatory Information Systems (ORIS) Plant ID - to plants with EGUs. This ID was transferred to the strORISFacilityCode in the tblPointSI. DOE also maintains a unit level ID - the ORIS Boiler ID - and this ID is stored in the strORISBoiler ID field in tblPointEU.

The source of the SO₂, NO_x and mercury estimates for the EGUs in the NEI can be determined by consulting the data source field in tblPointEM. Table 3-6 presents a list of these data sources along with a brief description of what they mean.

3.10 Particulate Matter Augmentation

In developing the NEI, the EPA requires that particulate matter (PM10-PRI, PM10-FIL, PM2.5-PRI, PM2.5-FIL, and PM-CON) be submitted by state, local, and tribal agencies. However, sometimes fewer PM terms are submitted. Therefore, the PM data need to be augmented to achieve the required PM terms. For the draft NEI, EPA augmented PM data when values could be filled in directly using the provided PM terms. In the final 2002 NEI, EPA augmented all missing PM terms. All augmented or revised PM estimates are flagged with a data source code of "A" or "A-R." The data source code of "A" indicates an augmented PM

Table 3-6. Data Source Code and Description for NO_x, SO₂, and Hg Emissions at EGUs

Data Source	Description
BCAMD1	Data were received from the tribal agency. Emissions at the tribal agency's units were replaced with NO _x and SO ₂ emission values from ETS. Tribal unit identifiers were retained.
CAMD1	Data were not received from the state, local agency, or tribal agency. NO _x and SO ₂ emission values are from ETS.
LCAMD1	Data were received from the local agency. Emissions at the local agency's units were replaced with NO _x and SO ₂ emission values from ETS. Local unit identifiers were retained.
LCAMD3	Data were received from the local agency. The local agency's NO _x and SO ₂ values were retained; the ETS values for the unit were zeroes.
SCAMD1	Data were received from the state agency. Emissions at the state agency's units were replaced with NO _x and SO ₂ emission values from ETS. State unit identifiers were retained.
SCAMD2	The state did not provide NO _x and/or SO ₂ for its EGUs. NO _x and/or SO ₂ records were created for these units using ETS values. State unit identifiers were retained.
SCAMD3	Data were received from the state agency. The state agency's NO _x and SO ₂ values were retained; the ETS values for the unit were zeroes.
SCAMD4	Data were received from the state. Because it was not clear which of the state's units matched the ETS unit(s), the state values were retained. State and ETS values were approximately equal.
PCAMDHG	No Hg data were received from the state for the coal-fired unit. Records for three Hg species (elemental gaseous, gaseous divalent, particulate divalent) were created for the unit.
PLHG	Hg data were received from the local agency for the coal-fired unit. The local agency's total Hg was replaced with records for three Hg species (elemental gaseous, gaseous divalent, particulate divalent). Local unit identifiers were retained.
PSHG	Hg data were received from the state agency for the coal-fired unit. The state agency's total Hg was replaced with records for three Hg species (elemental gaseous, gaseous divalent, particulate divalent). State unit identifiers were retained.

record, while the code “A-R” indicates an existing PM record was first revised to make it consistent with the remaining PM fractions prior to PM Augmentation. Details on PM augmentation are described in the document, *NEI Quality Assurance and Data Augmentation for Point Sources* (U.S. EPA, 2006).

In December 2005, PM was additionally augmented for a number of point sources. Details on the additional augmentation of PM can be found on the CHIEF web site.

3.11 Boiler Augmentation

As industrial boilers have been generally undercounted in the NEI for HAPs, EPA augmented HAP emissions for boilers in the final 2002 NEI. EPA created these augments by comparing the HAP inventory to the CAP inventory and isolating facility/process combinations with industrial boiler SCCs in the CAP inventory, but not in the HAP inventory. Next, activity data for these industrial boilers were derived from the carbon monoxide (CO) records. Finally, HAP records were created by cloning the CAP site, unit, process, etc. identifiers and multiplying the HAP emissions factors by the derived activity data to obtain the estimate. Industrial boiler HAP emissions factors were obtained from ESD. Augmented boiler estimates are flagged with a data source code of “A-B” (augmented boiler).

3.12 Chromium Augmentation

EPA augmented HAP data with chromium estimates in those cases where the state, tribe, or local agency provided a record for total chromium and either chromium (III) or chromium (VI). EPA created the augment by subtracting the supplied chromium species from the total chromium:

$$\text{Chromium (III)} = \text{Total Chromium} - \text{Chromium (VI)}$$
$$\text{Chromium (VI)} = \text{Total Chromium} - \text{Chromium (III)}$$

After the augmented chromium was added to the inventory, the total chromium record was deleted to avoid double-counting. If chromium VI emissions were greater than total chromium emissions or chromium III emissions were greater than total chromium emissions, then total chromium emissions were deleted and chromium III emissions were not generated. If chromium III emissions were greater than total chromium emissions, then total chromium emissions were deleted and chromium VI emissions were not generated. Augmented chromium estimates are flagged with a data source of “A-C” (augmented chromium).

4.0 COMPILING THE INVENTORY DATA INTO THE NEI DATABASE

4.1 NIF 3.0 and EPA's Data Standards

One of the goals of compiling the NEI was to process all the state, local, and tribal agency, ESD-supplied, TRI, and EGU inventory data into a common structure with consistently defined data fields. A common data structure will help end users define standardized approaches to reviewing and using the data. The NEI Input Format (NIF) version 3.0 as designed by EPA allows for a variety of data transfer mechanisms to be used and is flexible enough to be supported by many different database programs. More detailed information about the NIF can be found at <http://www.epa.gov/ttn/chief/nif/index.html>.

The NIF 3.0 format conforms with the EPA's data standards for environmental information collection and exchange. The data standards were developed by Environmental Data Standards Council (EDSC)- sponsored action teams that include members representing states, tribes, and federal agencies. All of these standards have been implemented in the 2002 NEI, as described below.

4.1.1 SIC/NAICS Data Standard

This standard includes ways to classify business activities, including industry classifications, product classifications, and product codes. The Standard Industrial Classification (SIC) System has been used for many years to provide a code system for the identification of business activities. SIC codes are gradually being replaced by the North American Industry Classification System (NAICS) codes that were adopted by Canada, Mexico, and the United States in 1997.

