Common Sense Initiative
Automobile Manufacturing Sector

U.S. Automobile Assembly Plants and Their Communities

Environmental, Economic and Demographic Profile

July 15, 1997

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Part I:

Database Description, Findings and Recommendations

July 15, 1997

PART I: PROFILE DESCRIPTION, FINDINGS AND RECOMMENDATIONS

I-1 INTRODUCTION

This document presents information about automobile assembly plants in the United States and the communities in which they are located. A multi-stakeholder team ("Project Team") compiled it as a project of the Common Sense Initiative (CSI) for the Automobile Manufacturing Sector (see Appendix A for lists of the Auto Sector Subcommittee and Project Team members). CSI is a experiment to see if a diverse group of stakeholders in a given industrial sector can develop cleaner, cheaper, and smarter ways to protect the environment (see Appendix B for information about CSI). The CSI Project Team formed a multi-stakeholder "work group" to produce this data package (see Appendix C).

A compiled information base includes environmental, economic and demographic data. This variety reflects the team's desire to improve understanding by all stakeholders about sector-and community-related issues. In particular, the Project Team recognized that automobile manufacturing facilities operate within and as part of their communities, and so the report includes information about those communities.

The report is organized into three main parts. The first part, which is this section, provides background information. As with any effort of this type, important discussions of methodology direct the reader to consider data limitations. This part also presents condensed summaries of the data and some lessons learned while compiling the package.

The second part of the report contains sector-wide summaries of the raw data. For the purposes of this report as well as how CSI defined this sector, the universe of facilities was limited to automobile and light duty truck assembly plants. The third part of the report, which should interest assembly plant communities, provides local community and plant specific information. The report's appendices provide additional technical detail.

While the Project Team attempted to compile a breadth of relevant data, information sources were incomplete. By publishing this effort, the Project Team hopes to encourage a dialogue about which data are useful for characterizing an industry or a community and how this type of information can best be presented and used to meet the needs of various stakeholders.

I-2 OBSERVATIONS AND RECOMMENDATIONS

A key goal of this project was to compile publicly available economic, demographic and environmental data for auto assembly communities and for the auto assembly sector as a whole. Another goal was to examine how existing data resources could be used to support experiments in community-based and sector-wide environmental decision-making.

MAIN OBSERVATIONS

The Project Team found that existing data resources are not well suited to industrial sector-wide, single facility multi-media or community-wide assessments. The Project Team also found that the reviewed data bases were, to varying degrees, incomplete, inaccurate, not current or not easily accessible.

MAIN RECOMMENDATIONS

1. The EPA should explore ways to improve the viability, accessibility and usefulness of data resources. If other community-based or industry sector-based initiatives are undertaken, improved reporting formats, uses of data or presentations are needed and should involve industry, environmental groups, state and local governments and other stakeholders.

2. The EPA should take steps to address the problems of data accuracy, completeness and consistency that were identified by the Project Team.

DETAILED OBSERVATIONS

The following observations describe a number of challenges and difficulties encountered by the Project Team in compiling data on assembly plants and their communities. These observations provide the basis for the Project Team's recommendations.

Sector Definition

The Standard Industrial Classification system (SIC) is a logical starting place for defining a sector of interest and accessing data on that sector. If a sector is defined well by a single SIC or combinations of SICs, then collecting environmental and economic data will be relatively straightforward.

In many cases, however, SICs are too broad, capturing facilities with very different technical and economic characteristics. Where SICs do not provide a useful definition of a sector, data collection may require a plant-by-plant approach. Such a plant-by-plant approach may not be feasible if the sector in question is not extensively reported on (e.g., by trade associations and trade literature) and/or if the sector includes large numbers of small facilities (e.g., electroplating).

SICs 3711[1] and 3713[2] include vehicle body suppliers as well as assembly plants, and include heavy-duty trucks, buses and other vehicles as well as autos and light-duty trucks. For this project, therefore, the SIC categories were too broad for defining the sector of interest. EPA and industry sources were used to define the universe of plants in the sector. The primary EPA resource was the list of plants reporting to TRI for SICs 3711 and 3713 followed by a review to identify auto and LDT assembly plants. The primary industry resource was a list generated by AAMA and verified by company personnel. The Project Team also referred to published production data and obtained a final review by government and industry officials to ensure that the listed plants were currently operating (in 1995) assembly plants rather than parts suppliers or other types of facilities.

It was difficult in some cases to determine whether co-located plants should be treated as one or two plants, and what portions of a plant or facility complex should be included as "assembly." The TRI ID numbers were found to be the most consistent way to identify a facility, given inconsistencies across data sources in plant names, addresses, and plant status (operating versus temporarily or permanently closed). Even the TRI identifiers were not entirely consistent, however, because there is some variation in how companies report adjacent plants in the TRI program.

Temporal Considerations

The Project Team constructed a history of plant openings and closings over the time period of interest (1991-1994), and collected environmental data for plants that closed during the period. This effort was complicated because the operating status of plants changes with relative frequency. During the period of interest, several plants opened, closed, or closed temporarily to convert to producing a different vehicle or from assembly to a different manufacturing process. Plants also may temporarily shut down for various other reasons. The Project Team needed help from industry officials to distinguish temporary from permanent closings.

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[1] "Motor Vehicles and Passenger Car Bodies"

[2] "Truck and Bus Bodies"

Normalization

The interpretation of trends is improved by distinguishing fluctuations in releases caused by changes in production levels from trends due to other factors (changes in production technology, pollution prevention, vehicle size, configuration, product mix, etc.). The Project Team collected annual production data (number of vehicles) for each assembly plant. Production data were generally available from published trade sources, but some special data collection by the American Automobile Manufacturers Association (AAMA) was required to provide data on a consistent basis over the time period of interest. Specifically, the published production data reported for 1992 and after were based on the calendar year while earlier data were based on a vehicle model year.

Having the production data allowed the Project Team to calculate normalized trends -- that is, trends in emissions or waste quantities generated per vehicle produced -- as well as aggregate trends. Calculation of trends in releases per vehicle produced provides a more consistent basis for measurement, but improvements may be possible to account for variability in vehicle sizes, configuration and product mix.

Sector Economic Data

Environmental data are generally reported by facility (source), but economic data generally are not. For example, data on production are publicly-reported by plant for the auto industry (though not for all industries), but data on employment and other economic data (e.g., profits) are not. Such data can often be obtained at the sector level, for sectors that can be defined by SIC codes, from Census and other government data sources. For the automobile/light-duty truck assembly sector, these SIC-based data sources were too inclusive and lack of facility-level economic data precluded building a sector-level economic profile from individual plant data (as was done with the environmental data).

Community Information

As a first step in developing plant-community profiles, the Project Team collected a limited set of data on local resident characteristics, local employment, and the assembly plant itself. EPA Region 4 collected three types of demographic data for this purpose (population minority percentage, income and education level). Then, to provide a more complete picture of auto plant community characteristics, the Project Team added other kinds of economic and demographic data -- e.g., manufacturing employment, median household income, and population age.

Economic and demographic data were more readily available by geographic units below the state level than were environmental data. A key issue in gathering such data was the choice between using standard geographic areas (Census units, counties and states) used in data bases versus collecting data for specially-designed areas (e.g., 3-mile circles around assembly plants). The latter approach allowed a more precise definition of a plant's immediate "neighborhood" but involved substantially more work.

Economic and demographic data for areas around plants (1-, 3- and 5-mile radius circles) were compiled by EPA Region 4. Sources of environmental releases in a 3-mile area around assembly plants were identified using the TRI data. Any environmental, demographic and economic data that are identified by location (e.g. latitude/longitude coordinates) can be aggregated into areas more relevant to a particular plant and community, using Geographic Information Systems (GIS) methods. Developing data for tailored geographic regions was complicated by inaccuracies in reported geographic location identifiers, as described later in this section.

Researchers may determine which information to include in a community profile in various ways. Like geographic scope, the decision will often depend on preference, convenience, capability and objectives. Likewise, the community definition itself (neighborhood, county, watershed, etc.) should reflect the objectives of each particular project.

Data Accessibility and Management

Currently, substantial environmental information is collected on individual plants that can be used to characterize facilities, industries and communities. EPA is working to improve data management through such efforts as the Facility Identifier Initiative and electronic data interchange (EDI). On-line access to the TRI database is good and improving rapidly and the data are available for purchase on CD-ROM. The TRI data management process provides a verification and update procedure to ensure the accuracy of data provided to the public.

Data Compilation

Substantial programming effort was involved to compile the information in the format provided in this document. To use the key data sources, users must have access to a computer with sufficient disk space, a modem with reasonable speed, and (in the case of the TRI CD ROM) a CD drive and sufficient memory to take advantage of these resources. Each database requires expertise on the database structure and definitions, on specific quirks in each data source, on the software needed to access and analyze the data, and on appropriate ways of interpreting the data.

The Project Team found that existing "preprogrammed formats" were insufficient for this effort. Extensive programming, using multiple databases, was required to produce some profile

formats. Other databases required manipulation of the data using various database programs (e.g., Paradox, Access, Lotus or Excel) to produce other community and/or sector formats.

A major source of complexity in using the BRS and TRI data is multiple entries for some data items. The basic unit in the BRS data is the waste stream. Each waste stream may be identified by multiple waste codes, and may be managed by multiple methods at multiple facilities. The national BRS database is formatted in a number of "flat files" which contain different portions of the data and with identifiers that allow linking the data in different files for the same waste streams.[3] This requires programming effort, and can be a source of error. Similarly, the basic unit of reporting for the TRI data is a TRI chemical. For each chemical, submitters may report multiple off-site management methods and locations. Care must be taken to capture all off-site destinations to calculate quantities transferred off-site for different management methods accurately.

Interpretation and Technical Support

Certain misinterpretations or inappropriate uses of data may occur as data become more available to a wide range of users. For example, Project Team members expressed concern that presenting a single plant's contribution to an area's emissions inventory using TRI data may be misleading because of absent or incomplete information about the relative contributions of other sources.

The Project Team also expressed concern about the common practice of summing TRI releases and transfers from a specific source and inappropriate interpretation of the sum. Because transfers include recycling or other treatment to reduce further releases, they have very different implications for environmental impacts -- both in total and in location -- than do direct releases from plants. Totals for releases and transfers were reported separately in this document.

Good technical support should help prevent interpretive errors. In this project, the Project Team found the documentation of the technical aspects of the major databases (TRI and BRS) to be

[3] To create the profiles in this report, for example, data from "flat files" G1 and G2 was linked to line up waste codes with other waste descriptors. In addition, data from flat files G4 and G5 were linked to the G1/G2 data to characterize management practices for each waste stream. Care -- and sometimes observation-by-observation investigation -- was required to avoid double-counting quantities generated in the process of linking files. In addition, there were discrepancies between the various files, caused (sometimes) by data entry errors or (more often) by missing observations.

generally good. User support staff was also helpful in answering specific questions.[4] However, general guidance on the interpretation and use of the data was limited in most cases and did not exist for criteria air pollutant data.

Reporting Practices

In the RCRA biennial report data some plants listed less than ten separate waste streams and other plants reporting more than 70 individual waste streams. Given the similarity of the basic processes (e.g., painting) that generate wastes at assembly plants, this diversity may indicate differences in company data collection and reporting practices, as well as differences in waste characteristics. More investigation would have been needed to determine how these differences in reporting practices affect interpretation of the data.

Reporting practices also vary among states. For example, no BRS data on waste physical form or source were found in the national database for plants located in Ohio. In addition, states differ in the extent to which they require reporting on hazardous waste waters managed under the Clean Water Act in the biennial report system. These inconsistencies limit users' ability to calculate totals and make comparisons at the sector level.

Data Quality

The Project Team encountered some data quality problems in the course of its work. Appendices F and G describe the results of the data quality review process. In addition, the Project Team discovered a general error in the CD-ROM version of the TRI database. The data for releases and the totals for transfers are correct; however, the data on transfers by type of transfer (e.g., energy recovery, recycling, treatment and disposal) are not correct, due to a programming error. The EPA plans to correct this error on the CD-ROM containing the 1991-1995 data (to be published shortly).[5] For this document, the Project Team relied on EPA's in-house version of the database to compile data on transfers of TRI chemicals by type.

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[4] Technical documentation includes copies of the reporting forms and instructions, and directions for accessing and manipulating the data.

[5] The TRI data in EPA's version in-house of the TRI database and the National Library of Medicine TRI database (which is available on-line to the public) were not affected by this error. It has not yet been determined whether the version of the TRI data provided by RTKNet (a non-profit network) -- also available to the public -- are affected by the error.

Data Completeness and Timeliness

Incomplete or out-of-date data were found to be a problem more often than incorrect data. Three national data sources in particular were found to be very incomplete or out-of-date:

AIRS: Data were missing in the national AIRS database for most facilities. The Project Team collected data for VOC and NOx emissions directly from the states, to fill in the gaps. Even with this effort, however, data were not available in all cases and care was needed to ensure that the states provided data on the same basis as AIRS (i.e., actual emissions rather than allowable).

PCS: This data base appeared incomplete regarding permit status for several plants. While this raised a number of questions, it was not followed up due to a combination of time limitations and issues of scope.

RCRIS: Similarly, this database appeared incomplete for similar reasons. As with the PCS, no further action was taken.

Definition of "Facility"

Collecting data from multiple sources for the same facilities was hindered by inconsistencies across data bases in the methods used to identify facilities. Obtaining EPA program-specific identification numbers for the active assembly plants was complicated by the fact that different names and addresses were sometimes used in reporting. Also, several facilities have plants close or adjacent to each other with different TRI and RCRA identification numbers. Regulatory variations in the definition of facility across programs complicated compilation of data and comparisons across plants.

Location Coordinates

Similarly, mapping environmental data was complicated by inconsistencies and inaccuracies in the location coordinates reported by facilities. The Project Team used the latitude and longitude coordinates reported in the TRI database as a starting point. EPA has developed "preferred coordinates" for cases where the latitudes and longitudes reported by facilities appear to be inaccurate. The Project Team reviewed these preferred coordinates and found additional cases where

corrections were needed. EPA plans to address issues identified with the process of selecting TRI preferred locations, particularly for plants with large sites, in creating the 1994 TRI GIS files.[6]

RECOMMENDATIONS

Based on its experience compiling the data in this report, the Project Team recommends that EPA continue efforts in two directions to improve data support for future community and sector-based initiatives. These two efforts address the accessibility and usefulness of data on one hand, and the basic quality of data on the other. The Project Team recommends that industry, environmental groups and other stakeholders be involved in both efforts.

1. *The EPA should explore ways to improve the viability, accessibility and usefulness of data resources. If other community-based or industry sector-based initiatives are undertaken, improved reporting formats, uses of data or presentations are needed and should involve industry, environmental groups, state and local governments and other stakeholders.*

   The Project Team attempted to develop multimedia profiles which provided environmental, economic, and demographic data in both a community and industrial sector format. Substantial progress was made in this project compiling data in new formats. However, questions of data viability, accessibility and usefulness remain.

   More extensive guidance on use and interpretation of such resources is needed for appropriate use of data by a more diverse user community. For example, explicit warnings about potential double-counting errors that may result when using data elements with multiple observations per waste or chemical is needed.

   It would be impossible to define data and reporting formats that would meet all users' needs. Greater use of "relational databases" would better serve a full range of environmental analysis and inquiry. Access to such resources could be improved and technical support for users would help assure appropriate interpretation.

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[6] Information on methods used to evaluate and correct location coordinates is provided in Appendix F of this document.

EPA publishes some summaries of the data (notably TRI and BRS).[7] In addition, the TRI database provides a small number of "preformatted" reports that can be used without special programming. However, many emerging uses are not well-served by these summaries and formats. EPA could develop additional report formats that users could access without special programming. This would improve the usefulness of data for community and sector-based initiatives. For example:

Plant/Source Profiles: Preformatted "profiles" for individual sources or plants, which included data from various data bases, could be developed. Such profiles might be accessed on-line with a user-friendly front end for selecting plants.

Area Profiles: Areas might be defined in different ways to support different uses, including fixed reporting boundaries (county, MSA, or ZIP code) and areas (e.g., 3- or 5-miles) around specific sources or environmental resources (located by lat/long coordinates).

2. *The EPA should take steps to address the problems of data accuracy, completeness and consistency that were identified by the Project Team.*

To the extent possible, a quality assurance/quality control process should be established where it currently is lacking. For example, the final BRS database is not corrected when errors are found by users. Maintaining a dynamic database presents certain problems. However, some errors are likely to remain hidden until the data are used, even if data entry forms have been quality controlled. It is therefore useful to have a mechanism for making corrections after the data are made available to users. The use of revised "Form Rs" to make corrections to the TRI data is a good model for this process.

In addition, EPA should develop a strategy to correct incomplete or out-of-date data. For example, lack of available VOC and NOx data in EPA's AIRS and state air program databases presented significant obstacles to summarizing a major environmental parameter for auto assembly plants.

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[7] For example, totals by waste or chemical, totals by state, and a variety of "Top 10" lists.

EPA should also develop a strategy for improving the accuracy of location coordinates in various databases. For example, EPA could provide a map showing the location of each plant/source as identified by submitted latitude and longitude, and ask submitters to verify the locations.

Finally, EPA should review the various reporting requirements that are the source of much of the relevant data, and assess whether current methods for reporting, submitting and maintaining data are sufficient to make those data available and useful for community- and industry sector-based efforts. In particular, EPA should determine whether AIRS, PCS, RCRIS and other national databases can be better maintained and quality checked, so that the data being collected are more useful for a variety of purposes.

I-3 METHODOLOGY

Defining the Universe of Facilities

The first task of the work group was to define the universe of assembly plants to be covered by the data compilation. A decision was made early in the development process to include automobile and light duty truck assembly plants. The sector is loosely defined by the Standard Industrial Classification (SIC) codes 3711 and 3713. These codes also include truck, bus and other vehicle manufacturing and equipment suppliers, so by themselves they are too broad to define the universe. Thus, the group also used EPA and industry sources to produce a list of subject plants.

EPA used the SIC codes as reported to the Toxics Release Inventory (TRI) to produce an initial list of plants.[8] Other EPA data bases (AIRS, PCS, BRS and RCRIS) were also compared in an attempt to confirm this list.[9] Several identifiers were used in this process: plant name, address, data base identification number and geographic location identifiers (latitude and longitude). Each data base was found to identify plants differently, often resulting in multiple identifiers for single plants and significant inconsistencies among the data bases.

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[8] TRI provides data on chemical specific release and transfers for all environmental media.