To populate the NAICS code field, a crosswalk of SIC codes to NAICS codes was developed. Several different parties have already developed crosswalks. The maps that have been built to date were evaluated to come up with a preferred scheme for the NEI. Where there

was a one-to-one correspondence between NAICS and SIC codes, the assignment was straightforward. However, in those cases in which one SIC maps to many NAICS codes, the SIC code was mapped to a less specific NAICS code (i.e., a 2, 3, or 4 digit code). For more information as to how EIAG reviewed and defaulted this standard, see the *NEI Quality Assurance and Data Augmentation for Point Sources* (U.S. EPA, 2006).

4.1.2 Latitude/Longitude Data Standard

The latitude/longitude standard consists of the group of data elements used for recording horizontal and vertical coordinates and associated metadata that define a point on earth. This standard will help users gauge the accuracy and reliability of a given set of coordinates. The primary responsibility for populating these fields lies with the data submitter, as it is difficult if not impossible to discern the origin of a latitude/longitude without being the primary author of the data. EIAG was able to populate these fields whenever latitude/longitudes were obtained from the TeleAtlas Geocoding EZ Locator Service (<http://geocode.com>). For more information as to how EIAG reviewed and defaulted this standard, see the *NEI Quality Assurance and Data Augmentation for Point Sources* (U.S. EPA, 2006).

4.1.3 Chemical Identification Data Standard

The Chemical Identification Data Standard provides for the use of common identifiers throughout the EPA for all chemical substances regulated or monitored by EPA environmental programs. This standard provides unique, unambiguous, chemically correct common names for all chemicals substances and groupings in EPA's system, and will facilitate automated searches for chemical substances across EPA programs and their databases. EIAG has posted a Chemical Identification pollutant code lookup table that addresses this standard.

4.1.4 Facility Identification Data Standard

The facility identification data standard consists of core data elements that properly identify the location, the affiliated organizations, individual business activities, and the environmental interest of a facility site. To implement this standard, EIAG mapped the NEI facilities to the FRS (Federal Registry System) ID maintained by OEI. The FRS ID is found in the NOF files in the strFacilityRegistryIdentifier field and in the 2002 NEI Facility File.

4.1.5 Contact Standards

The contact standards provide a consistent method of describing the contact person submitting data to the NEI. These standards include point of contact, address, and communication information. All of these elements are found in the Transmittal table in the NIF structure.

4.2 NOF 3.0 and Data Standards

EPA distributes data in the NEI Output Format (NOF) version 3.0. NOF contains the data standards listed above as well as other data elements that help users understand the origin of the data. For more information on the NOF data fields, see the *NEI Quality Assurance and Data Augmentation for Point Sources* (U.S. EPA, 2006).

5.0 FUTURE UPDATES TO THE 2002 NEI

The Historical Emissions Table contains the current 2002 NEI emissions values by Facility ID and Pollutant code. This table contains emissions values from the original June 2004 submittals, February 2005 draft, and February 2006 final version. When two or more emissions values were available for the same pollutant/facility in the draft, one value was chosen. The "non-selected" values are presented in the table alongside the "selected" or reported values.

This table will be used to track future revisions to 2002 NEI point source data.

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Appendix A

State, Local, and Tribal Database Summary Tables **for the Draft 2002 Point Source NEI**

Table A-1. State, Local, and Tribal Agency Contacts

<u>State</u>	<u>Agency Name</u>	<u>Source Type</u>	<u>Contact Name</u>	<u>Contact E-Mail Address</u>
<u>Alabama</u>	<u>Alabama Department of Environmental Management</u>	<u>Point</u>	<u>Lisa B. Cole</u>	<u>lbcole@adem.state.al.us</u>
<u>Alabama</u>	<u>Jefferson County Board of Health</u>	<u>Point</u>	<u>James E Wright</u>	<u>ed.wright@jcdh.org</u>
<u>Alaska</u>	<u>Alaska Department of Environmental Conservation</u>	<u>Point</u>	<u>Alice Edwards</u>	<u>alice_edwards@dec.state.ak.us</u>
<u>Arizona</u>	<u>Arizona Department of Environmental Quality</u>	<u>Point</u>	<u>Latha Toopal</u>	<u>toopal.latha@ev.state.az.us</u>
<u>Arizona</u>	<u>Maricopa County Environmental Services Department</u>	<u>Point</u>	<u>Bob Downing</u>	<u>bdowning@mail.maricopa.gov</u>
<u>Arkansas</u>	<u>Arkansas Department of Environmental Quality</u>	<u>Point</u>	<u>Evelyn M. Withers</u>	<u>withers@adeq.state.ar.us</u>
<u>California</u>	<u>California Air Resources Board</u>	<u>Point</u>	<u>Andrew A. Alexis</u>	<u>aalexis@arb.ca.gov</u>
<u>Colorado</u>	<u>Colorado Department of Public Health and Environment</u>	<u>Point</u>	<u>David M. Thayer</u>	<u>david.thayer@state.co.us</u>
<u>Connecticut</u>	<u>Connecticut Department Bureau of Air Management</u>	<u>Point</u>	<u>William Simpson</u>	<u>william.simpson@po.state.ct.us</u>
<u>Connecticut</u>	<u>New Haven Community Clean Air Initiative</u>	<u>Point</u>	<u>Madeleine Weil</u>	<u>lMWeil@Newhavenct.net</u>
<u>Delaware</u>	<u>Delaware Department of Natural Resources</u>	<u>Point</u>	<u>John Outten</u>	<u>John.Outten@state.de.us</u>
<u>District of Columbia</u>	<u>DC Department of Health</u>	<u>Point</u>	<u>Deirdre Elvis-Peterson</u>	<u>deirdre.elvis@dc.gov</u>
<u>Florida</u>	<u>Florida Department of Environmental Protection</u>	<u>Point</u>	<u>Yi Zhu</u>	<u>yi.zhu@dep.state.fl.us</u>
<u>Georgia</u>	<u>Georgia Department of Natural Resources</u>	<u>Point</u>	<u>Scott Southwick</u>	<u>scott_southwick@dnr.state.ga.us</u>
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<u>Idaho</u>	<u>Idaho Department of Environmental Quality</u>	<u>Point</u>	<u>Gary Reinbold</u>	<u>greinbol@deq.state.id.us</u>
<u>Illinois</u>	<u>Illinois Environmental Protection Agency</u>	<u>Point</u>	<u>Buzz Asselmeier</u>	<u>buzz.asselmeier@epa.state.il.us</u>
<u>Indiana</u>	<u>Indiana Department of Environmental Management</u>	<u>Point</u>	<u>Jon Bates</u>	<u>jbates@dem.state.in.us</u>
<u>Iowa</u>	<u>Iowa Department of Natural Resources, Air Quality</u>	<u>Point</u>	<u>Marnie Stein</u>	<u>marnie.stein@dnr.state.ia.us</u>
<u>Kansas</u>	<u>Kansas Department of Health and Environment</u>	<u>Point</u>	<u>Andy Hawkins</u>	<u>ahawkins@kdhe.state.ks.us</u>
<u>Kentucky</u>	<u>Air Pollution Control District of Jefferson County</u>	<u>Point</u>	<u>Paul Lanka</u>	<u>paul.lanka@loukymetro.org</u>
<u>Kentucky</u>	<u>Kentucky Division of Air Quality</u>	<u>Point</u>	<u>Debra Smith</u>	<u>debra.smith@ky.gov</u>
<u>Louisiana</u>	<u>Louisiana Department of Environmental Quality</u>	<u>Point</u>	<u>Linda Brown</u>	<u>linda.brown@la.gov</u>