[9] AIRS is the Aerometric Information Retrieval System, which contains data on air emissions for criteria pollutants tracked under the Clean Air Act (CAA). PCS is the Permit Compliance System, which contains information about permitted releases to surface water under the Clean Water Act. BRS is the Biennial Reporting System, which contains hazardous waste reports under the Resource Conservation and Recovery Act (RCRA). RCRIS is the Resource Conservation and Recovery Information System, which identifies RCRA-permitted facilities.

Independently, the American Automobile Manufacturers Association (AAMA) produced a list from its own published sources. In this process, information emerged about plants that were about to open, close or convert to different types of facilities; some definitional questions also started to appear. These issues are discussed below.

The two lists were then compared and consolidated, with another review of plant names, addresses and locations to help resolve discrepancies. This effort brought to light concerns regarding the accuracy of the latitude/longitude location identifiers and the methodology used to establish these numbers. Since the work group wanted to examine existing data from the community's perspective, the location of plants was a necessary data element. As a result of this finding, EPA is revising their approach for verifying location coordinates for plants with large acreage sites.

At this point, industry representatives helped resolve two definitional problems. One situation involved two facilities that were located next door to each other, where one facility made a vehicle part that was supplied to the facility next door during the assembly process. The other situation involved a plant complex that passed partly assembled vehicles between two sections of the complex. The EPA data bases counted these plants differently, which had caused some confusion. The work group decided to count each situation as one assembly plant.

The final result was an agreed-upon list of 56 automobile and light duty truck assembly plants that were operating in the United States in early 1995. For this report, all plants were assigned numbers (1 through 56) that were used consistently throughout the report for identification purposes. For additional reference, the package also includes identity information derived from the EPA data bases reviewed -- regulatory program ID numbers and location identifiers (see the Part III profiles).

Determining the Universe for the Period 1991-1994

Since the work group also was interested in discerning data trends, it decided to examine data for the period beginning in 1991. Where possible, the group used 1994 as the base year because that was the latest year for which TRI data were available (at time of compilation). To develop a consistent basis, the group needed to know which plants were operating during that period and which changed operating status (permanently closed, temporarily closed, newly opened or converted). The work group was unable to locate a central or published source of information about changes in plant operating status, so it relied on a review of the EPA data bases and *Automobile News* production data. Through these, the group identified an additional set of plants that had operated between 1991 and 1994 but were closed by 1995. The work group spent less effort verifying this list up front than with the 1995 universe.

Normalizing environmental release data on some basis reduces some of the effects of activity level from other factors that can affect environmental data such as vehicle size, configuration, technology and pollution prevention efforts. The number of vehicles produced per year was the most easily obtained statistic for this purpose (although it has some limitations as a basis for normalizing, as noted in Section I-4). Two primary sources were used: *Automotive News* and *Ward's Automotive Reports*. Both of these are widely available and widely used resources.

Prior to 1992, plants reported production volume according to the model year of the vehicle. Beginning in 1992, most plants reported the data by calendar year. Since all the available environmental data had a calendar year basis, the production volumes had to have the same basis. Therefore, these data for 1991-1994 were checked and corrected as necessary.

Environmental Data

As noted above, the work group reviewed several existing EPA-managed air, water, hazardous waste and Toxics Release Inventory data bases for information relevant either to the assembly plant universe or the communities in which the plants are located. This information was compiled for both the sector as a whole and for individual communities. In addition to relevance, the work group examined the data bases for completeness and reliability. In general, the group reviewed only existing and publicly available national data sources, filling gaps on a case-by-case basis as feasible.

In part, the group wanted to demonstrate the availability, extent and quality of these types of sources on behalf of others who might attempt a project similar to this one. The group found that any interested party could reproduce this effort. Substantial investments of time, computer resources and skills were needed, however, to physically collect, format and, where possible, verify the data.

In keeping with the general goal of characterizing the auto sector environmentally, as a sector and within a community context, the group researched the data bases for pollutant releases. This information was provided by the AIRS, BRS and TRI data bases. For the years 1990-1994, AIRS provided varying amounts of data on emissions of ozone precursors (NOx and VOC). The data base was disappointing for its apparent incompleteness and slowness to update. The completeness of the database depends on timely data submission by the states to EPA. To fill gaps, an EPA consultant contacted state air pollution control agencies, with care taken to ensure that the same reporting basis was used throughout the compilation (i.e., actual emissions and not potential or allowable). The group did not attempt to collect data on emissions of other Clean Air Act criteria pollutants (SO2, CO, PM10, lead) from the states.

The BRS provided information about the amount of waste generated from RCRA-listed hazardous waste streams. Since this report is biannual, the group reviewed data for 1991 and 1993, the most recent years available.

As for the Permit Compliance System (PCS) and the Resource Conservation and Recovery Information System (RCRIS), the Project Team found little data relevant to this effort other than facility identification numbers.

Of all the data bases, the group found the TRI to best meet its criteria of accessibility, completeness, reliability and timeliness. The TRI reports data on the releases and transfers of several hundred listed chemicals.

The other side of the community's environmental picture is information about the ambient conditions where the plants are located. The group relied mostly on CAA attainment status for ozone, which may be rated as attainment for the ozone national ambient air quality standard, maintenance,[10] transition (from nonattainment to attainment), moderate nonattainment, serious nonattainment and severe nonattainment. Only a few plants are located in nonattainment areas for SO_2 and particulates.

Other information relevant to the quality of the environments surrounding assembly plants includes emissions from other nearby sources of pollution. TRI provided the most readily accessible, geographic-based data that could be used for this purpose, although TRI data are not complete because many sources are not covered by the TRI reporting requirements. The results are seen in Part III, where the community profiles are presented.

A major area not addressed in this effort was ambient environmental data (e.g., water quality monitoring data) for communities.

Compiling Community-Related Information

The work group considered recognition of the community point of view as an important goal of the Project Team and its work to develop an alternative regulatory system. Thus, this package attempted to create "profiles" of assembly plant communities by assembling data available for these locations.

A variety of approaches for selecting community boundaries, as suggested by EPA data bases and other resources, were considered. EPA maintains air quality information on the basis of Air

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[10] Recently reclassified as attainment and required to have maintenance plans with contingency measures.

Quality Control Regions, which may encompass several counties or parts of counties. "Census tracts," which are defined to include between 2,500 and 8,000 residents, are generally smaller than counties. County data are routinely used in both environmental and non-environmental data resources. The size and shape of all these geographic units can vary considerably.

While considering these, the work group became aware that any geographic unit definition will present some technical nuances and limitations. In addition to using these standard reporting units, the group used an approach based on uniform, circular, user-defined areas around assembly plants. Such areas can be defined for any size using computerized Geographic Information Systems (GIS) software. EPA Region 4 also was able to compile census and demographic data on this basis. This approach, which depends on the accuracy of the latitude and longitude coordinates, can lead to a more tightly defined area around a given plant. Of those data bases examined by the work group, most of the environmental data bases use latitudes/longitudes as plant location identifiers while most non-environmental resources are reported by census categories or counties.

Economic Data

For context about the industry as well as enhancing the plant-community link, the work group found that current plant-specific economic data, such as employment levels or local taxes, often are considered sensitive information or simply are not generally available. Rather, current data are published in aggregate form, such as on a state-wide basis. Older information may be available but are not routinely or centrally maintained. For this sector, AAMA obtained employment data for 1994 and Chrysler provided data for earlier years. Obtaining data for all plants for previous years would have required significant additional effort.

A large amount of published statistics about the industry are readily available, although not on a plant specific basis. The work group decided to include some of these published statistics for background.

Demographic Information

To further characterize assembly plant communities, the work group decided to include demographic and economic data, including population and population density, race and ethnicity, age characteristics, educational attainment, income and poverty status, and employment characteristics and unemployment rate.

Data Quality Issues

Efforts have been made to ensure that the data presented here are accurate. The work group, however, could not independently verify the data's accuracy in all cases. When errors were discovered, the group corrected the appropriate table and notified the EPA data manager where appropriate. (See Appendix G for a description of the data quality review.) Generally, however, the data in this package are derived from those that were originally reported to the government.

I-4 SUMMARY OF DATA AND GUIDELINES FOR USE

General Guidelines

The data in this document provide a multi-faceted picture of assembly plants and their communities. It is important to keep several general principles in mind to avoid mis-using or misinterpreting the data. The issues noted below include only those that sector participants identified, so the list may be incomplete.

First, the current releases presented in this report may represent only a portion of the sources of contamination in a local area. Past activities in a community may have contributed substantially to current soil, groundwater, and surface waters conditions.. This is especially true of industrial and agricultural activities that occurred prior to the implementation of modern environmental regulations starting in the late 1970s.

In addition, the non-auto emission sources shown in the report were identified only through one data base, the TRI. Other current sources may exist in an area that are not required to report to TRI for various reasons and may or may not be represented in other EPA data bases. These sources may fall under the TRI threshold, they may have non-TRI-listed releases, or they may not be among the list of activities required to file reports. The work group did not review EPA's other data bases or other possible data sources to compile a comprehensive listing of these other sources. Significant sources of pollution in a given area may include non-manufacturing, non-commercial or non-agricultural sources, such as everyday human activities and biogenic processes.

Second, environmental releases from assembly plants depend heavily on the activity level of the facility. Changes in production level and product mix over time at individual plants greatly influence trends in environmental releases. The painting operation is a major source of environmental releases, and the amount of painting depends on the number of vehicles produced and on the size and configuration of those vehicles, in addition to other factors. In an attempt to normalize the data for this effect, the work group used production data in Section I-4 to assess

release trends. Some data were analyzed separately for automobile and light duty truck assembly plants, but it was not possible to normalize the data to remove the effect of vehicle size (or configuration) on environmental releases.

Third, changes in the universe of assembly plants affect aggregate environmental trends at the industry level. To assess aggregate trends for the entire sector, it would be necessary to include data on plants that operated between 1991 and 1994 but that were not included in the universe of 56. The analysis of changes over time includes only the assembly plants included in the universe of 56 plants. Because plants opened and closed during the time period covered, the analysis of aggregate trends for these 56 plants will under- or over-state changes for the sector as a whole.

Fourth, care must be taken to distinguish true changes in environmental releases from apparent changes, such as those caused by different reporting requirements or practices, changes in the scope of reporting requirements (e.g., added or delisted chemicals or wastes), changes in the applicability of a reporting requirement, changes in the definition of facility or source, or other changes in the underlying definitions.

Even after considering these issues, other factors can affect a plant's environmental profile. These factors include, for example, plant age, process equipment age, vehicle size and configuration, on-site parts production, the type of painting and other processes used, and the range of assembly tasks performed at the plant. Some plants are highly-integrated, performing some parts and all assembly steps in-house. Others obtain parts from other manufacturing facilities. In addition, plants located in nonattainment areas are subject to different limitations on criteria pollutant air emissions than plants located in attainment areas or in or near Clean Air Act Class I ("pristine") areas. New plants, modifications or expansions are subject to certain additional requirements that older, unchanged plants do not face. Differences in the environmental characteristics of plants (e.g., in total releases, waste generation and releases/generation per vehicle produced) therefore often reflect the effects of physical and legal factors rather than particular management decisions.

The following sections describe the individual data sources used for this report, including guidelines for interpreting the data that are specific to each source, and summarize the data.

Overview of U.S. Motor Vehicle Manufacturing

The following data are taken from the American Automobile Manufacturers Association publication *Motor Vehicle Facts and Figures 1996*. These data provide an overview of the U.S. motor vehicle manufacturing industry. The scope of these data is somewhat broader than the 56 assembly plants discussed elsewhere in this document, because they include manufacture of larger trucks as well as manufacture of automobiles and light duty trucks. In addition, these data are for calendar year 1995. The data compiled specifically for this report generally cover only 1991 through 1994. The data in this section, while not directly comparable to the data compiled for this

report, provide a useful current overview of the motor vehicle manufacturing sector as context. These data were not included in the data summaries provided in later parts of this section or in the Part II and Part III data tables.

Table I-1 shows U.S. production of all motor vehicles from 1930 through 1995. These data include automobiles, trucks, and buses, and are taken from *Ward's Automotive Reports* and AAMA data.

Table I-1

ANNUAL U.S. MOTOR VEHICLE PRODUCTION

Year	Passenger Cars	Commercial Vehicles	Total
1995	6,350,367	5,634,724	11,985,091
1994	6,613,970	5,648,767	12,262,737
1993	5,981,046	4,916,620	10,897,666
1992	5,664,203	4,064,587	9,728,790
1991	5,438,579	3,371,942	8,810,521
1990	6,077,449	3,705,548	9,782,997
1989	6,823,097	4,050,935	10,874,032
1988	7,113,137	4,100,550	11,213,687
1987	7,098,910	3,825,776	10,924,686
1986	7,828,783	3,505,992	11,334,775
1985	8,184,821	3,467,922	11,652,743
1984	7,773,332	3,151,449	10,924,781
1983	6,781,184	2,443,637	9,224,821
1982	5,073,496	1,912,099	6,985,595
1981	6,253,138	1,689,778	7,942,916
1980	6,375,506	1,634,335	8,009,841
1979	8,433,662	3,046,331	11,479,993
1978	9,176,635	3,722,567	12,899,202
1977	9,213,654	3,489,128	12,702,782
1976	8,497,893	2,999,703	11,497,596
1975	6,716,951	2,269,562	8,986,513
1974	7,324,504	2,746,538	10,071,042
1973	9,667,152	3,014,361	12,681,513
1972	8,828,205	2,482,503	11,310,708
1971	8,583,653	2,088,001	10,671,654
1970	6,550,128	1,733,821	8,283,949
1969	8,224,392	1,981,519	10,205,911
1968	8,848,620	1,971,790	10,820,410
1965	9,335,227	1,802,603	11,137,830
1960	6,703,108	1,202,011	7,905,119
1955	7,950,377	1,253,672	9,204,049
1950	6,628,598	1,377,261	8,005,859
1945	83,786	701,090	784,876
1940	3,728,491	784,404	4,512,895
1935	3,252,244	694,690	3,946,934
1930	2,784,745	571,241	3,355,986

Source: American Automobile Manufacturers Association, *Motor Vehicle Facts and Figures, 1996*, and *Ward's Automotive Reports*.

Production of automobiles and other vehicles, along with production of replacement parts, accounts for a significant portion of total U.S. consumption of major materials, including aluminum, lead, copper, zinc, steel and iron, as shown in Table I-2. A significant portion of these materials are from post-consumer recycled sources, and the industry is seeking to increase the recycled content and the recyclability of its products.

Table I-2

MATERIAL USAGE BY THE AUTOMOTIVE INDUSTRY, 1995

Material	Automotive Consumption	Automotive as Percent of Total U.S. Consumption
Aluminum (thous lbs.)	4,926,000	27.1%
Copper and Copper Alloy (thous lbs.)	7,651,000	10.9%
Cotton (480 lb. bales)	11,292,000	0.1%
Total Iron (tons)	3,515,000	33.5%
Lead (metric tons)	1,088,070 e	68.1% e
Plastic (thous lb.)	3,054,670	4.3% e
Rubber (Natural & Synthetic)* (metric tons)	2,030,002	63.9%
Total Steel** (tons)	14,623,389	15.0%
Zinc* (tons)	1,190,000	23.0%

e = estimate
NA = not available
* includes rubber classified as "tire" and "tire products" only.
** automotive consumption of steel in understated as shipments to the automotive market from steel centers and distributors are excluded. Data also exclude imports.
NOTE: For most materials listed, automotive consumption includes materials for cars, trucks, buses and replacement parts.
SOURCE: American Automobile Manufacturers Association, *Motor Vehicle Facts and Figures*, 1996, from various sources.

The following figure, reproduced from AAMA's *Motor Vehicle Facts and Figures 1996*, shows that a substantial portion of a vehicle's material content is typically recovered.

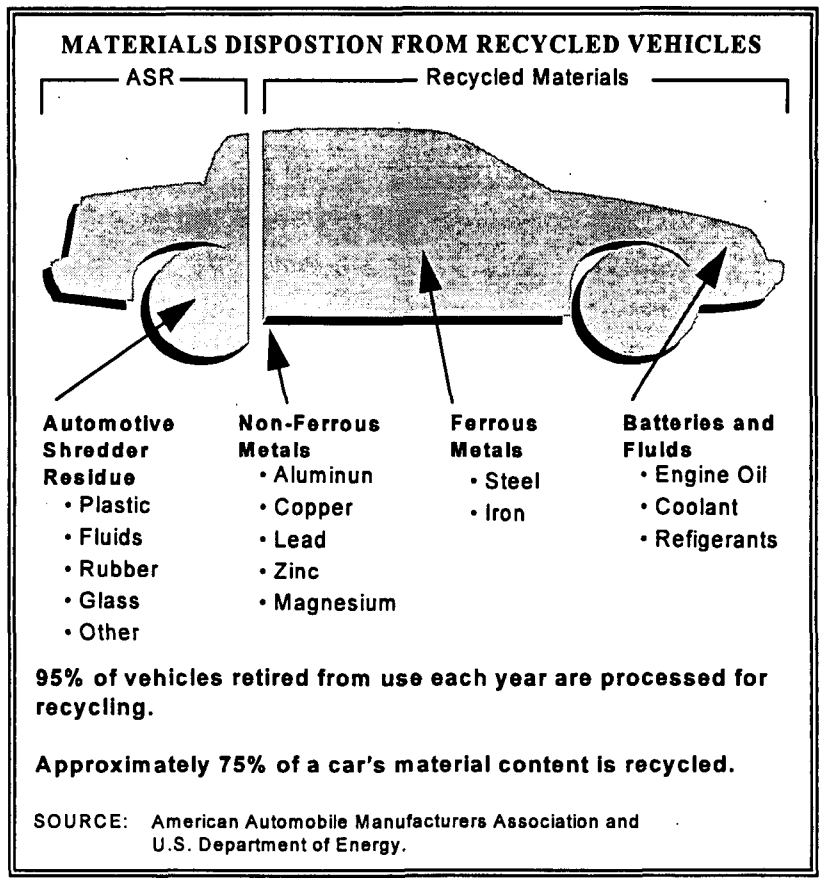

Table I-3 shows personal income of motor vehicle and equipment manufacturing employees from 1992 through 1994 in millions of dollars and as a percent of total personal income of all manufacturing employees. These data are calculated by AAMA based on data from the U.S. Department of Commerce, Bureau of Economic Analysis. The data include employees of auto, truck and bus producers and their immediate suppliers, and show that the sector as a whole accounted for seven percent of total U.S. manufacturing employee earnings in 1994.

Table I-3

PERSONAL INCOME OF MOTOR VEHICLE AND EQUIPMENT MANUFACTURING EMPLOYEES

	1992	1993	1994
Motor Vehicle & Equipment Manufacturing Employees: Personal Income (mill $)	$43,847	$45,470	$52,148
All Manufacturing Employees: Personal Income (mill $)	$692,808	$709,567	$747,552
Motor Vehicle & Equipment Manufacturing as Percent of Total Manufacturing	6.3%	6.4%	7.0%

Source: AAMA *Motor Vehicle Facts and Figures 1996*, from U.S. Department of Commerce data.