<u>Maine</u>	<u>Maine Department of Environmental Protection</u>	<u>Point</u>	<u>Richard T. Greves</u>	<u>rich.greves@state.me.us</u>
<u>Maryland</u>	<u>Maryland Department of Environment</u>	<u>Point</u>	<u>Roger Thunell</u>	<u>rthunell@mde.state.md.us</u>
<u>Massachusetts</u>	<u>Massachusetts Department of Environmental Protection</u>	<u>Point</u>	<u>Robert A. Boiselle</u>	<u>Robert.Boiselle@state.ma.us</u>
<u>Michigan</u>	<u>Michigan Department of Environmental Quality - Air Quality</u>	<u>Point</u>	<u>Alan Ostrander</u>	<u>ostranda@state.mi.us</u>
<u>Minnesota</u>	<u>Minnesota Pollution Control Agency</u>	<u>Point</u>	<u>Chun Yi Wu</u>	<u>chun.yi.wu@pca.state.mn.us</u>
<u>Mississippi</u>	<u>Mississippi Department of Environmental Quality</u>	<u>Point</u>	<u>Susan L. Holden</u>	<u>Susan_Holden@deq.state.ms.us</u>
<u>Missouri</u>	<u>Missouri Department of Natural Resources, Air Pollution Control Program</u>	<u>Point</u>	<u>Patricia A. Tighe</u>	<u>patricia.tighe@dnr.mo.gov</u>
<u>Montana</u>	<u>Montana Department of Environmental Quality</u>	<u>Point</u>	<u>Debbie Linkenbach</u>	<u>dlinkenbach@state.mt.us</u>
<u>Nebraska</u>	<u>City of Omaha Public Works Department</u>	<u>Point</u>	<u>Tim E. Burns</u>	<u>tburns@ci.omaha.ne.us</u>
<u>Nebraska</u>	<u>Lincoln-Lancaster County Health Department</u>	<u>Point</u>	<u>Charles Riley</u>	<u>criley@ci.lincoln.ne.us</u>
<u>Nebraska</u>	<u>Nebraska Department of Environmental Quality</u>	<u>Point</u>	<u>Dennis Burling</u>	<u>deqnode@ndeq.state.ne.us</u>
<u>Nevada</u>	<u>Clark County Department of Air Quality and Management</u>	<u>Point</u>	<u>Mike Uhl</u>	<u>UHL@co.clark.nv.us</u>
<u>Nevada</u>	<u>Nevada Bureau of Air Quality</u>	<u>Point</u>	<u>Lori Campbell</u>	<u>loric@ndep.state.nv.us</u>
<u>Nevada</u>	<u>Washoe County Air Quality Management Division</u>	<u>Point</u>	<u>Yann Ling</u>	<u>yling@mail.co.washoe.nv.us</u>
<u>New Hampshire</u>	<u>New Hampshire Department of Environmental Services</u>	<u>Point</u>	<u>Newton H. Strickland</u>	<u>sstrickland@des.state.nh.us</u>
<u>New Jersey</u>	<u>New Jersey Department of Environmental Protection</u>	<u>Point</u>	<u>Brad Bollen</u>	<u>brad.bollen@dep.state.nj.us</u>
<u>New Mexico</u>	<u>City of Albuquerque</u>	<u>Point</u>	<u>Stephanie Summers</u>	<u>ssummers@cabq.gov</u>
<u>New Mexico</u>	<u>New Mexico Environmental Department</u>	<u>Point</u>	<u>Heather Lancour</u>	<u>heather_lancour@nmenv.state.nm.us</u>
<u>New York</u>	<u>New York State Department of Environmental Conservation</u>	<u>Point</u>	<u>Syed Alam</u>	<u>snalam@gw.dec.state.ny.us</u>
<u>North Carolina</u>	<u>Forsyth County Environmental Affairs Department</u>	<u>Point</u>	<u>Steven K. Lyda</u>	<u>lydask@co.forsyth.nc.us</u>
<u>North Carolina</u>	<u>Mecklenburg County Air Quality</u>	<u>Point</u>	<u>S. David Ross</u>	<u>RossSD@Co.Mecklenburg.NC.US</u>
<u>North Carolina</u>	<u>North Carolina Department of Air Quality</u>	<u>Point</u>	<u>Carol Walker</u>	<u>carol.walker@ncmail.net</u>
<u>North Carolina</u>	<u>Western North Carolina Regional Air Quality Agency - Buncombe County</u>	<u>Point</u>	<u>Ashley J. Featherstone, Sr.</u>	<u>ashley.featherstone@buncombecounty.org</u>
<u>North Dakota</u>	<u>Department of Health</u>	<u>Point</u>	<u>Jeff Hansen</u>	<u>jhansen@state.nd.us</u>
<u>Ohio</u>	<u>Dayton, Ohio Regional Air Pollution Control Agency</u>	<u>Point</u>	<u>Andrew Roth</u>	<u>rothaj@rapca.org</u>
<u>Ohio</u>	<u>Ohio Environmental Protection Agency</u>	<u>Point</u>	<u>Tom Velalis</u>	<u>tom.velalis@epa.state.oh.us</u>