Description of Assembly Plant Universe

Automobiles and light duty trucks were assembled at 56 plants in the United States in 1995 -- 28 plants produced autos, 23 plants produced light duty trucks, one plant produced both light duty and heavy duty trucks, and four plants produced both autos and light duty trucks. Of the 56, 47 plants were operated by domestic automakers (General Motors, Ford and Chrysler) and six were operated by foreign-owned "transplant" companies (Toyota, Nissan, Honda (2 plants), Mitsubishi (Diamond-Star Motors), and BMW). Another three plants were operated as joint ventures.[11]

In the period 1991 through 1994, six plants closed or were converted to non-assembly operations and three plants opened. Appendix J lists plants that operated between 1991 and 1994 that were not included in the universe of 56 plants. The following shows the number of plants operating and the total production of autos and LDTs in each year from 1991 through 1994:

Table I-4

AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS:NUMBER OF PLANTS OPERATING AND PRODUCTION

Year	Number of Plants	Production		
		Automobiles	LDTs	Total
1991	59	5,412,048	3,237,377	8,649,425
1992	57	5,348,009	3,859,226	9,207,235
1993	57	6,033,386	4,648,311	10,681,697
1994	57	6,768,326	5,264,897	12,033,223

Source: Part II, page II-1 and Appendix J.

[11] The joint ventures are: New United Motor Mfg., Inc. (NUMMI), jointly owned by General Motors and Toyota and producing autos at one plant in California; Subaru-Isuzu Automotive Inc., jointly owned by Fuji Heavy Industries Ltd. and Isuzu Motors LTD. and producing autos and LDTs at one plant in Indiana; and AutoAlliance International Inc., jointly owned by Ford and Mazda and producing autos at one plant in Michigan.

Toxics Release Inventory

Description and Guidelines for Use

The Toxics Release Inventory (TRI) was the most extensively used data source in this document. TRI data were compiled both for the assembly plants and for other TRI reporters located in the same areas. This data source is accessible to the general public, is widely cited and used, provides a multi-media perspective on the reporting facilities and covers many toxic pollutants.

The Toxics Release Inventory is mandated by the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, which requires certain manufacturing facilities to report their annual environmental releases (routine and accidental) of over 330 chemicals and chemical categories. Affected facilities are those with ten or more employees that manufacture or process more than 25,000 pounds or use more than 10,000 pounds of a TRI chemical in the calendar year.

In addition, affected facilities must report transfers of these chemicals off-site for energy recovery, recycling, treatment, and disposal. Treatment includes transferring wastewater for treatment at Publicly Owned Treatment Works (POTWs). It is important to remember that off-site transfers do not necessarily represent entry of the chemical into the environment, either in the assembly plant community or elsewhere.

The TRI data base is constructed to allow users to sort the data by chemical, plant or specified geographic area. The work group used this latter capability to collect data on releases from all reporting sources within a three mile radius of each assembly plant, to help put the assembly plant's contribution to local TRI releases in context.

The following characteristics of the TRI data should be considered when comparing data across individual reporters and assessing trends over time:

- The data may be based on best engineering estimates, as well as on actual measurement of releases. Sometimes, engineering estimates are the only way to determine a release or transfer amount. Methods used to estimate releases and transfers may differ across facilities and may change over time.

- Some otherwise subject facilities need not report to the TRI if they do not meet the various reporting thresholds. Other potential sources of TRI releases in a given area that TRI does not cover include many other industrial, commercial and institutional facilities such as power plants, airports, transportation companies, construction

companies, laboratories, agriculture and municipal landfills.[12] Federal facilities were required to report starting in 1995, and therefore were not included in the data for earlier years.

- The chemicals listed under TRI have changed over time, and chemical coverage was greatly expanded for the 1995 reporting year, which this report does not include. These changes require adjustments when assessing trends in releases and transfers, to ensure a consistent basis over time. Changes in the coverage of chemicals reported by assembly plants between 1991 and 1994 are discussed in Appendix D. Changes in reporting requirements were also required by the Pollution Prevention Act of 1990, as described in Appendix D.

- TRI reports show only total annual releases and transfers of chemicals. Information on variations in chemical release rates over a shorter than annual timeframe is not provided by TRI.

- The chemicals listed under the TRI exhibit varying levels and types of toxicity, and their impacts will depend greatly on the level, duration, frequency, physical form and route of exposure. In addition, some chemicals may present more risk when present in one environmental medium than in another (e.g., air versus water).

- Many of the TRI chemicals reported by assembly plants are volatile organic chemicals and are included in VOC data described below. Not all TRI chemicals are VOCs and not all VOCs are listed as TRI chemicals. However, the two datasets overlap, and should not be summed.

- Because the TRI data base fails to cover all sources of releases and all compounds, considering only TRI data for a given community may mislead as to the relative contribution of auto assembly plants and their neighboring TRI facilities to the area's total releases.

Data reported under TSCA Section 8, which provides information on source reduction and recycling of TRI chemicals, were not used. These data are incomplete, since reporting is not mandatory, and inconsistent across facilities, since each facility chooses its own basis for reporting production ratios.

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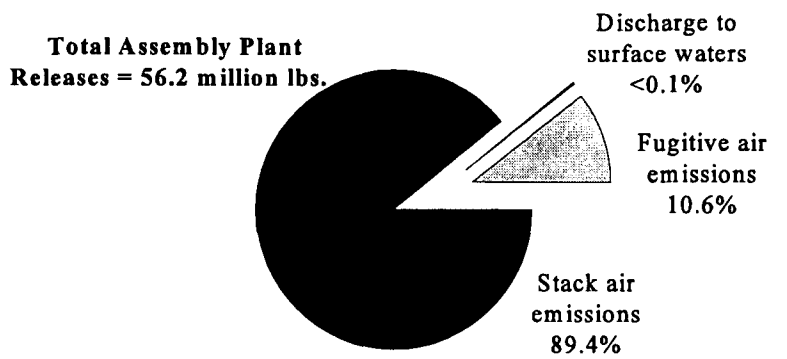
[12] In 1996, EPA proposed to expand the TRI reporting requirements to include selected non-manufacturing sectors.

Summary of Data

1994 Snapshot

In 1994, the largest portion of the TRI chemicals released by assembly plants were emitted to the air (56.2 million lbs.), of which 50.2 million lbs. (89.4 percent of total releases) were emissions from stacks (point source) and 6.0 million lbs. (10.6 percent of total releases) were fugitive emissions (from sources other than stacks). Direct discharges to surface waters represented less than 0.1 percent of total TRI releases. There was no direct on-site disposal to land or underground injection of TRI chemicals by assembly plants. (See Figure I-1)

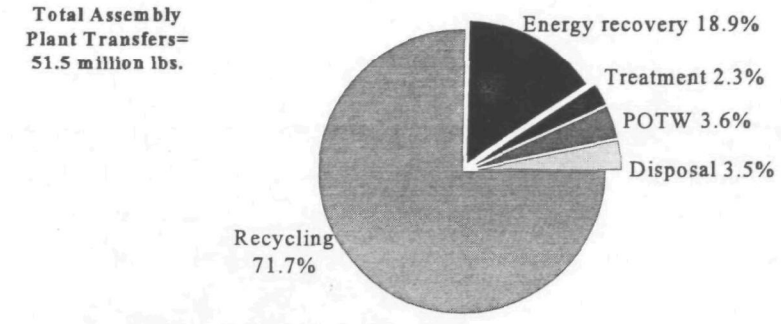
Figure I-1
1994 TRI RELEASES FROM AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY TYPE OF RELEASE



Source: Part II, pages II-18-19.

Transfers of TRI chemicals off-site, including discharges to publicly-owned treatment works (POTWs), were primarily for materials recycling. Transfers for recycling (38.8 million lbs.) accounted for 72 percent of total transfers and transfers for energy recovery (7.9 million lbs.) accounted for another 19 percent of total transfers. POTW and other treatment and disposal together accounted for 9 percent of total transfers off-site. (See Figure I-2)

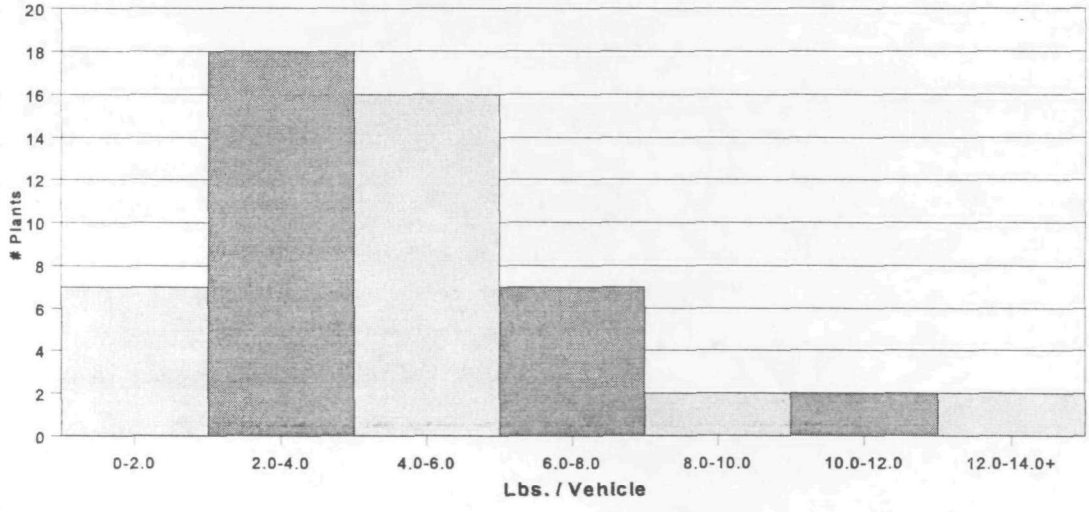
Figure I-2
1994 TRI TRANSFERS FROM AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY TYPE OF TRANSFER



Source: Part II, pages II-18-19.

TRI air emissions per vehicle produced in 1994 show substantial variation across plants. (See Figure I-3). Auto assembly plants emitted an average of 4.8 lbs. per vehicle produced (with a range of 0.9 to 11.9 lbs. per vehicle), and light duty truck plants emitted an average of 4.6 lbs. per vehicle produced (with a range of .9 to 14.1 lbs.). Plants producing both automobiles and light duty trucks emitted an average of 4.5 lbs. per vehicle (with a range of 1.7 to 6.4 lbs.) Differences in emissions

Figure I-3
DISTRIBUTION OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY TRI AIR EMISSIONS PER VEHICLE PRODUCED, 1994



Source: Part II, pages II-4-11.

per vehicle among plants may be due to production of different sizes and configuration of vehicles (requiring different amounts and types of paint), variations in product mix, and variations in production technologies (e.g., painting methods), use of emission controls, and pollution prevention efforts.

Tables I-5 and I-6 show the quantities of the top ten TRI chemicals released (to air or surface waters) by assembly plants in 1994, and the top ten TRI chemicals transferred off-site by assembly plants for POTW treatment, energy recovery, recycling, other treatment or disposal, respectively. The top 10 chemicals or chemical groups account for 97 percent of total assembly plant releases and 89 percent of total assembly plant transfers of TRI chemicals. All but one of the top 10 chemicals are considered volatile organic chemicals, and are therefore also included in the VOC data reported below.

Table I-5
TRI CHEMICALS RELEASES FROM AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS, 1994 (lbs. and percent of total)

TRI Chemical	Fugitive Air Emissions	Stack Air Emissions	Water	Total Releases	Percent of Assembly Plant TRI Releases
XYLENE (MIXED ISOMERS)	1,652,342	19,521,652	0	21,173,994	37.7%
GLYCOL ETHERS	616,448	6,683,627	10	7,300,085	13.0%
METHYL ISOBUTYL KETONE	519,594	6,475,559	10	6,995,163	12.4%
N-BUTYL ALCOHOL	182,014	4,478,177	0	4,660,191	8.3%
TOLUENE	655,728	3,103,035	0	3,758,763	6.7%
ETHYLBENZENE	224,004	3,224,177	0	3,448,181	6.1%
METHANOL	373,443	2,431,971	0	2,805,414	5.0%
1.2.4-TRIMETHYL-BENZENE	221,011	1,875,614	0	2,096,625	3.7%
METHYL ETHYL KETONE	668,648	1,082,732	0	1,751,380	3.1%
1.1.1-TRICHLORO-ETHANE	482,093	239,826	0	721,919	1.3%
All Others	371,426	1,130,218	9,842	1,511,486	2.7%
Total-All Assembly Plant Releases	**5,966,751**	**50,246,888**	**9,862**	**56,223,451**	**100.0%**

Source: Part II, p. II-3 and Part III profiles.

Table I-6
TRI CHEMICALS TRANSFERRED FROM AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS, 1994 (lbs. and percent of total)

Chemical	POTW	Energy Recovery	Recycling	Treatment	Disposal	Total Transfers	Percent of Total Assembly Plant Transfers
XYLENE (MIXED ISOMERS)	2,791	4,226,933	15,657,528	141,542	346,397	20,375,191	39.5%
METHYL ISOBUTYL KETONE	21,491	707,051	9,451,839	15,732	8,650	10,204,763	19.8%
ETHYL-BENZENE	416	815,571	3,481,715	3,291	8,783	4,309,776	8.4%
GLYCOL ETHERS	1,602,985	210,415	554,290	66,541	53,255	2,487,486	4.8%
TOLUENE	862	257,719	1,898,809	95,571	9,227	2,262,188	4.4%
METHYL ETHYL KETONE	982	197,074	1,371,619	23,424	1,259	1,594,358	3.1%
MANGANESE	0	0	1,502,000	0	39,180	1,541,180	3.0%
N-BUTYL ALCOHOL	12,118	269,441	986,797	140,506	69,011	1,477,873	2.9%
METHANOL	18,273	373,667	372,319	38,936	59,259	862,454	1.7%
1,2,4-TRI-METHYL-BENZENE	1,216	196,401	602,226	6,237	609	806,689	1.6%
All Others	180,197	613,817	2,901,428	680,002	1,244,021	5,619,465	10.9%
Total-All Assembly Plants	**1,841,331**	**7,868,089**	**38,780,570**	**1,211,782**	**1,839,651**	**51,541,423**	**100.0%**

Source: Part II, p. II-3 and Part III profiles.

TRI Trends 1991-1994

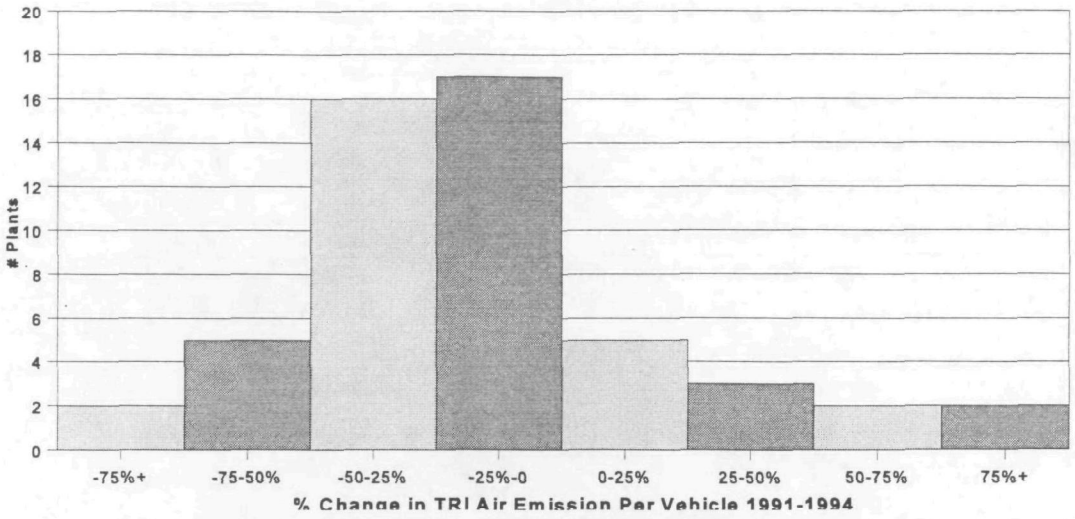
TRI data reported in Parts II and III show all TRI chemicals reported in each year, including chemicals that were subsequently delisted. All TRI trend analyses in this section incorporate adjusted TRI data that reflect a common list of TRI chemicals. That is, chemicals added or removed from the required TRI reporting list since 1991 are not included in these analyses. For assembly plants, the only relevant changes in the coverage of chemicals were for acetone and butyl benzyl phthalate, which were deleted from the list of TRI chemicals for the 1994 reporting year. These two chemicals have been eliminated from the data used to calculate changes between 1991 and 1994.

Total TRI releases from the 56 assembly plants operating increased by 13.7 percent between 1991 and 1994. Over the same period, vehicle production increased by 44 percent, resulting in a 21 percent decrease in total TRI releases per vehicle produced.

Total transfers of TRI chemicals from assembly plants to off-site locations increased 13 percent between 1991 and 1994 in the aggregate (45.6 million lbs. in 1991 and 51.5 million lbs. in 1994), after increasing in 1992 and decreasing in 1993 and 1994 (See Page II-3). With the increase in vehicle production, transfers per vehicle declined by 21 percent between 1991 and 1994.

Between 1991 and 1994, 40 plants reduced TRI releases per vehicle produced, and 11 plants increased average TRI releases per vehicle produced. Figure I-4 shows the distribution of percentage changes in TRI air emissions per vehicle between 1991 and 1994.

Figure I-4
DISTRIBUTION OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY PERCENTAGE CHANGE IN TRI AIR EMISSIONS PER VEHICLE PRODUCED, 1991-1994



Source: Part II, pages II-1-11.

Table I-7 shows the numbers of assembly plants increasing both releases and transfers, decreasing both releases and transfers, and increasing one while decreasing the other -- both in total and on a per vehicle basis. This table shows that a substantial portion of the assembly plants (29 of 53) reduced both TRI releases and TRI transfers on a per vehicle basis between 1991 and 1994. Increases in transfers may be the result of more material recycling or energy recovery.

Table I-7
NUMBER OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY DIRECTION OF CHANGE IN TRI RELEASES AND TRANSFERS 1991-1994

	Total	Per Vehicle
Increased both releases and transfers	21	6
Decreased both releases and transfers	13	29
Increased releases, decreased transfers	13	7
Decreased releases, increased transfers	8	11
Total	**55**	53

Source: Part II p. II-4-11.