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<u>Oregon</u>	<u>Oregon Department of Environmental Quality</u>	<u>Point</u>	<u>Brian K. Fields</u>	<u>fields.brian@deq.state.or.us</u>
<u>Pennsylvania</u>	<u>Alleghany County Health Department</u>	<u>Point</u>	<u>Gary Fischman</u>	<u>gfischman@achd.net</u>
<u>Pennsylvania</u>	<u>City of Philadelphia</u>	<u>Point</u>	<u>Hallie Weiss</u>	<u>hallie.weiss@phila.gov</u>
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<u>Rhode Island</u>	<u>Rhode Island Department of Environmental Management, Office of the Air Resource</u>	<u>Point</u>	<u>Karen Slattery</u>	<u>karen.slattery@dem.ri.gov</u>
<u>South Carolina</u>	<u>South Carolina Department of Health and Environmental Control</u>	<u>Point</u>	<u>Christopher Cheatham</u>	<u>cheathcc@dhec.sc.gov</u>
<u>South Dakota</u>	<u>South Dakota Department of Environment and Natural Resources</u>	<u>Point</u>	<u>Jason Knapp</u>	<u>jason.knapp@state.sd.us</u>
<u>Tennessee</u>	<u>Chattanooga Hamilton County Air Pollution Control Bureau</u>	<u>Point</u>	<u>Doug Erwin</u>	<u>erwin_doug@mail.chattanooga.gov</u>
<u>Tennessee</u>	<u>Knox County Department of Air Quality Management</u>	<u>Point</u>	<u>Daniel Onks</u>	<u>dwonks@aqm.co.knox.tn.us</u>
<u>Tennessee</u>	<u>Memphis and Shelby County Health Department</u>	<u>Point</u>	<u>Christopher Boyd</u>	<u>cboydengrbmschd@yahoo.com</u>
<u>Tennessee</u>	<u>Metro Public Health Dept. Nashville/Davidson County</u>	<u>Point</u>	<u>Laura Artates</u>	<u>laura.artates@nashville.gov</u>
<u>Tennessee</u>	<u>Tennessee Department of Enviroment and Conservation, Air Pollution Control Bureau</u>	<u>Point</u>	<u>James Redus</u>	<u>ron.redus@state.tn.us</u>
<u>Texas</u>	<u>Texas Commission on Environmental Quality</u>	<u>Point</u>	<u>Paul Brochi</u>	<u>pbrochi@tceq.state.tx.us</u>
<u>Tribal</u>	<u>Coeur d'Alene Tribe</u>	<u>Point</u>	<u>Sarah Kelly</u>	<u>sarah.kelly@nau.edu</u> <u>angelique.ludeker@nau.edu</u>
<u>Tribal</u>	<u>Fond du Lac Band of Chippewa Tribe</u>	<u>Point</u>	<u>Angelique Ludeker</u>	
<u>Tribal</u>	<u>Fort Peck Tribe</u>	<u>Point</u>	<u>Angelique Luedeker</u>	
<u>Tribal</u>	<u>Gila River Tribe</u>	<u>Point</u>	<u>Sarah Kelly</u>	
<u>Tribal</u>	<u>La Posta Tribe</u>	<u>Point</u>	<u>Angelique Luedeker</u>	
<u>Tribal</u>	<u>Santa Ana Tribe</u>	<u>Point</u>	<u>Sarah Kelly</u>	
<u>Utah</u>	<u>Utah Division of Air Quality</u>	<u>Point</u>	<u>Scott D. Hanks</u>	<u>shanks@deq.state.ut.us</u>
<u>Vermont</u>	<u>Vermont Department of Environmental Quality</u>	<u>Point</u>	<u>Daniel Riley</u>	<u>Dan.Riley@anr.state.vt.us</u>
<u>Virginia</u>	<u>Virginia Department of Environmental Quality</u>	<u>Point</u>	<u>Thomas Ballou</u>	<u>trballou@deq.state.va.us</u>
<u>Washington</u>	<u>Olympic Region Clean Air Agency</u>	<u>Point</u>	<u>Jim Wilson</u>	<u>jim@orca.org</u>
<u>Washington</u>	<u>Puget Sound Clean Air Agency</u>	<u>Point</u>	<u>Steve Van Slyke</u>	<u>stevev@psccleanair.org</u>
<u>Washington</u>	<u>Washington State Department of Ecology</u>	<u>Point</u>	<u>Beth Stipek</u>	<u>bsti461@ecy.wa.gov</u>

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<u>Wisconsin</u>	<u>Wisconsin Department of Natural Resources</u>	<u>Point</u>	<u>Ralph C. Patterson</u>	<u>patter@dnr.state.wi.us</u>
<u>Wyoming</u>	<u>Wyoming Department of Enviromental Quality</u>	<u>Point</u>	<u>Robert Arn</u>	<u>marn@state.wy.us</u>

Table A-2. Summary of State/Local/Tribal 2002 Point Source Data Submittals (June 2004)^a