RCRA Biennial Report System (BRS)

Description and Guidelines for Use

The Biennial Report is implemented under the Resource Conservation Recovery Act of 1976, as amended (RCRA). All non-household large-quantity generators (producers) of hazardous wastes and hazardous waste treatment, storage and disposal facilities (TSDFs) must submit a report every other year on the quantities of hazardous waste generated and the ways in which the wastes are managed. The Biennial Report requirements began in 1981 and the RCRA waste minimization program dates back to 1985. This CSI package contains BRS data from each of the assembly plants only for the reporting years 1991 and 1993 (the latest year for which data were available to the work group).

BRS data cannot be compared with TRI data because they measure different things. The BRS data represent whole waste streams, which may include mixtures of water and non-hazardous components as well as hazardous constituents. TRI data, by contrast, measure only the specific chemicals that are contained in waste, emitted to air, or otherwise released or transferred.

The following factors should be considered when using the BRS data:

- BRS covers wastes defined as "hazardous" by federal regulation. The scope of the federal hazardous waste definition has evolved over time, which complicates analysis of trends in waste generation.[13] However, no major changes in the hazardous waste definition occurred between 1991 and 1993 that affected the quantities reported by assembly plants.

- Generators who produce small quantities of hazardous waste per year (1000 kg. (2,200 lbs.) or less generated per month)[14] need not submit reports. In addition, wastes generated by households are excluded from the hazardous waste definition.[15]

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[13] Additional wastes were defined as hazardous by the expanded toxicity characteristic (effective in September 1990) and by specific waste listings. EPA has also proposed a rule that may exempt certain wastes containing very low concentrations of toxic constituents from the hazardous wastes requirements in the future (the "Hazardous Waste Identification Rule.").

[14] Lower reporting quantity limits apply for a subcategory of hazardous wastes regulated as "acutely hazardous wastes."

[15] Household and small quantity generator waste may end up in the local municipal landfill.

Therefore, the BRS data base does not capture all the hazardous wastes that may be generated or managed in a particular area.

- States differ in how they define hazardous waste and how they treat recycled wastes and small quantity generators. RCRA requires states to have programs at least as stringent as the federal requirements, but some states go further and define additional wastes as hazardous. In addition, states differ in whether they require reporting on hazardous wastewaters regulated under the Clean Water Act. In general, the national database excludes wastes reported to the BRS that are regulated only by states. However, some variation in reporting practices across states may remain, especially regarding wastewaters managed in exempt units. Therefore, data on quantities generated may not be comparable for plants located in different states.

- Reported wastes can vary greatly in chemical composition, even when from the same source. The waste code "D008," for example, refers to wastes that contain lead above a certain concentration. The waste may be highly-dilute with low concentrations of lead, or a sludge with much higher lead content. Distinguishing wastes by physical form (e.g., aqueous versus non-aqueous) provides some insight into their different characteristics, but there is no way to assess variations in concentrations directly.

- The quantities of waste generated may represent continuing generation associated with vehicle assembly or a one-time event resulting in unusual quantities of waste. These events could include cleanup of a contaminated site or spill, or the dismantling of a plant or its equipment, for example. The Part III Plant-Community Profiles provide information on the source of wastes at each plant. Remediation wastes were not included in the analysis of changes between 1991 and 1993 reported below.

Summary of Data

1993 Snapshot

As noted above, states vary in their requirements for reporting RCRA hazardous wastewaters treated in exempt tanks and discharged under Clean Water Act provisions. Some states require that these wastewaters be reported as hazardous wastes in the Biennial Report, while others do not require that these wastes be included. This variation in reporting practices for these large quantity wastes overstates differences among assembly plants in the amount of hazardous waste generated. This section therefore distinguishes between aqueous and non-aqueous wastes, and calculates normalized quantities (per vehicle produced) based only on non-aqueous wastes.

A total of 190,199 tons of RCRA hazardous waste was reported as generated by assembly plants in 1993. Of this total, 129,361 tons (68 percent) was aqueous waste and 61,838 tons (32 percent) was non-aqueous waste.

The following two tables illustrate the distribution of 1993 waste quantities generated by source (e.g., cleaning/degreasing, surface preparation and finishing, and remediation derived waste) and physical form (liquids, solids, sludges - organic and inorganic). Table I-8 shows that surface preparation/finishing and cleaning/degreasing account for 56 percent of all assembly plant hazardous, non-aqueous waste and 87 percent of aqueous wastes. Similarly, two physical form categories account for the majority of hazardous waste. Table I-9 shows that 86 percent of hazardous waste generated by assembly plants is liquid waste (inorganic and organic, aqueous and non-aqueous).

Table I-8

RCRA HAZARDOUS WASTES GENERATED BY AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS, 1993 BY SOURCE CATEGORY

Waste Source	Aqueous Wastes (tons)	Percent of Total Assembly Plant Aqueous Wastes	Non-Aqueous Wastes (tons)	Percent of Total Assembly Plant Non-Aqueous Wastes
Surface Preparation and Finishing	63,040	48.7	25,718	41.6
Cleaning and Degreasing	49,083	37.9	8,850	14.3
Processes Other Than Surface Preparation	0	0.0	5,240	8.5
Production or Service Derived One-Time and Intermittent Processes	388	0.3	3,003	4.9
Pollution Control or Waste Treatment Processes	115	0.1	3,104	5.0
Remediation Derived Waste	15	0.0	11	0.0
Other Processes/Source Not Reported	16,721	12.9	15,912	25.7
Totals - All Assembly Plants	**129,361**	**100.0**	**61,838**	**100.0**

Source: Part III profiles.

Table I-9

RCRA HAZARDOUS WASTES GENERATED BY AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS, 1993 BY PHYSICAL FORM

Physical Form	Aqueous Wastes (tons)	Percent of Total Assembly Plant Aqueous Wastes	Non-Aqueous Wastes (tons)	Percent of Total Assembly Plant Non-Aqueous Wastes
Inorganic Liquids	129,361	100.0	29	0.0
Organic Liquids	0	0.0	34,141	55.2
Inorganic Solids	0	0.0	12,748	20.6
Inorganic Sludges	0	0.0	2,643	4.3
Organic Sludges	0	0.0	1,448	2.3
Organic Solids	0	0.0	1,131	1.8
Lab Packs	0	0.0	9	0.0
Form Not Reported	0	0.0	9,689	15.7
Total - All Assembly Plants	**129,361**	**100.0**	**61,838**	**100.0**

Source: Part III profiles.

As shown in Part II (page II-25) hazardous wastes exhibiting the toxicity characteristic for metals accounted for the largest quantities (66 percent of the total). Of these wastes, 88 percent were aqueous wastes either treated on-site or discharged to publicly owned treatment works (POTWs) for treatment. Another 10 percent of the toxic metal-bearing wastes were stabilized prior to disposal. Specific solvent wastes accounted for 18 percent of the total generated -- of which 62 percent was treated to recover solvents and another 14 percent was burned for energy recovery or used to produce fuels.

Most RCRA hazardous waste quantities managed in 1993 were treated on-site using aqueous treatment methods (58 percent), treated to recover solvents (14 percent), discharged to POTWs (9 percent) or stabilized prior to disposal (7 percent). Table I-10 shows the methods used to manage RCRA hazardous wastes generated by assembly plants in 1993.

Table I-10

RCRA HAZARDOUS WASTES MANAGED BY AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS, 1993 BY MANAGEMENT METHOD

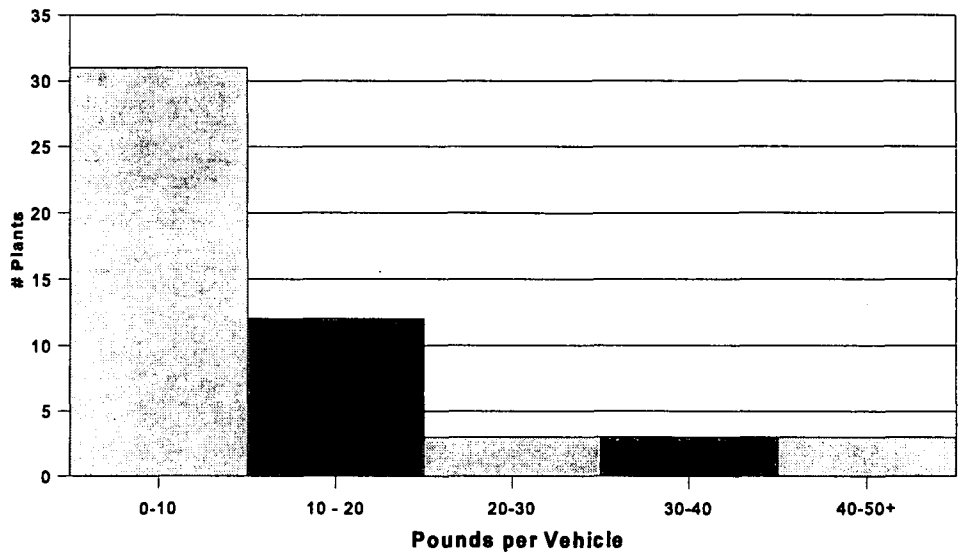
Management System Type	Aqueous Wastes (tons)	Percent of Total Assembly Plant Aqueous Wastes	Non-Aqueous Wastes (tons)	Percent of Total Assembly Plant Non-Aqueous Wastes
Aqueous Treatment	110,847	85.7	1,231	2.0
Discharge to sewer/POTW	16,697	12.9	0	0.0
Solvents Recovery	115	0.1	26,994	43.7
Metals & Other Recovery	3	0.0	142	0.2
Stabilization	330	0.3	12,294	19.9
Fuel Blending	5	0.0	4,483	7.2
Incineration	53	0.0	3,220	5.2
Energy Recovery	3	0.0	1,965	3.2
Other Treatment	1,139	0.9	903	1.5
Landfill Disposal	0	0.0	2,904	4.7
Transfer Facility	1	0.0	185	0.3
Method Not Reported	168	0.1	7,517	12.2
Total - All Assembly Plants	**129,361**	**100.0**	**61,838**	**100.0**

Source: Part III profiles.

Assembly plants vary widely in the quantity of non-aqueous RCRA hazardous waste generated per vehicle produced, as shown for 1993 in Figure I-5. (Remediation wastes are excluded from this calculation.) Non-aqueous waste quantities per vehicle produced ranged from 0.4 to 279.7 lbs., with an average for all assembly plants of 12.0 lbs. of waste per vehicle (and a average plant generation rate of 17.8 lbs. of waste per vehicle)[16].

[16] The first average is based on total assembly plant waste quantities and production. The "average plant generation rate" is the average of individual plant waste generation rates.

Figure I-5
DISTRIBUTION OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY RCRA HAZARDOUS NON-AQUEOUS WASTE GENERATED PER VEHICLE PRODUCED, 1993



Source: Part III profiles.

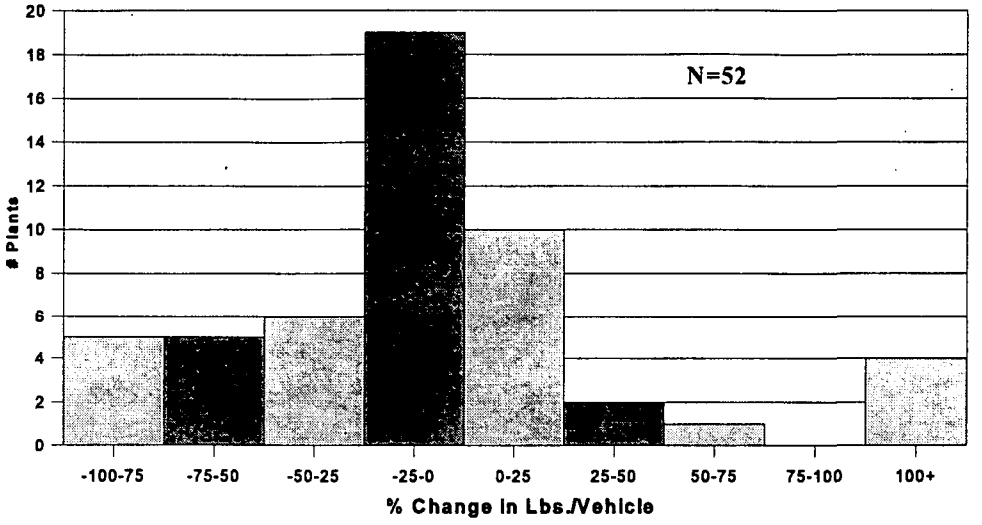
Hazardous Waste Changes 1991-1993

Changes in RCRA hazardous waste generation between 1991 and 1993 are affected by periodic generation of remediation wastes as well as by changes in waste generation from production activities. To focus on changes in production-related wastes on a consistent basis, this section excludes remediation wastes and aqueous wastes in calculating changes between 1991 and 1993 in total and per vehicle quantities generated.

The overall quantity of RCRA hazardous waste generated by assembly plants increased by 43 percent between 1991 and 1993. Thirty-one plants generated more RCRA hazardous waste in 1993 than in 1991, and 21 plants either generated the same amount or reduced generation.

A comparison of non-aqueous waste per vehicle produced suggests slightly different trends. The national average increased four percent (11.4 lbs. to 12.0 lbs.), while the average plant generation rate decreased 39 percent (29.2 lbs. in 1991 to 17.8 lbs. in 1993). Only 17 plants show an increase in non-aqueous waste per vehicle produced, while 35 plants reduced their waste per vehicle produced. Results normalized for production levels are shown in Figure I-6.

Figure I-6
DISTRIBUTION OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY PERCENTAGE CHANGE IN RCRA HAZARDOUS NON-AQUEOUS WASTE GENERATED PER VEHICLE, 1991-1993



Source: Part II p. II-4-11 and II-20.

VOC and NOx Emissions Data

Description

The initial source reviewed for emissions data was the Aerometric Information Retrieval System (AIRS). AIRS is a national repository for air pollution data submitted by state and local agencies, as required under the Clean Air Act and EPA grant provisions and guidelines. The AIRS facility subsystem includes data on emissions from individual major sources (those with the potential to emit more than 100 tons per year of any criteria pollutant other than lead or CO, for which the limits are 5 tons a year or 1,000 tons a year, respectively). The data represent actual emissions (as opposed to potential or allowable).[17] The facility subsystem also contains regulatory compliance and permit tracking data. Some but not all data in AIRS are available to the public.

The AIRS data were found to be incomplete and outdated in many instances, and had to be supplemented by requesting data from state agencies and the companies. The data reported in this

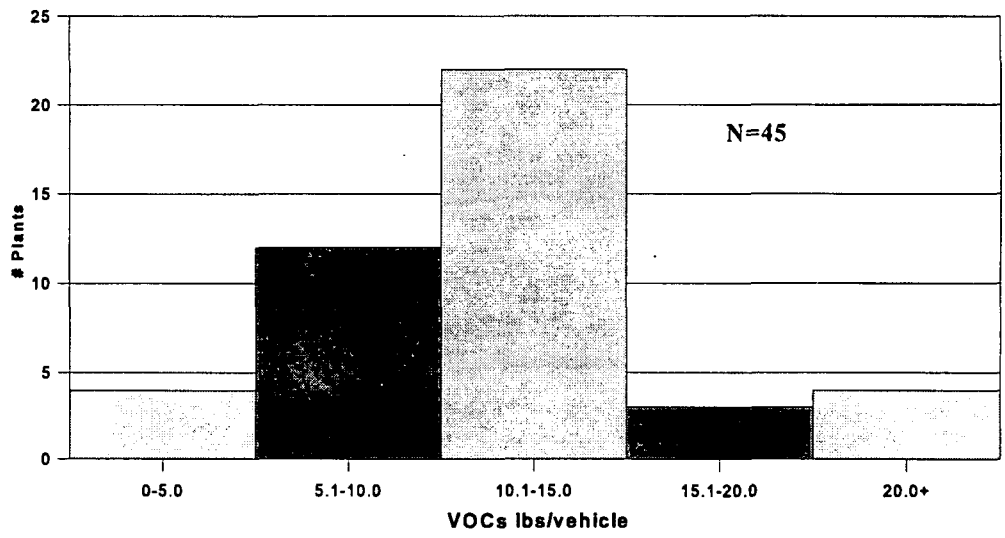
[17] The criteria air pollutants are PM_{10}, NO_2, O_3, CO, SO_2 and lead (Pb).

section are those obtained from state offices and the companies. The data represent actual or estimated emissions, rather than allowable emissions. The methods used to calculate emissions vary. In some cases, facilities reported emissions themselves, while in other cases state agencies calculated emissions based on production levels reported by the facilities and estimated emission factors.

Summary of Data

Figure I-7 shows the distribution of assembly plants by pounds of VOCs emitted per vehicle produced in 1994. This distribution includes the 45 plants for which 1994 VOC emissions data were available.

Figure I-7
DISTRIBUTION OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY VOC EMISSIONS PER VEHICLE PRODUCED, 1994



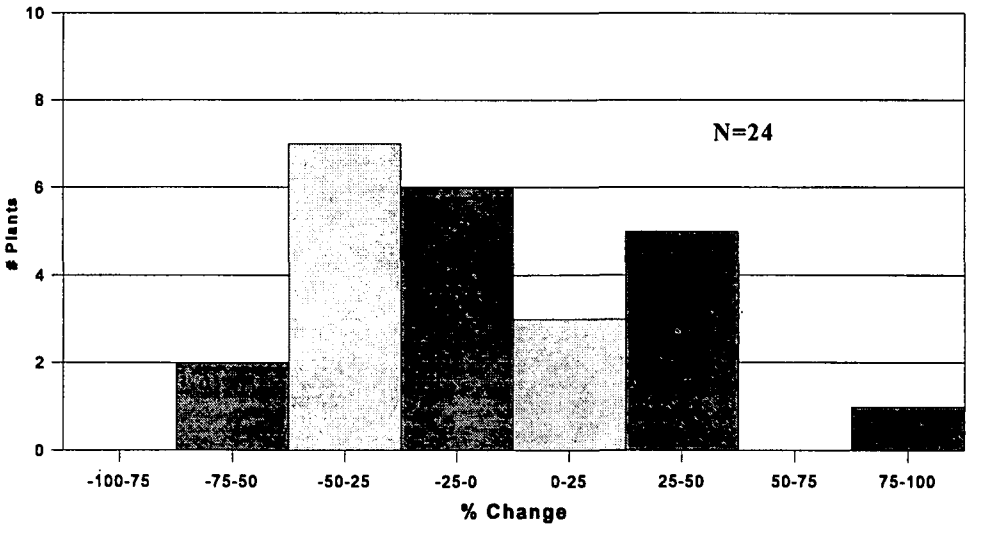
Source: Part II p. II-1 and II-20.