State Abbr.	Name	State FIPS	File Type^b	Total Number Counties in State	County Count in Submittal	HAP Count	CAP Count	Emissions Record Count
AK	Alaska	02	S	27	16		7	9,578
AL	The County of Jefferson, Alabama	01	L	1	1	37	7	3,824
AL	Alabama	01	S	67	61	126	8	28,074
AR	Arkansas	05	S	75	56	191	5	16,088
AZ	The County of Maricopa, Arizona	04	L	1	1		6	5,642
AZ	Arizona	04	S	15	12	88	4	1,343
CA	California	06	S	58	56	225	7	446,562
CO	Colorado	08	S	64	61	97	6	50,438
CT	Connecticut	09	S	8	8	1	5	13,789
CT	The County of New Haven, Connecticut	09	L	1	1	54		180
DC	District of Columbia	11	S	1	1		11	395
DE	Delaware	10	S	3	3	176	11	48,323
FL	Florida	12	S	67	64	121	7	28,084
GA	Georgia	13	S	159	85	1	8	13,892
HI	Hawaii	15	S	5	4	1	12	3,399
IA	Iowa	19	S	99	74	126	8	106,396
ID	Idaho	16	S	44	24	40	12	3,178
IL	Illinois	17	S	102	102	140	8	258,167
IN	Indiana	18	R	92	80		7	17,409
IN	Indiana	18	S	92	89	160	12	116,330
KS	Kansas	20	S	105	105	103	9	24,888
KY	Kentucky	21	S	120	115	142	5	65,419
KY	The County of Jefferson, Kentucky	21	L	1	1	2	6	851
LA	Louisiana	22	S	0	61	136	7	101,268
MA	Massachusetts	25	S	14	14	14	8	173,751
MD	Maryland	24	S	24	24	69	7	52,791
ME	Maine	23	S	16	16	66	7	9,066
MI	Michigan	26	R	83	57		7	7,581
MI	Michigan	26	S	83	82	147	7	238,830

<u>State Abbr.</u>	<u>Name</u>	<u>State FIPS</u>	<u>File Type^b</u>	<u>Total Number Counties in State</u>	<u>County Count in Submittal</u>	<u>HAP Count</u>	<u>CAP Count</u>	<u>Emissions Record Count</u>
<u>MN</u>	<u>Minnesota</u>	<u>27</u>	<u>S</u>	<u>87</u>	<u>86</u>	<u>209</u>	<u>8</u>	<u>179,364</u>
<u>MO</u>	<u>Missouri</u>	<u>29</u>	<u>S</u>	<u>115</u>	<u>114</u>	<u>178</u>	<u>7</u>	<u>86,362</u>
<u>MS</u>	<u>Mississippi</u>	<u>28</u>	<u>S</u>	<u>82</u>	<u>82</u>	<u>180</u>	<u>8</u>	<u>24,964</u>
<u>MT</u>	<u>Montana</u>	<u>30</u>	<u>S</u>	<u>56</u>	<u>48</u>		<u>7</u>	<u>7,456</u>
<u>NC</u>	<u>The County of Forsyth, North Carolina</u>	<u>37</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>81</u>	<u>12</u>	<u>2,685</u>
<u>NC</u>	<u>North Carolina</u>	<u>37</u>	<u>S</u>	<u>100</u>	<u>90</u>	<u>198</u>	<u>8</u>	<u>110,727</u>
<u>NC</u>	<u>The County of Buncombe, North Carolina</u>	<u>37</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>9</u>	<u>8</u>	<u>89</u>
<u>NC</u>	<u>The County of Mecklenburg, North Carolina</u>	<u>37</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>155</u>	<u>12</u>	<u>7,074</u>
<u>ND</u>	<u>North Dakota</u>	<u>38</u>	<u>S</u>	<u>53</u>	<u>19</u>		<u>5</u>	<u>418</u>
<u>NE</u>	<u>The County of Douglas, Nebraska</u>	<u>31</u>	<u>L</u>	<u>93</u>	<u>1</u>	<u>73</u>	<u>8</u>	<u>647</u>
<u>NE</u>	<u>Nebraska</u>	<u>31</u>	<u>S</u>	<u>93</u>	<u>73</u>	<u>133</u>	<u>7</u>	<u>9,078</u>
<u>NE</u>	<u>The County of Lancaster, Nebraska</u>	<u>31</u>	<u>L</u>	<u>93</u>	<u>1</u>	<u>88</u>	<u>5</u>	<u>240</u>
<u>NH</u>	<u>New Hampshire</u>	<u>33</u>	<u>S</u>	<u>10</u>	<u>9</u>	<u>68</u>	<u>8</u>	<u>10,105</u>
<u>NJ</u>	<u>New Jersey</u>	<u>34</u>	<u>S</u>	<u>21</u>	<u>21</u>	<u>117</u>	<u>7</u>	<u>92,207</u>
<u>NM</u>	<u>New Mexico</u>	<u>35</u>	<u>S</u>	<u>33</u>	<u>30</u>	<u>139</u>	<u>8</u>	<u>37,132</u>
<u>NM</u>	<u>The County of Bernalillo, New Mexico</u>	<u>35</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>71</u>	<u>10</u>	<u>2,771</u>
<u>NV</u>	<u>The County of Washoe, Nevada</u>	<u>32</u>	<u>L</u>	<u>1</u>	<u>1</u>		<u>3</u>	<u>24</u>
<u>NV</u>	<u>The County of Clark, Nevada</u>	<u>32</u>	<u>L</u>	<u>1</u>	<u>1</u>		<u>6</u>	<u>981</u>
<u>NV</u>	<u>Nevada</u>	<u>32</u>	<u>S</u>	<u>17</u>	<u>16</u>		<u>9</u>	<u>7,592</u>
<u>NY</u>	<u>New York</u>	<u>36</u>	<u>S</u>	<u>62</u>	<u>58</u>	<u>203</u>	<u>8</u>	<u>43,266</u>
<u>OH</u>	<u>Submitted by Dayton Regional Air Pollution Control Agency:</u>							
<u>OH</u>	<u>The County of Clark, Ohio</u>	<u>39</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>4</u>	<u>5</u>	<u>80</u>
<u>OH</u>	<u>The County of Greene, Ohio</u>	<u>39</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>5</u>	<u>99</u>
<u>OH</u>	<u>The County of Montgomery, Ohio</u>	<u>39</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>13</u>	<u>11</u>	<u>595</u>
<u>OH</u>	<u>The County of Preble, Ohio</u>	<u>39</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>11</u>
<u>OH</u>	<u>The County of Darke, Ohio</u>	<u>39</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>5</u>	<u>5</u>	<u>110</u>
<u>OH</u>	<u>The County of Miami, Ohio</u>	<u>39</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>5</u>	<u>94</u>
<u>OH</u>	<u>The County of Cuyahoga, Ohio</u>	<u>39</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>64</u>		<u>884</u>
<u>OH</u>	<u>Ohio</u>	<u>39</u>	<u>S</u>	<u>88</u>	<u>65</u>	<u>112</u>	<u>9</u>	<u>46,671</u>
<u>OH</u>	<u>Ohio</u>	<u>39</u>	<u>R</u>	<u>88</u>	<u>34</u>		<u>7</u>	<u>15,939</u>
<u>OK</u>	<u>Oklahoma</u>	<u>40</u>	<u>S</u>	<u>77</u>	<u>66</u>	<u>113</u>	<u>8</u>	<u>23,922</u>

<u>State Abbr.</u>	<u>Name</u>	<u>State FIPS</u>	<u>File Type^b</u>	<u>Total Number Counties in State</u>	<u>County Count in Submittal</u>	<u>HAP Count</u>	<u>CAP Count</u>	<u>Emissions Record Count</u>
OR	Oregon	41	S	36	33	156	8	28,115
OR	The County of Lane, Oregon	41	L	1	1		8	58
PA	The County of Philadelphia, Pennsylvania	42	L	1	1	83	8	22,708
PA	The County of Allegheny, Pennsylvania	42	L	1	1	136	9	44,300
PA	Pennsylvania	42	S	67	64	116	7	53,089
RI	Rhode Island	44	S	5	5	99	5	5,060
SC	South Carolina	45	S	46	46	166	8	68,918
SD	South Dakota	46	S	66	13		7	847
TN	The County of Hamilton, Tennessee	47	L	1	1	43	8	2,273
TN	The County of Davidson, Tennessee	47	L	1	1	88	6	8,587
TN	Tennessee	47	S	95	78	18	11	25,671
TN	The County of Shelby, Tennessee	47	L	1	1	95	9	4,251
TN	The County of Knox, Tennessee	47	L	1	1	29	6	185
TR	Pueblo of Laguna, New Mexico	00	B	NA	NA		4	6
TR	Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico & Utah	00	B	NA	NA		5	39
TR	Confederated Tribes of the Umatilla Reservation, Oregon	00	B	NA	NA		5	5
TR	Coeur d'Alene Tribe of the Coeur d'Alene Reservation, Idaho	00	B	NA	NA	47	6	112
TR	La Posta Band of Diegueno Mission Indians of the La Posta Indian Reservation, California	00	B	NA	NA		5	48
TR	Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, Montana	00	B	NA	NA		6	117
TR	Pueblo of Santa Ana, New Mexico	00	B	NA	NA		5	29
TR	Gila River Indian Community of the Gila River Indian Reservation, Arizona	00	B	NA	NA		5	80
TR	Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona	00	B	NA	NA		9	1,099
TR	Fond du Lac Band of the Minnesota Chippewa Tribe	00	B	NA	NA	1	6	67
TX	Texas	48	S	254	201	219	6	706,540
UT	Utah	49	S	29	25	121	7	23,848
VA	Virginia	51	S	134	119	115	7	54,090
VT	Vermont	50	S	14	13	78	7	2,316

<u>State Abbr.</u>	<u>Name</u>	<u>State FIPS</u>	<u>File Type^b</u>	<u>Total Number Counties in State</u>	<u>County Count in Submittal</u>	<u>HAP Count</u>	<u>CAP Count</u>	<u>Emissions Record Count</u>
<u>WA</u>	<u>Submitted by Olympic Region Clean Air Agency:</u>							
<u>WA</u>	<u>The County of Mason, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>18</u>	<u>7</u>	<u>71</u>
<u>WA</u>	<u>The County of Clallam, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>21</u>	<u>7</u>	<u>151</u>
<u>WA</u>	<u>The County of Grays Harbor, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>26</u>	<u>7</u>	<u>236</u>
<u>WA</u>	<u>The County of Thurston, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>12</u>	<u>7</u>	<u>104</u>
<u>WA</u>	<u>The County of Pacific, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>14</u>	<u>7</u>	<u>40</u>
<u>WA</u>	<u>Washington</u>	<u>53</u>	<u>S</u>	<u>39</u>	<u>20</u>	<u>100</u>	<u>8</u>	<u>7,163</u>
<u>WA</u>	<u>Submitted by Puget Sound Clean Air Agency:</u>							
<u>WA</u>	<u>The County of King, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>25</u>	<u>6</u>	<u>184</u>
<u>WA</u>	<u>The County of Pierce, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>20</u>	<u>7</u>	<u>187</u>
<u>WA</u>	<u>The County of Kitsap, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>60</u>	<u>4</u>	<u>164</u>
<u>WA</u>	<u>The County of Snohomish, Washington</u>	<u>53</u>	<u>L</u>	<u>1</u>	<u>1</u>	<u>57</u>	<u>6</u>	<u>313</u>
<u>WI</u>	<u>Wisconsin</u>	<u>55</u>	<u>R</u>	<u>72</u>	<u>50</u>		<u>7</u>	<u>32,361</u>
<u>WI</u>	<u>Wisconsin</u>	<u>55</u>	<u>S</u>	<u>72</u>	<u>70</u>	<u>110</u>	<u>8</u>	<u>48,941</u>
<u>WV</u>	<u>West Virginia</u>	<u>54</u>	<u>S</u>	<u>55</u>	<u>48</u>	<u>152</u>	<u>8</u>	<u>42,877</u>
<u>WY</u>	<u>Wyoming</u>	<u>56</u>	<u>S</u>	<u>23</u>	<u>20</u>	<u>63</u>	<u>4</u>	<u>2,896</u>

^a These counts reflect adjustments for duplicates, non-HAPs and CAPs, and referential integrity errors.