The measures used to report emissions vary from state to state. The per vehicle comparison in Figure I-7 includes only plants reporting volatile organic compounds (VOCs), and not other measures such as volatile organic materials (VOMs). There may be other inconsistencies in state reporting requirements that limit the reliability of comparisons across plants.[18]

[18] For example, Delaware makes adjustments for "rule effectiveness" that affect the comparability of its data with data reported in other states.

Of the 32 plants for which data are available for both 1990 and 1994, VOC or VOM emissions increased at 18 plants and decreased at 14 plants over that time period. Figure I-8 shows the distribution of assembly plants by the percentage change in VOCs emitted per vehicle between 1991 and 1994. Data on VOC emissions for both 1991 and 1994 were available only for 24 plants.[19] Of the 24 plants, all but eight reduced the level of VOCs emitted per vehicle between 1991 and 1994 -- with two reducing per vehicle VOC emissions by more than 50 percent.

Figure I-8
DISTRIBUTION OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY PERCENTAGE CHANGE IN VOC EMISSIONS PER VEHICLE PRODUCED, 1991-1994



Source: Part II p. II-4-11 and II-20.

Similarly, for the 30 plants for which data are available for both 1990 and 1994, NOx or NO2 emissions increased at 19 plants and decreased at 11 plants over that time period. On a per vehicle basis, NOx or NO2 emissions increased at 9 plants and decreased at 15 plants between 1991 and 1994. (Lack of 1991 NOx/NO2 data made this comparison possible only for 24 plants.)

[19] Data for an additional plant were excluded from this comparison because the plant was not fully-operational in 1991.

Table I-11 compares 1994 VOC emissions for plants in locations with different ozone attainment status in 1994. The average emissions per plant and per vehicle produced show relatively small variations across attainment status categories, when compared with the substantial variation in these averages within the attainment status categories.

Table I-11

VOC EMISSIONS FROM AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY OZONE ATTAINMENT STATUS, 1994

	Attainment	Maintenance/ Transitional	Nonattainment (marginal/ moderate)	Nonattainment (serious/severe)	TOTAL
No. Assembly Plants	16	3	28	9	56
No. with 1994 VOC Data Available	10	3	20	8	41
Total 1994 VOC Emissions (lbs.)	24,360,000	8,598,488	51,829,300	17,198,800	
Average 1994 VOC Emissions per Plant (lbs.)	2,436,000 *(835,160-5,214,000)*	2,866,162 *(2,122,000-3,479,218)*	2,591,465 *(16,122-4,454,164)*	2,149,850 *(1,407,860-3,382,000)*	
Average 1994 VOC Emissions per Vehicle Produced (lbs.)	13.8 *(4.0-42.0)*	16.3 *(12.9-20.7)*	10.8 *(0.5-21.7)*	11.5 *(8.8-16.9)*	

Source: Part II p. II-20 and II-22.

Releases to Surface Waters and POTWs

Data from the Permit Compliance System (PCS) suggest that 24 of the 56 plants have or have had NPDES permits for discharges to surface waters. The companies noted that the majority of these permits were for stormwater discharges, rather than for discharge of process wastewaters. In some cases, these permits may no longer be in effect, since some PCS records show permit expiration dates that have passed. Alternatively, permit renewals may be pending. The PCS database does not report the status of each permit. TRI data reported in Part II suggest that there has been a decrease between 1991 and 1994 in discharges to surface waters, at least of the chemicals reported in TRI. In 1991, 16 assembly plants discharged 53,566 lbs. of TRI chemicals to surface waters. In 1994, six plants reported discharges of 9,862 lbs. of TRI chemicals to surface waters.

Ambient Air Quality Attainment Status

Of the 56 plants, 40 were located in areas that were not in attainment with the National Ambient Air Quality Standard (NAAQS) for ozone as of 1994. (See Page II-10.) Of these, two were in a serious nonattainment area, seven were in severe nonattainment areas, and 25 were in moderate nonattainment areas. Another three plants were in marginal areas, two were in transitional areas, and one plant was in a maintenance area. Sixteen assembly plants are located in areas that were in attainment with the ozone standard or were not classified.[20] Of the 39 plants located in nonattainment areas in 1994, 20 are located in areas that had been upgraded to an attainment classification for ozone by 1996, however.

Community Economic and Demographic Data

Description

The work group obtained community economic and demographic data from U.S. Census sources. Data were collected at the county levels, for census blocks, and for fixed areas around each plant (e.g., a circle of 3-mile radius centered on the plant).

Counties are the most readily-available reporting unit, but they vary greatly in size and shape. Depending on the size of the county and the plant's location within it (in its center or at a county boundary), county-level data will be more or less reliable in representing the characteristics of the area around a plant.[21]

Area-wide averages for demographic characteristics at any level of reporting may be misleading, depending on the specific location of a plant. For example, a plant located next to a major airport in a downtown area may appear to be located in a rural area based solely on the population density of a three-mile radius circle around the plant. This document, therefore, uses a variety of data types in combination with maps to provide a more reliable picture of assembly plant community characteristics.

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[20] See Appendix H for definitions of the attainment categories.

[21] Counties where assembly plants are located range from 103 to 1,184 sq. miles in area. (Baltimore MD is an independent city covering 81 sq. miles. Norfolk VA is an independent city covering 54 sq. miles.) As a basis for comparison, a one-mile radius circle around the plant encompasses a little more than three square miles, and a three-mile radius circle includes 28 square miles.

Caution should be used when interpreting the demographic and economic data. In particular, data should not be assumed to reflect direct cause-and-effect relationships. Employment statistics, community resources and general social well-being in a local area may be influenced by a plant's operations and economic performance, but they reflect a host of other economic and political forces as well, both national and local.

Summary of Data

Fifty-one of the 56 plants are located in Metropolitan Statistical Areas (MSAs).[22] At the county level, average 1994 county population densities (population per square mile) for the 56 plants range from 81 (for the Honda plant in Marysville OH) to 5,436 (Chicago, location of a Ford plant). Average 1990 population densities (population per square mile) within a three mile radius of the plant range from 35 (for the Honda plant in Marysville OH) to 35,036 (for a General Motors plant in Lansing MI). (See Figure I-9)

Assembly plants represent a significant portion of local manufacturing employment in some assembly plant communities. Of the 40 counties where assembly plants are located, the plants accounted for ten percent or more of total county manufacturing employment in 26 of the counties, and for 25 percent or more in 14 of the counties.[23] The contribution of individual assembly plants to local manufacturing employment varies widely, from less than one percent (for Ford's plant in Chicago) to approximately 99 percent (for Toyota in Georgetown KY), reflecting the varied sizes and economic characteristics of assembly plant communities.

Most assembly plant communities enjoy lower civilian unemployment rates than the nation as a whole: 39 of the 56 assembly plants are located in counties with unemployment less than the 1994 national average of 6.1 percent.

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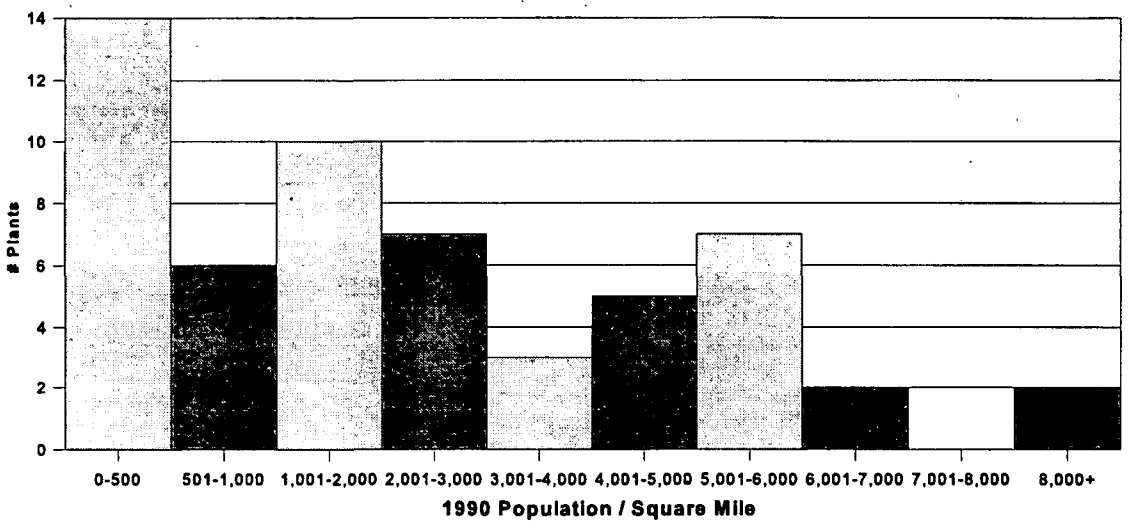
[22] Metropolitan Statistical Areas (MSAs) (formerly known as SMSAs) are geographic units defined by the Census Bureau to include large Central Cities together with their surrounding "socially and economically integrated" county or counties. MSAs include whole counties and may cross state boundaries.

[23] Employment data were not available for three assembly plants.

Figure I-9
DISTRIBUTION OF AUTOMOBILE AND LIGHT DUTY TRUCK ASSEMBLY PLANTS BY POPULATION DENSITY IN 3-MILE RADIUS



Source: Part II p. II-32.

Considering just the three-mile area surrounding the plants (based on 1990 Census data):

- The 3-mile area surrounding 31 assembly plants had minority population percentages lower than the average for their state, and the areas surrounding 35 plants had minority population percentages lower than the national average of 19.7 percent.

- The 3-mile area surrounding 39 assembly plants had percentages of residents living below the poverty line that were lower than the average poverty rate for their state, and the areas around 37 plants had poverty rates below the national average of 20 percent.

- The 3-mile areas surrounding 33 assembly plants had high school completion rates higher than the average completion rate in their state, and 32 had high school completion rates higher than the national average of 25 percent.

Data on other demographic characteristics of assembly plant communities were collected only at the county level. The county-level data show that:

- Thirty-one assembly plants are in counties that had a percentage of their population under the age of five that was equal to or less than the 1990 national average, and 25

assembly plants are located in counties with higher proportions of their population under age five than the 1990 national average.

- Forty assembly plants are in counties that had an elderly percentage (over 75 years old) equal to or lower than the 1990 national average, and 16 assembly plants are in counties that had a higher-than-average elderly percent.

- Median household income in 1989 exceeded the national average in 24 of the counties where assembly plants are located and was below the national average in 16 of the assembly plant counties.

Part II:

Industry-Wide Data

July 15, 1997

U.S. AUTO AND LIGHT DUTY TRUCK ASSEMBLY PLANTS

7/15/97

	NAME	STATE, CITY	TYPE	PRODUCT NAMES	1994 PRODUCTION*	1994 EMPLOYMENT**	
1	NUMMI	CA, Fremont	Both	Toyota Tacoma pickup, Geo Prizm, Toyota Corolla	363,083	4,250	1
2	Chrysler Corp.	DE, Newark	Auto	Dodge Intrepid, Spirit, Chrysler Lebaron, Concorde, Plymouth Acclaim	220,947	3,726	2
3	General Motors	DE, Wilmington	Auto	Chevrolet Corsica, Beretta	230,925	3,104	3
4	General Motors	GA, Doraville	Auto	Olds Cutlass Supreme	124,395	2,713	4
5	Ford Motor Co.	GA, Hapeville	Auto	Ford Taurus, Mercury Sable	275,222	2,696	5
6	Chrysler Corp.	IL, Belvidere	Auto	Dodge Neon, Plymouth Neon	242,806	4,063	6
7	Ford Motor Co.	IL, Chicago	Auto	Ford Taurus, Mercury Sable	277,770	2,773	7
8	Diamond Star	IL, Normal	Auto	Avenger, Galant, Eclipse, Eagle Talon, Plymouth Laser	168,726	3,200	8
9	General Motors	IN, Fort Wayne	Lt. Trucks	Chevrolet C/K pickup, GMC Sierra	228,728	2,830	9
10	Subaru-Isuzu	IN, Lafayette	Both	Honda Passport, Rodeo, Subaru Legacy, Isuzu pickup	154,801	1,970	10
11	General Motors	KS, Kansas City	Auto	Pontiac Grand Prix, Olds Cutlass Supreme	138,120	3,435	11
12	General Motors	KY, Bowling Green	Auto	Chevrolet Corvette	25,390	1,051	12
13	Toyota Motor Mfg.	KY, Georgetown	Auto	Avalon, Camry	284,765	6,000	13
14	Ford Motor Co.	KY, Louisville	Trucks	Ford F series pickup/heavy trucks	128,000	3,237	14
15	Ford Motor Co.	KY, Louisville	Lt. Trucks	Ford Explorer, Ranger, Mazda Navajo	371,288	3,682	15
16	General Motors	LA, Shreveport	Lt. Trucks	Chev S-10, GMC Sonoma pickup	206,400	2,793	16
17	General Motors	MD, Baltimore	Lt. Trucks	GMC Safari, Astro	216,036	3,836	17
18	Ford Motor Co.	MI, Dearborn	Auto	Ford Mustang	199,048	2,245	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Lt. Trucks	Jeep Grand Cherokee	262,955	4,384	19
20	General Motors	MI, Detroit	Lt. Trucks	Chevrolet Sportvan, GMC Rally Van, Chevrolet P model, GMC P model	32,863	NA	20
21	General Motors	Mi, Detroit	Auto	Cadillac Eldorado & Seville, Olds Toronado	205,578	5,083	21
22	Auto Alliance Intl.	MI, Flat Rock	Auto	Mazda MX6, 626, Ford Probe	246,991	3,800	22
23	General Motors	MI, Flint	Lt. Trucks	Chev Sportvan, GMC Rally	144,541	5,500	23
24	General Motors (Buick City)	MI, Flint	Auto	Buick LeSabre, Park Avenue, Olds 88	268,784	12,699	24
25	General Motors	MI, Lake Orion	Auto	Buick Riviera, Olds Aurora, Olds 88, 98, Pontiac Bonneville	233,227	5,557	25
26	General Motors	MI, Lansing (C)	Auto	Olds Achieva, Pontiac Grand Am, Buick Skylark	212,250	7,790	26
27	General Motors	MI, Lansing (M)	Auto	Pontiac Grand Am, Olds Achieva	206,959	NA	27
28	General Motors	MI, Pontiac	Lt. Truck	Chev S Pickup, GMC C/K Pickup	352,768	8,040	28
29	Chrysler Corp.	MI, Sterling Heights	Auto	Chrysler Cirrus, Dodge Stratus, Shadow, Plymouth Sundance	84,874	3,360	29
30	Chrysler Corp.	MI, Warren	Lt. Trucks	Dodge Dakota, Dodge full size pickup	285,536	4,218	30
31	Ford Motor Co.	MI, Wayne	Auto	Ford Escort	312,191	3,781	31
32	Ford Motor Co.	MI, Wayne	Lt. Truck	F-Series pickup, Bronco	200,312	2,063	32
33	Ford Motor Co.	MI, Wixom	Auto	Lincolon Continental, Mark VIII, TownCar	180,587	3,858	33
34	Ford Motor Co.	MN, St. Paul	Lt. Trucks	Ranger Pickup	208,325	2,063	34
35	Ford Motor Co.	MO, Claycomo	Lt. Trucks	Ford Tempo, Ford Contour, Mercury Mystique, Topaz	413,564	4,642	35
36	Chrysler Corp.	MO, St. Louis	Lt. Trucks	Dodge Gr. Caravan & C/V, Chrys. Town&Ctry, Plym. Gr. Voyager	291,539	5,874	36
37	Ford Motor Co.	MO, St. Louis	Lt. Trucks	Ford Aerostar	215,193	2,393	37
38	General Motors	MO, Wentzville	Lt. Trucks	Buick Park Avenue (van in 1995)	Not Operating	3,972	38
39	Ford Motor Co.	NJ, Edison	Lt. Trucks	Ford Ranger, Mazda B series pickup	160,714	1,704	39
40	General Motors	NJ, Linden	Lt. Trucks	Chev S pickup. Chev Blazer, GMC S pickup, GMC Jimmy	159,051	2,975	40
41	General Motors	NY, N. Tarrytown	Auto	Lumina APV, Pontiac Trans Sport, Olds Silhouette	136,522	2,521	41
42	Ford Motor Co.	OH, Avon Lake	Lt. Trucks	Mercury Villager, Nissan Quest Van	153,786	3,440	42
43	Honda	OH, E. Liberty	Auto	Honda Civic	138,119	1,800	43
44	Ford Motor Co.	OH, Lorain	Both	Ford Thunderbird, Club Wagon, Econline Vans, Mercury Cougar	456,442	4,056	44
45	General Motors	OH, Lordstown	Auto	Chevrolet Cavalier, Pontiac Sunbird	232,362	8,817	45
46	Honda (Marysville)	OH, Marysville	Auto	Honda Accord	360,591	5,300	46
47	General Motors	OH, Moraine	Lt. Trucks	Chev. Blazer, GMC Jimmy, Olds Bravada, Chev. S postal	130,239	3,627	47
48	Chrysler Corp.	OH, #1 Toledo	Lt. Trucks	Jeep Cherokee	303,957	5,410	48
49	Chrysler Corp.	OH, #2 Toledo	Lt. Trucks	Dodge Dakota, Jeep Wranger, Cherokee	141,855	***	49
50	General Motors	OK, Oklahoma	Auto	Buick Century, Olds Cutlass Ciera	268,900	4,707	50
51	BMW Manufacturing	SC, Greer	Auto	BMW 3 series	429	530 (proj)	51
52	Nissan Motor Mfg.	TN, Smyrna	Both	Altima, 200 SX, Pickup, Sentra	444,608	5,900	52
53	General Motors (Saturn)	TN, Spring Hill	Auto	Saturn Coupe, Sedan & Wagon	280,002	7,871	53
54	General Motors	TX, Arlington	Auto	Chev Caprice, Buick RoadMaster, Cadillac Fleetwood	173,923	4,193	54
55	Ford Motor Co.	VA, Norfolk	Lt. Trucks	F Series Pickup	181,840	1,802	55
56	General Motors	WI, Janesville	Lt. Trucks	GMC C/K pickup, Kodiak, Yukon, Jimmy, Suburban, Chev. Kodiak, Tahoe, Isuzu W-4	237,925	4,982	56

* 1995 Automotive News, Market Data Book; data for Chrysler provided by Chrylser

** American Automobile Manufacturers Association

? Data not available

*** Included with Toledo #1 plant production.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TRENDS IN TOTAL TRI RELEASES AND TRANSFERS BY ASSEMBLY PLANT

7/15/97

			RELEASES OF TRI CHEMICALS (lbs.)*				TRANSFERS OF TRI CHEMICALS (lbs)**				
	NAME	STATE, CITY	1991	1992	1993	1994	1991	1992	1993	1994	
1	NUMMI	CA, Fremont,	746,325	737,725	563,726	601,383	968,807	1,125,984	1,163,126	1,283,587	1
2	Chrysler Corp.	DE, Newark	670,735	748,374	931,759	652,146	477,137	719,181	1,008,194	831,879	2
3	General Motors	DE, Wilmington	628,653	674,821	826,221	1,285,570	939,974	831,582	1,575,734	1,210,152	3
4	General Motors	GA, Doraville	1,029,814	499,384	820,188	1,019,939	874,754	795,017	815,659	1,072,237	4
5	Ford Motor Co.	GA, Hapeville	990,581	1,176,174	1,157,484	1,149,031	582,960	734,149	1,122,910	1,716,549	5
6	Chrysler Corp.	IL, Belvidere	502,173	567,497	206,000	361,426	556,375	881,557	251,463	92,853	6
7	Ford Motor Co.	IL, Chicago	1,622,199	1,570,611	1,214,565	1,229,518	756,516	1,125,662	1,065,334	1,007,517	7
8	Diamond Star	IL, Normal	284,771	181,557	490,859	372,894	25,521	2,039,580	1,892,400	1,910,125	8
9	General Motors	IN, Fort Wayne	1,311,621	1,145,210	1,416,600	1,088,600	1,296,770	1,538,035	1,081,705	1,383,205	9
10	Subaru-Isuzu	IN, Lafayette	639,365	745,790	632,720	992,040	1,404,655	406,240	1,037,670	893,490	10
11	General Motors	KS, Kansas City	956,005	1,165,605	852,360	963,570	326,415	155,850	447,760	199,215	11
12	General Motors Corp.	KY, Bowling Green	301,260	202,042	265,985	148,229	390,231	194,381	192,760	134,394	12
13	Toyota Motor Mfg.	KY, Georgetown	1,208,685	1,065,915	932,500	1,022,555	4,229,175	2,554,905	2,135,150	2,930,080	13
14	Ford Motor Co.	KY, Louisville	227,893	291,060	680,193	536,194	147,226	127,233	845,222	1,446,460	14
15	Ford Motor Co.	KY, Louisville	1,866,990	1,524,519	1,602,429	1,361,095	1,637,872	1,664,445	1,829,414	1,731,105	15
16	General Motors	LA, Shreveport	1,489,720	1,645,585	898,225	1,059,295	696,743	659,730	617,065	402,070	16
17	General Motors	MD, Baltimore	903,468	704,464	819,576	679,046	539,948	512,211	1,280,883	367,856	17
18	Ford Motor Co.	MI, Dearborn	689,187	539,270	951,344	1,323,912	716,210	625,075	1,308,468	1,374,128	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	5,188	717,708	591,541	464,109	80,359	700,715	911,034	821,291	19
20	General Motors	MI, Detroit	121,996	107,755	36,136	31,077	43,660	26,749	89,313	60,321	20
21	General Motors	MI, Detroit	1,060,685	1,219,391	1,633,125	2,452,875	447,115	778,991	841,513	626,445	21
22	Auto Alliance Intl.	MI, Flat Rock	1,743,768	1,459,462	3,009,116	2,046,534	754,027	661,263	198,869	655,749	22
23	General Motors	MI, Flint	593,910	296,603	906,540	2,043,050	914,008	356,692	339,630	533,648	23
24	General Motors (Buick City)	MI, Flint	619,455	880,939	822,902	699,829	152,800	412,343	458,044	411,346	24
25	General Motors	MI, Lake Orion	1,922,642	1,851,129	1,131,503	1,178,513	1,008,647	380,830	365,541	197,514	25
26	General Motors	MI, Lansing	338,483	426,367	368,388	486,722	277,459	283,655	251,640	53,441	26
27	General Motors	MI, Lansing	784,010	1,256,000	1,308,463	1,144,409	397,670	449,958	298,192	136,316	27
28	General Motors	MI, Pontiac	1,311,604	1,397,700	1,523,625	1,076,520	1,186,791	1,684,210	1,963,515	1,135,255	28
29	Chrysler Corp.	MI, Sterling Heights	437,898	319,017	438,587	142,571	393,035	545,013	579,738	359,176	29
30	Chrysler Corp.	MI, Warren	593,523	595,445	808,791	1,072,865	1,346,944	1,280,294	1,020,758	1,337,860	30
31	Ford Motor Co.	MI, Wayne	1,201,788	384,154	548,057	968,999	846,609	798,699	866,525	926,061	31
32	Ford Motor Co.	MI, Wayne	577,224	954,457	1,733,637	2,142,449	386,605	359,847	906,320	1,444,667	32
33	Ford Motor Co.	MI, Wixom	755,305	946,531	1,191,665	1,238,158	1,853,112	1,018,518	922,390	1,172,166	33
34	Ford Motor Co.	MN, St. Paul	828,802	759,451	817,642	729,751	796,669	1,042,553	1,196,143	1,347,000	34
35	Ford Motor Co.	MO, Claycomo	1,726,251	2,871,461	2,689,968	2,337,617	1,429,191	2,812,359	2,539,280	3,167,567	35
36	Chrysler Corp.	MO, St. Louis	1,573,699	1,072,129	1,033,910	1,066,540	549,884	686,591	378,456	561,362	36
37	Ford Motor Co.	MO, St. Louis	1,660,230	1,929,488	1,820,840	2,719,951	1,050,690	1,326,160	1,498,106	1,440,910	37
38	General Motors	MO, Wentzville	1,202,670	1,108,205	871,844	71,540	692,660	374,920	298,500	57,860	38
39	Ford Motor Co.	NJ, Edison	351,956	414,865	624,239	776,943	428,830	652,003	993,931	1,083,980	39
40	General Motors	NJ, Linden	69,210	0	190,085	394,264	589,990	2,609	220,339	202,493	40
41	General Motors	NY, N. Tarrytown	493,050	435,105	488,250	561,650	1,116,043	946,200	917,750	637,550	41
42	Ford Motor Co.	OH, Avon Lake	605,529	677,612	394,472	998,984	380,261	544,835	720,693	1,446,607	42
43	Honda	OH, E. Liberty	658,880	565,640	467,920	491,710	1,312,650	1,269,155	887,921	719,815	43
44	Ford Motor Co.	OH, Lorain	1,082,450	863,054	921,450	1,430,765	734,701	741,240	843,512	1,084,952	44
45	General Motors	OH, Lordstown	1,159,159	761,749	488,541	213,040	1,833,819	966,635	502,650	303,578	45
46	Honda (Marysville)	OH, Marysville	4,036,515	3,593,872	3,438,305	2,340,226	3,236,315	4,003,160	2,157,685	1,954,708	46
47	General Motors	OH, Moraine	1,780,968	1,555,825	1,693,900	526,146	2,506,550	2,428,750	2,849,650	646,380	47
48	Chrysler Corp.	OH, #1 Toledo	770,567	591,052	904,095	1,354,112	319,206	602,857	427,288	414,426	48
49	Chrysler Corp.	OH, #2 Toledo	1	32	2,561	1,242	0	42	618	582	49
50	General Motors	OK, Oklahoma	1,272,904	1,052,743	1,137,126	1,170,980	1,445,025	1,560,282	1,861,698	1,165,006	50
51	BMW Manufacturing	SC, Greer	-	-	-	-	-	-	-	0	51
52	Nissan Motor Mfg.	TN, Smyrna	2,500,208	2,830,837	2,519,315	2,428,785	1,335,226	1,680,020	598,089	805,287	52
53	General Motors (Saturn)	TN, Spring Hill	1,036,399	859,676	753,815	1,072,482	1,674,294	19,525,968	1,350,059	941,002	53
54	General Motors	TX, Arlington	1,334,715	1,150,055	1,149,395	1,081,455	875,775	700,760	717,415	588,875	54
55	Ford Motor Co.	VA, Norfolk	545,588	430,629	658,216	675,648	203,860	158,108	620,481	1,613,384	55
56	General Motors	WI, Janesville	251,345	798,739	1,042,839	744,497	783,916	1,320,591	1,580,526	1,499,941	56
	TOTAL		53,078,020	52,320,480	55,423,538	56,223,451	49,951,685	69,774,392	52,844,729	51,541,423	

* Includes non-point source (fugitive) air releases, point source (stack) air releases and water discharges. No on-site releases to land or underground injection were reported by assembly plants.

** Includes discharges to POTW and transfers to off-site energy recovery, recycling, treatment and disposal.

- Not applicable

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Attempts have been made to verify data, but errors may still exist.

1994 TRI CHEMICAL RELEASES AND TRANSFERS BY CHEMICAL: TOTAL FOR ALL ASSEMBLY PLANTS (lbs.)

Chemical Name	Air Fugitive (Non-Point Source) Emissions	Air Stack (Point Source) Emissions	Discharges to Surface Water	TOTAL RELEASES*	Discharges to POTW	Off-Site Transfers	TOTAL TANSFERS**
1,1,1-TRICHLOROETHANE	482,093	239,826	0	721,919	252	486,004	486,004
1,2,4-TRIMETHYLBENZENE	221,011	1,875,614	0	2,096,625	1,216	806,080	806,689
1,4-DIOXANE	3,803	250	0	4,053	0	7,130	7,130
2-ETHOXYETHANOL	5,900	6,200	0	12,100	0	8,600	8,600
4,4'-ISOPROPYLIDENEDIPHENOL	0	0	0	0	0	434	434
ALUMINUM (FUME OR DUST)	0	0	0	0	0	0	6,900
ALUMINUM OXIDE (FIBROUS FORM)	611	0	0	611	183	183	13,785
AMMONIA	28	0	0	28	0	0	0
ANTIMONY COMPOUNDS	0	0	0	0	1	1,094	1,104
BARIUM COMPOUNDS	2,082	2,696	11	4,789	5,313	118,657	257,300
BENZENE	38,074	53,851	0	91,925	46	6,195	6,225
BENZOYL PEROXIDE	0	0	0	0	0	260	260
BIS(2-ETHYLHEXYL) ADIPATE	250	27,475	0	27,725	0	3,460	3,460
BUTYL ACRYLATE	20	47	0	67	0	4,305	4,305
CHLORINE	755	750	0	1,505	3,100	3,350	3,350
CHROMIUM	0	250	501	751	17	472,140	481,000
CHROMIUM COMPOUNDS	37	151	0	188	1,095	54,485	79,102
COPPER	3,956	3,225	7	7,188	141	557,602	611,704
COPPER COMPOUNDS	763	2	0	765	1,018	67,919	69,750
CUMENE	12,479	27,288	0	39,767	0	37,294	37,294
CYCLOHEXANE	1,561	1,515	0	3,076	5	1,061	1,071
DI(2-ETHYLHEXYL) PHTHALATE	0	0	0	0	0	4,100	6,020
DICHLORODIFLUOROMETHANE	12,760	0	0	12,760	0	0	0
DICHLOROMETHANE	46,773	43,500	0	90,273	1,807	148,175	148,175
ETHYLBENZENE	224,004	3,224,177	0	3,448,181	416	4,300,993	4,309,776
ETHYLENE GLYCOL	78,054	133,129	0	211,183	93,482	650,066	705,436
FORMALDEHYDE	5,345	63,398	0	68,743	0	4,377	4,378
GLYCOL ETHERS	616,448	6,683,627	10	7,300,085	1,602,985	2,434,231	2,487,486
HYDROCHLORIC ACID	21,486	574,398	0	595,884	250	32,662	32,662
LEAD	14	262	0	276	66	144,151	150,706
LEAD COMPOUNDS	542	280	10	832	6,217	159,307	264,412
MANGANESE	0	251	0	251	0	1,502,000	1,541,180
MANGANESE COMPOUNDS	3,782	396	5	4,183	17,693	598,387	741,669
METHANOL	373,443	2,431,971	0	2,805,414	18,273	803,195	862,454
METHYL ETHYL KETONE	668,648	1,082,982	0	1,751,630	982	1,593,099	1,594,358
METHYL ISOBUTYL KETONE	519,594	6,475,559	10	6,995,163	21,491	10,196,113	10,204,763
METHYL METHACRYLATE	26,000	23,000	0	49,000	0	0	0
METHYL TERT-BUTYL ETHER	21,796	30,212	8,264	60,272	0	4,123	4,128
METHYLENEBIS(PHENYLISOCYANATE)	255	99	0	354	0	18,692	18,692
N-BUTYL ALCOHOL	182,014	4,478,177	0	4,660,191	12,118	1,408,862	1,477,873
NAPHTHALENE	801	10,588	0	11,389	21	287	287
NICKEL	0	250	0	250	0	428,200	429,906
NICKEL COMPOUNDS	477	9	0	486	13,857	79,619	182,224
NITRIC ACID	2,330	1,040	0	3,370	250	300	300
PHOSPHORIC ACID	2,822	4,350	0	7,172	0	17,700	74,620
PHOSPHORUS (YELLOW OR WHITE)	0	0	0	0	0	0	250
PROPYLENE	1,451	10	0	1,461	0	0	0
STYRENE	33,955	120,250	0	154,205	0	564	815
SULFURIC ACID	2,402	26	0	2,428	250	500	500
TERT-BUTYL ALCOHOL	400	0	0	400	0	0	0
TOLUENE	655,728	3,103,035	0	3,758,763	862	2,252,981	2,262,188
UNKNOWN	1	0	0	1	540	540	540
XYLENE (MIXED ISOMERS)	1,652,342	19,521,652	0	21,173,994	2,791	20,028,794	20,375,191
ZINC COMPOUNDS	39,681	1,070	1,044	41,775	34,593	255,521	774,967
TOTAL	5,966,751	50,246,838	9,862	56,223,451	1,841,331	49,701,772	51,541,423

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TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

	YEAR	NAME	STATE, CITY	TYPE OF PLANT	PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL TRI RELEASES*
01	1991	NUMMI	CA-Fremont	Both	209,169	87,840	658,460	25	746,325
01	1992	NUMMI	CA-Fremont	Both	256,180	109,261	628,454	10	737,725
01	1993	NUMMI	CA-Fremont	Both	321,404	144,660	419,050	16	563,726
01	1994	NUMMI	CA-Fremont	Both	363,083	105,316	496,067	0	601,383
02	1991	Chrysler Corp.	DE-Newark	Auto	173,265	92,336	578,399	0	670,735
02	1992	Chrysler Corp.	DE-Newark	Auto	193,826	140,914	607,460	0	748,374
02	1993	Chrysler Corp.	DE-Newark	Auto	206,545	120,747	811,012	0	931,759
02	1994	Chrysler Corp.	DE-Newark	Auto	220,947	143,751	508,395	0	652,146
03	1991	General Motors	DE-Wilmington	Auto	171,933	107,495	521,158	0	628,653
03	1992	General Motors	DE-Wilmington	Auto	187,441	108,099	566,722	0	674,821
03	1993	General Motors	DE-Wilmington	Auto	202,654	232,181	594,040	0	826,221
03	1994	General Motors	DE-Wilmington	Auto	230,925	18,371	1,267,199	0	1,285,570
04	1991	General Motors	GA-Doraville	Auto	105,151	154,943	874,871	0	1,029,814
04	1992	General Motors	GA-Doraville	Auto	76,855	76,966	422,418	0	499,384
04	1993	General Motors	GA-Doraville	Auto	101,073	103,142	717,046	0	820,188
04	1994	General Motors	GA-Doraville	Auto	124,395	106,687	913,252	0	1,019,939
05	1991	Ford Motor Co.	GA-Hapeville	Auto	210,715	215,069	775,512	0	990,581
05	1992	Ford Motor Co.	GA-Hapeville	Auto	275,232	163,033	1,013,141	0	1,176,174
05	1993	Ford Motor Co.	GA-Hapeville	Auto	279,018	168,713	988,771	0	1,157,484
05	1994	Ford Motor Co.	GA-Hapeville	Auto	275,222	46,942	1,102,089	0	1,149,031
06	1991	Chrysler Corp.	IL-Belvidere	Auto	178,087	104,949	396,864	360	502,173
06	1992	Chrysler Corp.	IL-Belvidere	Auto	155,107	131,654	435,843	0	567,497
06	1993	Chrysler Corp.	IL-Belvidere	Auto	56,601	70,465	135,535	0	206,000
06	1994	Chrysler Corp.	IL-Belvidere	Auto	242,806	105,089	256,337	0	361,426
07	1991	Ford Motor Co.	IL-Chicago	Auto	218,328	49,520	1,572,679	0	1,622,199
07	1992	Ford Motor Co.	IL-Chicago	Auto	275,920	53,899	1,516,712	0	1,570,611
07	1993	Ford Motor Co.	IL-Chicago	Auto	286,962	51,643	1,162,922	0	1,214,565
07	1994	Ford Motor Co.	IL-Chicago	Auto	277,770	75,820	1,153,698	0	1,229,518
08	1991	Diamond-Star	IL-Normal	Auto	153,936	2,942	281,829	0	284,771
08	1992	Diamond-Star	IL-Normal	Auto	139,783	117,134	64,423	0	181,557
08	1993	Diamond-Star	IL-Normal	Auto	136,035	360,642	130,217	0	490,859
08	1994	Diamond-Star	IL-Normal	Auto	168,726	368,529	4,365	0	372,894
09	1991	General Motors	IN-Fort Wayne	Lt. Trucks	173,908	139,091	1,172,530	0	1,311,621
09	1992	General Motors	IN-Fort Wayne	Lt. Trucks	185,938	148,040	997,170	0	1,145,210
09	1993	General Motors	IN-Fort Wayne	Lt. Trucks	229,654	186,000	1,230,600	0	1,416,600
09	1994	General Motors	IN-Fort Wayne	Lt. Trucks	228,728	140,500	948,100	0	1,088,600
10	1991	Subaru-Isuzu	IN-Lafayette	Both	116,297	28,925	610,440	0	639,365
10	1992	Subaru-Isuzu	IN-Lafayette	Both	124,020	9,025	736,765	0	745,790
10	1993	Subaru-Isuzu	IN-Lafayette	Both	124,004	10,215	622,505	0	632,720
10	1994	Subaru-Isuzu	IN-Lafayette	Both	154,801	10,395	981,645	0	992,040
11	1991	General Motors	KS-Kansas City	Auto	114,718	23,755	932,250	0	956,005
11	1992	General Motors	KS-Kansas City	Auto	110,465	30,600	1,135,005	0	1,165,605
11	1993	General Motors	KS-Kansas City	Auto	119,883	18,855	833,255	250	852,360
11	1994	General Motors	KS-Kansas City	Auto	138,120	11,070	952,250	250	963,570
12	1991	General Motors	KY-Bowling Green	Auto	21,082	6,497	294,763	0	301,260
12	1992	General Motors	KY-Bowling Green	Auto	20,839	3,221	198,821	0	202,042
12	1993	General Motors	KY-Bowling Green	Auto	22,578	6,434	259,551	0	265,985
12	1994	General Motors	KY-Bowling Green	Auto	25,390	5,863	142,366	0	148,229
13	1991	Toyota Motor Mfg.	KY-Georgetown	Auto	187,726	30,015	1,176,670	2,000	1,208,685
13	1992	Toyota Motor Mfg.	KY-Georgetown	Auto	240,382	27,065	1,036,850	2,000	1,065,915
13	1993	Toyota Motor Mfg.	KY-Georgetown	Auto	234,060	22,900	907,600	2,000	932,500
13	1994	Toyota Motor Mfg.	KY-Georgetown	Auto	284,765	20,600	1,001,455	500	1,022,555
14	1991	Ford Motor Co.	KY-Louisville	Trucks	33,298	52,372	175,521	0	227,893
14	1992	Ford Motor Co.	KY-Louisville	Trucks	45,542	45,360	245,700	0	291,060
14	1993	Ford Motor Co.	KY-Louisville	Trucks	64,848	33,400	646,793	0	680,193
14	1994	Ford Motor Co.	KY-Louisville	Trucks	128,000	117,322	418,872	0	536,194
15	1991	Ford Motor Co.	KY-Louisville	Lt. Trucks	393,762	40,213	1,826,777	0	1,866,990
15	1992	Ford Motor Co.	KY-Louisville	Lt. Trucks	380,645	49,360	1,475,159	0	1,524,519
15	1993	Ford Motor Co.	KY-Louisville	Lt. Trucks	415,674	70,840	1,531,589	0	1,602,429
15	1994	Ford Motor Co.	KY-Louisville	Lt. Trucks	371,288	129,581	1,231,514	0	1,361,095