^b L = Local Agency Submittal

S = State Agency Submittal

R = Regional Planning Organization Submittal

B = Tribal Submittal

Appendix B

Facility Lists for MACT Codes for the Final 2002 NEI

Facility Lists for MACT Codes

<u>MACT CODE</u>	<u>MACT Source Category</u>	<u>FACILITY LIST</u>
<u>1301</u>	<u>Acetal Resins Production</u>	<u>FACILLIST-99NEI</u>
<u>1001</u>	<u>Acrylic/Modacrylic Fibers Production</u>	<u>FACILLIST-RTI</u>
<u>1001</u>	<u>Acrylic/Modacrylic Fibers Production</u>	<u>FACILLIST-99NEI</u>
<u>1302</u>	<u>Acrylonitrile-Butadiene-Styrene Production</u>	<u>FACILLIST-99NEI</u>
<u>0701</u>	<u>Aerospace Industries</u>	<u>FACILLIST-99NEI</u>
<u>0960</u>	<u>Agricultural Chemicals and Pesticides Manufacturing</u>	<u>FACILLIST-RTI</u>
<u>1347</u>	<u>Amino/Phenolic Resins Production</u>	<u>FACILLIST-99NEI</u>
<u>0702</u>	<u>Auto & Light Duty Truck (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>0702</u>	<u>Auto & Light Duty Truck (Surface Coating)</u>	<u>FACILLIST-RTI</u>
<u>1305</u>	<u>Boat Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>1415</u>	<u>Carbon Black Production</u>	<u>FACILLIST-99NEI</u>
<u>1349</u>	<u>Cellulose Products Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>1349</u>	<u>Cellulose Products Manufacturing</u>	<u>FACILLIST-RTI</u>
<u>0415</u>	<u>Clay Ceramics Manufacturing</u>	<u>FACILLIST-RTI</u>
<u>0415</u>	<u>Clay Ceramics Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>1405</u>	<u>Cyanide Chemicals Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>1610</u>	<u>Decorative Chromium Electroplating</u>	<u>FACILLIST-99NEI</u>
<u>0101-1</u>	<u>Engine Test Facilities</u>	<u>FACILLIST-99NEI</u>
<u>0101-1</u>	<u>Engine Test Facilities</u>	<u>FACILLIST-ESD02</u>
<u>0101-1</u>	<u>Engine Test Facilities</u>	<u>FACILLIST-RTI</u>
<u>1311</u>	<u>Epichlorohydrin Elastomers Production</u>	<u>FACILLIST-99NEI</u>
<u>1635</u>	<u>Ethylene Processes</u>	<u>FACILLIST-99NEI</u>
<u>0304</u>	<u>Ferroalloys Production</u>	<u>FACILLIST-99NEI</u>
<u>0304</u>	<u>Ferroalloys Production</u>	<u>FACILLIST-ESD02</u>
<u>1341</u>	<u>Flexible Polyurethane Foam Fabrication Operations</u>	<u>FACILLIST-ESD02</u>
<u>1341</u>	<u>Flexible Polyurethane Foam Fabrication Operations</u>	<u>FACILLIST-99NEI</u>
<u>1314</u>	<u>Flexible Polyurethane Foam Production</u>	<u>FACILLIST-99NEI</u>
<u>1636</u>	<u>Friction Materials Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>0601</u>	<u>Gasoline Distribution (Stage I)</u>	<u>FACILLIST-ESD02</u>
<u>0601</u>	<u>Gasoline Distribution (Stage I)</u>	<u>FACILLIST-99NEI</u>
<u>1615</u>	<u>Hard Chromium Electroplating</u>	<u>FACILLIST-99NEI</u>
<u>1644</u>	<u>Hospital Sterilizers</u>	<u>FACILLIST-RTI</u>
<u>1407</u>	<u>Hydrochloric Acid Production</u>	<u>FACILLIST-99NEI</u>
<u>1409</u>	<u>Hydrogen Fluoride Production</u>	<u>FACILLIST-99NEI</u>

<u>MACT CODE</u>	<u>MACT Source Category</u>	<u>FACILITY LIST</u>
<u>1461</u>	<u>Industrial Inorganic Chemical Manufacturing</u>	<u>FACILLIST-RTI</u>
<u>0305</u>	<u>Integrated Iron & Steel Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>0305</u>	<u>Integrated Iron & Steel Manufacturing</u>	<u>FACILLIST-ESD02</u>
<u>0305</u>	<u>Integrated Iron & Steel Manufacturing</u>	<u>FACILLIST-RTI</u>
<u>0308</u>	<u>Iron and Steel Foundries</u>	<u>FACILLIST-99NEI</u>
<u>0308</u>	<u>Iron and Steel Foundries</u>	<u>FACILLIST-RTI</u>
<u>0704</u>	<u>Large Appliance (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>1634</u>	<u>Leather Tanning & Finishing Operations</u>	<u>FACILLIST-99NEI</u>
<u>0408</u>	<u>Lime Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>0408</u>	<u>Lime Manufacturing</u>	<u>FACILLIST-ESD02</u>
<u>0408</u>	<u>Lime Manufacturing</u>	<u>FACILLIST-RTI</u>
<u>1101</u>	<u>Manufacture of Nutritional Yeast</u>	<u>FACILLIST-99NEI</u>
<u>0707</u>	<u>Metal Can (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>0707</u>	<u>Metal Can (Surface Coating)</u>	<u>FACILLIST-RTI</u>
<u>0708</u>	<u>Metal Coil (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>0709</u>	<u>Metal Furniture (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>0709</u>	<u>Metal Furniture (Surface Coating)</u>	<u>FACILLIST-ESD02</u>
<u>1318</u>	<u>Methyl Methacrylate-Butadiene-Styrene Terpolymers Production</u>	<u>FACILLIST-99NEI</u>
<u>0409</u>	<u>Mineral Wool Production</u>	<u>FACILLIST-99NEI</u>
<u>0409</u>	<u>Mineral Wool Production</u>	<u>FACILLIST-RTI</u>
<u>1642</u>	<u>Miscellaneous Coating Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>1641</u>	<u>Miscellaneous Organic Chemical Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>0802</u>	<u>Municipal Landfills</u>	<u>FACILLIST-99NEI</u>
<u>1321</u>	<u>Nitrile Butadiene Rubber Production</u>	<u>FACILLIST-99NEI</u>
<u>0602</u>	<u>Organic Liquids Distribution (Non-Gasoline)</u>	<u>FACILLIST-99NEI</u>
<u>0911</u>	<u>Pesticide Active Ingredient Production</u>	<u>FACILLIST-ESD02</u>
<u>0502</u>	<u>Petroleum Refineries - Catalytic Cracking, Catalytic Reforming, & Sulfur Plant Units</u>	<u>FACILLIST-99NEI</u>
<u>0503</u>	<u>Petroleum Refineries - Other Sources Not Distinctly Listed</u>	<u>FACILLIST-99NEI</u>
<u>1201</u>	<u>Pharmaceutical Production</u>	<u>FACILLIST-99NEI</u>
<u>0712</u>	<u>Plastic Parts & Products (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>1624</u>	<u>Plywood and Composite Wood Products</u>	<u>FACILLIST-99NEI</u>
<u>1325</u>	<u>Polybutadiene Rubber Production</u>	<u>FACILLIST-99NEI</u>
<u>1328</u>	<u>Polyethylene Terephthalate Production</u>	<u>FACILLIST-99NEI</u>
<u>1331</u>	<u>Polystyrene Production</u>	<u>FACILLIST-99NEI</u>
<u>0410</u>	<u>Portland Cement Manufacturing</u>	<u>FACILLIST-RTI</u>