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TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL	TOTAL TRANSFERS	TOTAL TRI AIR EMISSIONS (lbs/vehicle)	TOTAL TRI TRANSFERS (lbs/vehicle)	
63,490	331,495	541,200	12	32,610	968,807	3.6	4.6	01
34,514	144,450	908,600	0	38,420	1,125,984	2.9	4.4	01
1,798	28,456	1,092,400	1,250	39,222	1,163,126	1.8	3.6	01
1,544	12,326	1,224,150	2,300	43,267	1,283,587	1.7	3.5	01
60,995	400,420	0	15,722	0	477,137	3.9	2.8	02
13,516	662,000	0	14,510	29,155	719,181	3.9	3.7	02
172,290	73,266	678,685	27,877	56,076	1,008,194	4.5	4.9	02
182,282	31,564	567,964	22,300	27,769	831,879	3.0	3.8	02
0	0	886,368	53,606	0	939,974	3.7	5.5	03
0	0	769,183	62,399	0	831,582	3.6	4.4	03
0	0	1,205,934	343,345	26,455	1,575,734	4.1	7.8	03
0	0	1,033,516	174,079	2,557	1,210,152	5.6	5.2	03
100,626	429,745	327,010	17,373	0	874,754	9.8	8.3	04
64,081	431,761	288,363	10,812	0	795,017	6.5	10.3	04
46,500	35,096	692,843	41,220	0	815,659	8.1	8.1	04
52,903	406,365	555,917	57,052	0	1,072,237	8.2	8.6	04
4,851	7,234	522,167	13,008	35,700	582,960	4.7	2.8	05
5,709	9,639	653,700	23,011	42,090	734,149	4.3	2.7	05
8,040	0	990,020	34,420	90,430	1,122,910	4.1	4.0	05
27,367	11,321	1,537,430	85,000	55,431	1,716,549	4.2	6.2	05
221,020	313,000	0	4,351	18,004	556,375	2.8	3.1	06
230,652	469,629	169,359	1,228	10,689	881,557	3.7	5.7	06
54,165	146,014	48,718	1,346	1,220	251,463	3.6	4.4	06
3,091	44,032	9,988	15,478	20,264	92,853	1.5	0.4	06
103,754	4,140	597,179	5,543	45,900	756,516	7.4	3.5	07
98,040	77,200	910,160	2,282	37,980	1,125,662	5.7	4.1	07
104,790	9,020	911,247	77	40,200	1,065,334	4.2	3.7	07
62,960	6,940	914,600	17	23,000	1,007,517	4.4	3.6	07
0	0	25,521	0	0	25,521	1.8	0.2	08
0	0	2,039,580	0	0	2,039,580	1.3	14.6	08
0	0	1,892,400	0	0	1,892,400	3.6	13.9	08
0	0	1,828,258	81,867	0	1,910,125	2.2	11.3	08
40,020	0	797,000	17,374	442,376	1,296,770	7.5	7.5	09
19,150	0	1,063,000	61,270	394,615	1,538,035	6.2	8.3	09
15,250	24,650	705,800	4,300	331,705	1,081,705	6.2	4.7	09
20,750	49,750	777,550	12,750	522,405	1,383,205	4.8	6.0	09
5	1,386,400	12,800	5,450	0	1,404,655	5.5	12.1	10
40	390,100	9,500	6,600	0	406,240	6.0	3.3	10
1,040	138,780	870,005	27,840	5	1,037,670	5.1	8.4	10
1,040	136,850	684,000	71,600	0	893,490	6.4	5.8	10
255	306,600	0	16,860	2,700	326,415	8.3	2.8	11
250	148,000	250	3,350	4,000	155,850	10.6	1.4	11
250	440,750	250	1,750	4,760	447,760	7.1	3.7	11
250	188,500	505	1,260	8,700	199,215	7.0	1.4	11
0	0	0	390,231	0	390,231	14.3	18.5	12
337	0	0	188,976	5,068	194,381	9.7	9.3	12
121	0	0	192,639	0	192,760	11.8	8.5	12
353	0	0	129,197	4,844	134,394	5.8	5.3	12
2,255	43,915	4,121,200	60,540	1,265	4,229,175	6.4	22.5	13
10,255	59,175	2,426,800	55,405	3,270	2,554,905	4.4	10.6	13
2,505	124,110	1,928,150	72,485	7,900	2,135,150	4.0	9.1	13
1,755	141,660	2,687,015	97,890	1,760	2,930,080	3.6	10.3	13
52,145	92,790	0	411	1,880	147,226	6.8	4.4	14
17,930	106,413	0	690	2,200	127,233	6.4	2.8	14
34,800	282,142	520,000	4,980	3,300	845,222	10.5	13.0	14
80,303	166,897	1,169,000	1,610	28,650	1,446,460	4.2	11.3	14
301,321	20,800	1,252,540	30,001	33,210	1,637,872	4.7	4.2	15
142,593	0	1,484,930	0	36,922	1,664,445	4.0	4.4	15
134,954	103,070	1,527,280	0	64,110	1,829,414	3.9	4.4	15
115,320	33,970	1,552,690	0	29,125	1,731,105	3.7	4.7	15

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TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

	YEAR	NAME	STATE, CITY	TYPE OF PLANT	PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL TRI RELEASES*
16	1991	General Motors	LA-Shreveport	Lt. Trucks	154,765	37,139	1,450,650	1,931	1,489,720
16	1992	General Motors	LA-Shreveport	Lt. Trucks	166,999	31,115	1,614,470	0	1,645,585
16	1993	General Motors	LA-Shreveport	Lt. Trucks	114,312	9,485	888,740	0	898,225
16	1994	General Motors	LA-Shreveport	Lt. Trucks	206,400	605	1,058,690	0	1,059,295
17	1991	General Motors	MD-Baltimore	Lt. Trucks	148,446	84,212	819,026	230	903,468
17	1992	General Motors	MD-Baltimore	Lt. Trucks	190,849	95,342	608,922	200	704,464
17	1993	General Motors	MD-Baltimore	Lt. Trucks	200,201	91,639	727,707	230	819,576
17	1994	General Motors	MD-Baltimore	Lt. Trucks	216,036	88,462	590,114	470	679,046
18	1991	Ford Motor Co.	MI-Dearborn	Auto	81,558	78,278	610,909	0	689,187
18	1992	Ford Motor Co.	MI-Dearborn	Auto	88,568	33,417	505,853	0	539,270
18	1993	Ford Motor Co.	MI-Dearborn	Auto	106,238	64,369	886,975	0	951,344
18	1994	Ford Motor Co.	MI-Dearborn	Auto	199,048	33,548	1,290,364	0	1,323,912
19	1991	Chrysler Corp.	MI-Detroit	Lt. Trucks	500	320	4,868	0	5,188
19	1992	Chrysler Corp.	MI-Detroit	Lt. Trucks	122,961	156,641	561,067	0	717,708
19	1993	Chrysler Corp.	MI-Detroit	Lt. Trucks	245,321	94,158	497,383	0	591,541
19	1994	Chrysler Corp.	MI-Detroit	Lt. Trucks	262,955	112,062	352,047	0	464,109
20	1991	General Motors	MI-Detroit	Lt. Trucks	20,645	121,996	0	0	121,996
20	1992	General Motors	MI-Detroit	Lt. Trucks	24,772	255	107,500	0	107,755
20	1993	General Motors	MI-Detroit	Lt. Trucks	29,719	1,000	35,136	0	36,136
20	1994	General Motors	MI-Detroit	Lt. Trucks	32,863	1,753	29,324	0	31,077
21	1991	General Motors	MI-Detroit	Auto	62,210	23,855	1,036,830	0	1,060,685
21	1992	General Motors	MI-Detroit	Auto	94,068	44,162	1,175,229	0	1,219,391
21	1993	General Motors	MI-Detroit	Auto	71,114	27,063	1,606,062	0	1,633,125
21	1994	General Motors	MI-Detroit	Auto	205,578	37,567	2,415,308	0	2,452,875
22	1991	Auto Alliance Intl.	MI-Flat Rock	Auto	165,314	153,778	1,587,556	2,434	1,743,768
22	1992	Auto Alliance Intl.	MI-Flat Rock	Auto	168,859	173,038	1,283,340	3,084	1,459,462
22	1993	Auto Alliance Intl.	MI-Flat Rock	Auto	219,096	254,435	2,753,559	1,122	3,009,116
22	1994	Auto Alliance Intl.	MI-Flat Rock	Auto	246,991	262,895	1,775,345	8,294	2,046,534
23	1991	General Motors	MI-Flint	Lt. Trucks	45,098	154,350	439,136	424	593,910
23	1992	General Motors	MI-Flint	Lt. Trucks	18,203	47,890	248,565	148	296,603
23	1993	General Motors	MI-Flint	Lt. Trucks	117,116	128,120	775,915	2,505	906,540
23	1994	General Motors	MI-Flint	Lt. Trucks	144,541	181,642	1,861,142	266	2,043,050
24	1991	General Motors	MI-Flint	Auto	178,762	258,850	360,105	500	619,455
24	1992	General Motors	MI-Flint	Auto	157,947	313,673	567,266	0	880,939
24	1993	General Motors	MI-Flint	Auto	221,743	441,102	381,800	0	822,902
24	1994	General Motors	MI-Flint	Auto	268,784	282,914	416,915	0	699,829
25	1991	General Motors	MI-Lake Orion	Auto	235,585	330,542	1,592,100	0	1,922,642
25	1992	General Motors	MI-Lake Orion	Auto	149,232	317,019	1,534,110	0	1,851,129
25	1993	General Motors	MI-Lake Orion	Auto	142,886	177,624	953,879	0	1,131,503
25	1994	General Motors	MI-Orion	Auto	233,227	154,412	1,024,101	0	1,178,513
26	1991	General Motors	MI-Lansing	Auto	135,173	63,625	274,800	58	338,483
26	1992	General Motors	MI-Lansing	Auto	60,351	136,390	289,900	77	426,367
26	1993	General Motors	MI-Lansing	Auto	169,889	83,710	284,500	178	368,388
26	1994	General Motors	MI-Lansing	Auto	212,250	67,100	419,540	82	486,722
27	1991	General Motors	MI-Lansing	Auto	107,498	224,550	559,460	0	784,010
27	1992	General Motors	MI-Lansing	Auto	87,668	225,800	1,030,200	0	1,256,000
27	1993	General Motors	MI-Lansing	Auto	165,418	205,460	1,103,000	3	1,308,463
27	1994	General Motors	MI-Lansing	Auto	206,959	188,360	956,049	0	1,144,409
28	1991	General Motors	MI-Pontiac	Lt. Trucks	261,072	15,203	1,296,401	0	1,311,604
28	1992	General Motors	MI-Pontiac	Lt. Trucks	288,617	200,780	1,196,920	0	1,397,700
28	1993	General Motors	MI-Pontiac	Lt. Trucks	330,952	74,010	1,449,615	0	1,523,625
28	1994	General Motors	MI-Pontiac	Lt. Trucks	352,768	51,020	1,025,500	0	1,076,520
29	1991	Chrysler Corp.	MI-Sterling Hts.	Auto	107,346	56,142	381,756	0	437,898
29	1992	Chrysler Corp.	MI-Sterling Hts.	Auto	173,147	80,427	238,590	0	319,017
29	1993	Chrysler Corp.	MI-Sterling Hts.	Auto	229,557	55,678	382,909	0	438,587
29	1994	Chrysler Corp.	MI-Sterling Hts.	Auto	84,874	28,782	113,789	0	142,571
30	1991	Chrysler Corp.	MI-Warren	Lt. Trucks	177,336	102,787	490,736	0	593,523
30	1992	Chrysler Corp.	MI-Warren	Lt. Trucks	208,099	111,902	483,543	0	595,445
30	1993	Chrysler Corp.	MI-Warren	Lt. Trucks	172,972	119,017	689,774	0	808,791
30	1994	Chrysler Corp.	MI-Warren	Lt. Trucks	285,536	178,783	894,082	0	1,072,865

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TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL	TOTAL TRANSFERS	TOTAL TRI AIR EMISSIONS (lbs/vehicle)	TOTAL TRI TRANSFERS (lbs/vehicle)	
305	32,700	659,050	2,268	2,420	696,743	9.6	4.5	16
350	20,070	637,665	600	1,045	659,730	9.9	4.0	16
1,045	114,355	492,500	1,775	7,390	617,065	7.9	5.4	16
585	399,055	0	15	2,415	402,070	5.1	1.9	16
5,239	497,300	0	5,709	31,700	539,948	6.1	3.6	17
9,136	440,460	0	17,315	45,300	512,211	3.7	2.7	17
9,280	1,207,896	14,000	7,791	41,916	1,280,883	4.1	6.4	17
4,075	0	334,407	5,500	23,874	367,856	3.1	1.7	17
132,884	0	554,706	17,473	11,147	716,210	8.5	8.8	18
34,967	0	571,235	10,493	8,380	625,075	6.1	7.1	18
101,328	0	1,129,846	64,923	12,371	1,308,468	9.0	12.3	18
63,970	0	1,283,673	10,865	15,620	1,374,128	6.7	6.9	18
2,400	547	77,400	0	12	80,359	10.4	160.7	19
10,671	1,100	680,908	8,017	19	700,715	5.8	5.7	19
47,851	9,601	803,502	50,010	70	911,034	2.4	3.7	19
85,282	15,505	669,809	49,855	840	821,291	1.8	3.1	19
0	2,674	40,981	5	0	43,660	5.9	2.1	20
0	1,000	24,749	1,000	0	26,749	4.3	1.1	20
0	500	88,813	0	0	89,313	1.2	3.0	20
0	377	59,944	0	0	60,321	0.9	1.8	20
2,000	17,530	409,600	10,525	7,460	447,115	17.1	7.2	21
497	23,128	735,563	18,361	1,442	778,991	13.0	8.3	21
47	476	810,563	26,289	4,138	841,513	23.0	11.8	21
1,953	1,890	589,652	32,950	0	626,445	11.9	3.0	21
5,463	7,054	709,838	9,671	22,001	754,027	10.5	4.6	22
12,287	10,620	608,828	7,962	21,566	661,263	8.6	3.9	22
536	2,900	143,967	27,600	23,866	198,869	13.7	0.9	22
496	6,959	629,646	2,780	15,868	655,749	8.3	2.7	22
137,352	161,025	585,960	29,361	310	914,008	13.2	20.3	23
62,621	270,465	11,950	11,656	0	356,692	16.3	19.6	23
4,340	145,415	180,775	9,100	0	339,630	7.7	2.9	23
23,152	172,474	331,465	5,774	783	533,648	14.1	3.7	23
22,050	23,800	16,400	42,250	48,300	152,800	3.5	0.9	24
8,981	0	335,700	26,854	40,808	412,343	5.6	2.6	24
6,100	13,500	325,400	3,710	109,334	458,044	3.7	2.1	24
496	0	379,000	0	31,850	411,346	2.6	1.5	24
44,800	75,100	845,774	5,449	37,524	1,008,647	8.2	4.3	25
1,070	16,300	329,911	21,454	12,095	380,830	12.4	2.6	25
1,522	2,060	315,887	6,637	39,435	365,541	7.9	2.6	25
983	116,755	38,324	2,551	38,901	197,514	5.1	0.8	25
482	260,393	8,596	810	7,178	277,459	2.5	2.1	26
14,257	245,373	10,036	5,518	8,471	283,655	7.1	4.7	26
9,195	177,458	63,687	332	968	251,640	2.2	1.5	26
3,237	25,699	21,855	135	2,515	53,441	2.3	0.3	26
1,225	355,000	87	22,858	18,500	397,670	7.3	3.7	27
2,365	171,800	48	91,749	183,996	449,958	14.3	5.1	27
1,482	281,283	164	2,641	12,622	298,192	7.9	1.8	27
155	132,600	0	1,300	2,261	136,316	5.5	0.7	27
441,771	2,820	524,455	170,275	47,470	1,186,791	5.0	4.5	28
580,500	0	1,014,400	43,505	45,805	1,684,210	4.8	5.8	28
630,500	0	1,212,900	100,305	19,810	1,963,515	4.6	5.9	28
150,250	0	868,600	100,055	16,350	1,135,255	3.1	3.2	28
33,520	45,220	287,395	26,900	0	393,035	4.1	3.7	29
9,193	5,426	510,677	19,717	0	545,013	1.8	3.1	29
37,290	72,165	452,621	17,662	0	579,738	1.9	2.5	29
19,625	117,290	207,784	14,477	0	359,176	1.7	4.2	29
78,991	924	1,249,592	17,337	100	1,346,944	3.3	7.6	30
74,541	83	1,189,219	16,451	0	1,280,294	2.9	6.2	30
141,380	225,487	612,100	41,791	0	1,020,758	4.7	5.9	30
33,860	82,715	1,173,667	44,818	2,800	1,337,860	3.8	4.7	30

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TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