<u>MACT CODE</u>	<u>MACT Source Category</u>	<u>FACILITY LIST</u>
<u>0201</u>	<u>Primary Aluminum Production</u>	<u>FACILLIST-99NEI</u>
<u>0201</u>	<u>Primary Aluminum Production</u>	<u>FACILLIST-RTI</u>
<u>0203</u>	<u>Primary Copper Smelting</u>	<u>FACILLIST-99NEI</u>
<u>0203</u>	<u>Primary Copper Smelting</u>	<u>FACILLIST-RTI</u>
<u>0204</u>	<u>Primary Lead Smelting</u>	<u>FACILLIST-99NEI</u>
<u>0207</u>	<u>Primary Magnesium Refining</u>	<u>FACILLIST-99NEI</u>
<u>0713</u>	<u>Printing, Coating & Dyeing Of Fabrics</u>	<u>FACILLIST-99NEI</u>
<u>0714</u>	<u>Printing/Publishing (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>0714</u>	<u>Printing/Publishing (Surface Coating)</u>	<u>FACILLIST-RTI</u>
<u>0803</u>	<u>Publicly Owned Treatment Works</u>	<u>FACILLIST-99NEI</u>
<u>1626-2</u>	<u>Pulp & Paper Production - Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-alone Semichemical Pulping Mills (Subpart MM)</u>	<u>FACILLIST-99NEI</u>
<u>1626-1</u>	<u>Pulp & Paper Production - Pulping and Bleaching Systems at Kraft, Soda, Sulfite, and Semichemical Pulping Mills (Subpart S)</u>	<u>FACILLIST-99NEI</u>
<u>1626-3</u>	<u>Pulp and Paper Production - NonMACT Facilities</u>	<u>FACILLIST-99NEI</u>
<u>1626</u>	<u>Pulp and Paper Production - Not Otherwise Sub-Classified</u>	<u>FACILLIST-99NEI</u>
<u>0406</u>	<u>Refractory Products Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>0406</u>	<u>Refractory Products Manufacturing</u>	<u>FACILLIST-ESD02</u>
<u>0406</u>	<u>Refractory Products Manufacturing</u>	<u>FACILLIST-RTI</u>
<u>1337</u>	<u>Reinforced Plastic Composites Production</u>	<u>FACILLIST-99NEI</u>
<u>0101-2</u>	<u>Rocket Engine Test Firing</u>	<u>FACILLIST-ESD02</u>
<u>0101-2</u>	<u>Rocket Engine Test Firing</u>	<u>FACILLIST-RTI</u>
<u>1631</u>	<u>Rubber Tire Production</u>	<u>FACILLIST-99NEI</u>
<u>0202</u>	<u>Secondary Aluminum Production</u>	<u>FACILLIST-99NEI</u>
<u>0202</u>	<u>Secondary Aluminum Production</u>	<u>FACILLIST-RTI</u>
<u>1629</u>	<u>Semiconductor Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>0715</u>	<u>Shipbuilding & Ship Repair (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>1103</u>	<u>Solvent Extraction for Vegetable Oil Production</u>	<u>FACILLIST-99NEI</u>
<u>1003</u>	<u>Spandex Production</u>	<u>FACILLIST-99NEI</u>
<u>0364</u>	<u>Stainless and Nonstainless Steel Manufacturing: Electric Arc Furnaces (EAF)</u>	<u>FACILLIST-RTI</u>
<u>0310</u>	<u>Steel Pickling - HCL Process</u>	<u>FACILLIST-ESD02</u>
<u>0310</u>	<u>Steel Pickling - HCL Process</u>	<u>FACILLIST-RTI</u>
<u>1338</u>	<u>Styrene Acrylonitrile Production</u>	<u>FACILLIST-99NEI</u>
<u>1339</u>	<u>Styrene-Butadiene Rubber & Latex Production</u>	<u>FACILLIST-99NEI</u>
<u>1501</u>	<u>Synthetic Organic Chemical Manufacturing (HON)</u>	<u>FACILLIST-99NEI</u>

<u>MACT CODE</u>	<u>MACT Source Category</u>	<u>FACILITY LIST</u>
<u>1501</u>	<u>Synthetic Organic Chemical Manufacturing (HON)</u>	<u>FACILLIST-RTI</u>
<u>0411</u>	<u>Taconite Iron Ore Processing</u>	<u>FACILLIST-99NEI</u>
<u>0411</u>	<u>Taconite Iron Ore Processing</u>	<u>FACILLIST-ESD02</u>
<u>0413</u>	<u>Wet-Formed Fiberglass Mat Production</u>	<u>FACILLIST-99NEI</u>
<u>0703</u>	<u>Wood Building Products (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>0703</u>	<u>Wood Building Products (Surface Coating)</u>	<u>FACILLIST-RTI</u>
<u>0716</u>	<u>Wood Furniture (Surface Coating)</u>	<u>FACILLIST-99NEI</u>
<u>0716</u>	<u>Wood Furniture (Surface Coating)</u>	<u>FACILLIST-RTI</u>
<u>0412</u>	<u>Wool Fiberglass Manufacturing</u>	<u>FACILLIST-99NEI</u>
<u>0412</u>	<u>Wool Fiberglass Manufacturing</u>	<u>FACILLIST-ESD02</u>
<u>0412</u>	<u>Wool Fiberglass Manufacturing</u>	<u>FACILLIST-RTI</u>

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