7/15/97

	YEAR	NAME	STATE, CITY	TYPE OF PLANT	PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL TRI RELEASES*
31	1991	Ford Motor Co.	MI-Wayne	Auto	188,473	29,745	1,172,043	0	1,201,788
31	1992	Ford Motor Co.	MI-Wayne	Auto	179,143	18,831	365,323	0	384,154
31	1993	Ford Motor Co.	MI-Wayne	Auto	208,263	72,730	475,327	0	548,057
31	1994	Ford Motor Co.	MI-Wayne	Auto	312,191	59,417	909,582	0	968,999
32	1991	Ford Motor Co.	MI-Wayne	Lt. Trucks	78,881	15,408	561,816	0	577,224
32	1992	Ford Motor Co.	MI-Wayne	Lt. Trucks	102,358	39,722	914,735	0	954,457
32	1993	Ford Motor Co.	MI-Wayne	Lt. Trucks	133,707	52,031	1,681,606	0	1,733,637
32	1994	Ford Motor Co.	MI-Wayne	Lt. Trucks	200,312	124,214	2,018,235	0	2,142,449
33	1991	Ford Motor Co.	MI-Wixom	Auto	188,009	54,059	696,165	5,081	755,305
33	1992	Ford Motor Co.	MI-Wixom	Auto	168,556	46,606	899,925	0	946,531
33	1993	Ford Motor Co.	MI-Wixom	Auto	184,403	21,303	1,170,362	0	1,191,665
33	1994	Ford Motor Co.	MI-Wixom	Auto	180,587	30,020	1,208,138	0	1,238,158
34	1991	Ford Motor Co.	MN-St. Paul	Lt. Trucks	125,196	107,742	721,060	0	828,802
34	1992	Ford Motor Co.	MN-St. Paul	Lt. Trucks	119,712	123,018	636,433	0	759,451
34	1993	Ford Motor Co.	MN-St. Paul	Lt. Trucks	188,344	145,888	671,754	0	817,642
34	1994	Ford Motor Co.	MN-St. Paul	Lt. Trucks	208,325	54,770	674,981	0	729,751
35	1991	Ford Motor Co.	MO-Claycomo	Both	293,435	76,675	1,649,576	0	1,726,251
35	1992	Ford Motor Co.	MO-Claycomo	Both	405,910	176,396	2,695,065	0	2,871,461
35	1993	Ford Motor Co.	MO-Claycomo	Both	421,529	218,676	2,471,292	0	2,689,968
35	1994	Ford Motor Co.	MO-Claycomo	Both	413,564	186,685	2,150,932	0	2,337,617
36	1991	Chrysler Corp.	MO-Fenton	Lt. Trucks	225,273	182,435	1,391,264	0	1,573,699
36	1992	Chrysler Corp.	MO-Fenton	Lt. Trucks	257,731	163,612	908,517	0	1,072,129
36	1993	Chrysler Corp.	MO-Fenton	Lt. Trucks	283,445	150,109	883,801	0	1,033,910
36	1994	Chrysler Corp.	MO-Fenton	Lt. Trucks	291,539	150,609	915,931	0	1,066,540
37	1991	Ford Motor Co.	MO-Hazelwood	Lt. Trucks	167,991	92,484	1,563,246	4,500	1,660,230
37	1992	Ford Motor Co.	MO-Hazelwood	Lt. Trucks	200,562	122,210	1,807,278	0	1,929,488
37	1993	Ford Motor Co.	MO-Hazelwood	Lt. Trucks	215,576	89,550	1,731,290	0	1,820,840
37	1994	Ford Motor Co.	MO-Hazelwood	Lt. Trucks	215,193	165,310	2,554,641	0	2,719,951
38	1991	General Motors	MO-Wentzville	Auto	210,675	906,000	263,300	33,370	1,202,670
38	1992	General Motors	MO-Wentzville	Auto	157,335	101,505	1,006,700	0	1,108,205
38	1993	General Motors	MO-Wentzville	Auto	161,669	71,149	800,695	0	871,844
38	1994	General Motors	MO-Wentzville	Auto	not operating	5,855	65,685	0	71,540
39	1991	Ford Motor Co.	NJ-Edison	Lt. Trucks	72,857	32,632	319,324	0	351,956
39	1992	Ford Motor Co.	NJ-Edison	Lt. Trucks	90,588	27,838	387,027	0	414,865
39	1993	Ford Motor Co.	NJ-Edison	Lt. Trucks	135,347	50,839	573,400	0	624,239
39	1994	Ford Motor Co.	NJ-Edison	Lt. Trucks	160,714	36,846	740,097	0	776,943
40	1991	General Motors	NJ-Linden	Auto	68,810	6,360	62,850	0	69,210
40	1992	General Motors	NJ-Linden	Lt. Trucks	0	0	0	0	0
40	1993	General Motors	NJ-Linden	Lt. Trucks	45,387	17,733	172,352	0	190,085
40	1994	General Motors	NJ-Linden	Lt. Trucks	159,051	21,879	372,385	0	394,264
41	1991	General Motors	NY-N. Tarrytown	Lt. Trucks	104,987	12,800	480,250	0	493,050
41	1992	General Motors	NY-N. Tarrytown	Lt. Trucks	102,299	27,555	407,550	0	435,105
41	1993	General Motors	NY-N. Tarrytown	Lt. Trucks	117,811	23,950	464,300	0	488,250
41	1994	General Motors	NY-N. Tarrytown	Lt. Trucks	136,522	18,000	543,650	0	561,650
42	1991	Ford Motor Co.	OH-Avon Lake	Lt. Trucks	0	7,169	598,360	0	605,529
42	1992	Ford Motor Co.	OH-Avon Lake	Lt. Trucks	39,266	25,396	652,216	0	677,612
42	1993	Ford Motor Co.	OH-Avon Lake	Lt. Trucks	142,412	9,421	385,051	0	394,472
42	1994	Ford Motor Co.	OH-Avon Lake	Lt. Trucks	153,786	12,828	986,156	0	998,984
43	1991	Honda	OH-East Liberty	Auto	94,217	108,785	550,095	0	658,880
43	1992	Honda	OH-East Liberty	Auto	116,327	130,665	434,975	0	565,640
43	1993	Honda	OH-East Liberty	Auto	120,737	154,290	313,630	0	467,920
43	1994	Honda	OH-East Liberty	Auto	138,119	128,650	363,060	0	491,710
44	1991	Ford Motor Co.	OH-Lorain	Both	259,424	86,601	995,849	0	1,082,450
44	1992	Ford Motor Co.	OH-Lorain	Both	338,205	57,871	805,183	0	863,054
44	1993	Ford Motor Co.	OH-Lorain	Both	412,948	51,731	869,719	0	921,450
44	1994	Ford Motor Co.	OH-Lorain	Both	456,442	50,211	1,380,554	0	1,430,765
45	1991	General Motors	OH-Lordstown	Both	436,045	334,990	822,089	2,080	1,159,159
45	1992	General Motors	OH-Lordstown	Both	315,719	219,957	541,792	0	761,749
45	1993	General Motors	OH-Lordstown	Auto	399,512	72,444	416,097	0	488,541
45	1994	General Motors	OH-Lordstown	Auto	232,362	49,663	163,377	0	213,040
46	1991	Honda	OH-Marysville	Auto	356,980	1,491,305	2,545,210	0	4,036,515
46	1992	Honda	OH-Marysville	Auto	341,924	2,290,434	1,303,438	0	3,593,872
46	1993	Honda	OH-Marysville	Auto	283,038	1,888,000	1,550,305	0	3,438,305
46	1994	Honda	OH-Marysville	Auto	360,591	791,792	1,548,434	0	2,340,226

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL	TOTAL TRANSFERS	TOTAL TRI AIR EMISSIONS (lbs/vehicle)	TOTAL TRI TRANSFERS (lbs/vehicle)	
55,565	22,831	754,093	0	14,120	846,609	6.4	4.5	31
25,354	36,260	715,955	0	21,130	798,699	2.1	4.5	31
34,056	65,077	743,632	120	23,640	866,525	2.6	4.2	31
36,130	134,412	724,800	4,519	26,200	926,061	3.1	3.0	31
21,790	220,740	119,890	8,055	16,130	386,605	7.3	4.9	32
28,554	125,813	164,900	930	39,650	359,847	9.3	3.5	32
17,359	312,030	561,520	4,191	11,220	906,320	13.0	6.8	32
32,059	301,010	1,065,815	26,530	19,253	1,444,667	10.7	7.2	32
55,157	138,430	1,615,653	25,714	18,158	1,853,112	4.0	9.9	33
12,455	35,423	891,910	71,445	7,285	1,018,518	5.6	6.0	33
100,419	25,021	740,470	43,505	12,975	922,390	6.5	5.0	33
114,101	210	972,500	70,155	15,200	1,172,166	6.9	6.5	33
57,151	331,380	390,600	7,638	9,900	796,669	6.6	6.4	34
80,092	384,400	575,991	2,070	0	1,042,553	6.3	8.7	34
97,662	447,390	636,300	2,891	11,900	1,196,143	4.3	6.4	34
103,190	0	1,229,200	0	14,610	1,347,000	3.5	6.5	34
69,363	267,000	1,025,200	0	67,628	1,429,191	5.9	4.9	35
100,944	308,500	2,297,180	0	105,735	2,812,359	7.1	6.9	35
58,272	382,400	2,008,000	0	90,608	2,539,280	6.4	6.0	35
36,488	767,515	2,299,200	0	64,364	3,167,567	5.7	7.7	35
315,584	47,600	34,520	16,292	135,888	549,884	7.0	2.4	36
98,310	72,743	435,919	8,467	71,152	686,591	4.2	2.7	36
52,761	62,131	180,978	41,176	41,410	378,456	3.6	1.3	36
161,283	24,985	284,621	12,062	78,411	561,362	3.7	1.9	36
58,930	139,600	783,830	36,550	31,780	1,050,690	9.9	6.3	37
66,070	101,390	1,072,700	35,000	51,000	1,326,160	9.6	6.6	37
57,306	135,340	1,179,300	73,300	52,860	1,498,106	8.4	6.9	37
52,260	70,750	1,293,200	0	24,700	1,440,910	12.6	6.7	37
18,170	469,900	170,550	255	33,785	692,660	5.6	3.3	38
94,345	184,700	71,900	3,505	20,470	374,920	7.0	2.4	38
78,920	114,401	72,540	25,445	7,194	298,500	5.4	1.8	38
3,370	53,950	0	270	270	57,860	?	?	38
41,180	0	375,720	0	11,930	428,830	4.8	5.9	39
20,390	0	621,102	0	10,511	652,003	4.6	7.2	39
51,770	0	932,350	0	9,811	993,931	4.6	7.3	39
31,210	0	1,033,770	0	19,000	1,083,980	4.8	6.7	39
5,510	0	265,000	319,480	0	589,990	1.0	8.6	40
0	0	0	2,609	0	2,609	np	np	40
31	87,239	114,418	2,805	15,846	220,339	4.2	4.9	40
941	159,636	25,787	1,909	14,220	202,493	2.5	1.3	40
250	1,104,700	10,343	750	0	1,116,043	4.7	10.6	41
250	610,050	334,900	1,000	0	946,200	4.3	9.2	41
250	213,500	702,750	0	1,250	917,750	4.1	7.8	41
250	426,100	210,200	0	1,000	637,550	4.1	4.7	41
22,260	141,300	187,330	18,071	11,300	380,261	np	np	42
27,532	92,852	392,440	22,951	9,060	544,835	17.3	13.9	42
9,881	58,076	614,370	21,941	16,425	720,693	2.8	5.1	42
46,981	28,773	1,321,870	18,443	30,540	1,446,607	6.5	9.4	42
13,950	1,140,870	130,800	1,590	25,440	1,312,650	7.0	13.9	43
18,845	967,550	244,750	3,035	34,975	1,269,155	4.9	10.9	43
2,279	611,624	235,830	1,555	36,633	887,921	3.9	7.4	43
1,030	450,695	230,700	2,280	35,110	719,815	3.6	5.2	43
23,000	521,500	147,726	35,975	6,500	734,701	4.2	2.8	44
15,030	337,700	358,574	21,206	8,730	741,240	2.6	2.2	44
23,260	382,500	402,501	24,101	11,150	843,512	2.2	2.0	44
33,150	365,800	641,801	0	44,201	1,084,952	3.1	2.4	44
243,290	634,000	859,000	67,680	29,849	1,833,819	2.7	4.2	45
46,616	224,565	564,299	106,620	24,535	966,635	2.4	3.1	45
236,174	4,341	125,380	133,597	3,158	502,650	1.2	1.3	45
116,350	15,974	103,745	1,593	65,916	303,578	0.9	1.3	45
50,080	2,684,505	355,700	5,060	140,970	3,236,315	11.3	9.1	46
6,153	3,490,534	337,316	6,813	162,344	4,003,160	10.5	11.7	46
3,019	1,933,905	155,604	4,881	60,276	2,157,685	12.1	7.6	46
8,207	1,803,513	3,053	9,877	130,058	1,954,708	6.5	5.4	46

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

	YEAR	NAME	STATE, CITY	TYPE OF PLANT	PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL TRI RELEASES*
47	1991	General Motors	OH-Moraine	Lt. Trucks	198,284	10,255	1,770,713	0	1,780,968
47	1992	General Motors	OH-Moraine	Lt. Trucks	184,592	4,510	1,551,315	0	1,555,825
47	1993	General Motors	OH-Moraine	Lt. Trucks	211,523	4,900	1,689,000	0	1,693,900
47	1994	General Motors	OH-Moraine	Lt. Trucks	130,239	4,536	521,610	0	526,146
48	1991	Chrysler Corp.	OH-Toledo#1	Lt. Trucks	170,753	83,465	687,099	3	770,567
48	1992	Chrysler Corp.	OH-Toledo#1	Lt. Trucks	171,715	45,962	545,090	0	591,052
48	1993	Chrysler Corp.	OH-Toledo#1	Lt. Trucks	231,161	92,751	811,344	0	904,095
48	1994	Chrysler Corp.	OH-Toledo#1	Lt. Trucks	303,957	131,763	1,222,349	0	1,354,112
49	1991	Chrysler Corp.	OH-Toledo#2	Lt. Trucks	1,494	1	0	0	1
49	1992	Chrysler Corp.	OH-Toledo#2	Lt. Trucks	1,494	17	15	0	32
49	1993	Chrysler Corp.	OH-Toledo#2	Lt. Trucks	86,238	1,406	1,155	0	2,561
49	1994	Chrysler Corp.	OH-Toledo#2	Lt. Trucks	141,855	711	531	0	1,242
50	1991	General Motors	OK-Oklahoma City	Auto	237,049	160,592	1,112,312	0	1,272,904
50	1992	General Motors	OK-Oklahoma City	Auto	221,960	71,558	981,185	0	1,052,743
50	1993	General Motors	OK-Oklahoma City	Auto	245,829	113,780	1,023,346	0	1,137,126
50	1994	General Motors	OK-Oklahoma City	Auto	268,900	51,843	1,119,137	0	1,170,980
51	1991	BMW Mfg.	SC-Greer	Auto	0	-	-	-	0
51	1992	BMW Mfg.	SC-Greer	Auto	0	-	-	-	0
51	1993	BMW Mfg.	SC-Greer	Auto	-	-	-	-	0
51	1994	BMW Mfg.	SC-Greer	Auto	429	-	-	-	0
52	1991	Nissan Motor Mfg.	TN-Smyrna	Both	265,023	99,206	2,401,002	0	2,500,208
52	1992	Nissan Motor Mfg.	TN-Smyrna	Both	300,328	37,221	2,793,616	0	2,830,837
52	1993	Nissan Motor Mfg.	TN-Smyrna	Both	385,972	157,475	2,361,840	0	2,519,315
52	1994	Nissan Motor Mfg.	TN-Smyrna	Both	444,608	201,823	2,226,962	0	2,428,785
53	1991	General Motors	TN-Spring Hill	Auto	95,821	197,684	838,715	0	1,036,399
53	1992	General Motors	TN-Spring Hill	Auto	212,112	90,362	769,314	0	859,676
53	1993	General Motors	TN-Spring Hill	Auto	282,657	79,722	674,093	0	753,815
53	1994	General Motors	TN-Spring Hill	Auto	280,002	220,849	851,633	0	1,072,482
54	1991	General Motors	TX-Arlington	Auto	127,900	334,110	1,000,105	500	1,334,715
54	1992	General Motors	TX-Arlington	Auto	162,900	219,500	930,055	500	1,150,055
54	1993	General Motors	TX-Arlington	Auto	112,499	253,135	896,260	0	1,149,395
54	1994	General Motors	TX-Arlington	Auto	173,923	213,955	867,500	0	1,081,455
55	1991	Ford Motor Co.	VA-Norfolk	Lt. Trucks	117,315	17,202	528,386	0	545,588
55	1992	Ford Motor Co.	VA-Norfolk	Lt. Trucks	119,783	10,097	420,532	0	430,629
55	1993	Ford Motor Co.	VA-Norfolk	Lt. Trucks	153,910	100,233	557,983	0	658,216
55	1994	Ford Motor Co.	VA-Norfolk	Lt. Trucks	181,840	23,384	652,264	0	675,648
56	1991	General Motors	WI-Janesville	Lt. Trucks	35,261	69,462	181,813	70	251,345
56	1992	General Motors	WI-Janesville	Lt. Trucks	177,022	274,716	524,023	0	798,739
56	1993	General Motors	WI-Janesville	Lt. Trucks	219,578	268,920	773,900	19	1,042,839
56	1994	General Motors	WI-Janesville	Lt. Trucks	237,925	155,397	589,100	0	744,497

* Includes fugitive air releases, stack air releases, and surface water discharges.

** Includes discharges to POTWs and off-site transfers for energy recovery, recycling, treatment and disposal.

- Not applicable ? Not available

SOURCES: All TRI data - U.S. EPA Toxics Release Inventory

Production - *Automotive News*, annual Market Data Book and AAMA; production for Chrysler plants provided by Chrysler.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TRI RELEASE AND TRANSFER TRENDS
BY ASSEMBLY PLANT
1991-1994
(lbs./year)

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL	TOTAL TRANSFERS	TOTAL TRI AIR EMISSIONS (lbs/vehicle)	TOTAL TRI TRANSFERS (lbs/vehicle)	
0	0	2,337,000	169,550	0	2,506,550	9.0	12.6	47
0	0	2,304,500	124,250	0	2,428,750	8.4	13.2	47
0	0	2,729,000	120,650	0	2,849,650	5.9	?	47
0	244,000	401,000	0	1,380	646,380	4.0	5.0	47
21,576	271,642	2,074	20,309	3,605	319,206	4.5	1.9	48
88,952	407,470	378	106,001	56	602,857	3.4	3.5	48
60,590	289,548	2,195	74,935	20	427,288	2.9	1.3	48
73,858	10,267	291,353	38,946	2	414,426	3.0	1.4	48
0	0	0	0	0	0	ed with Toledo #1]		49
0	38	4	0	0	42	ed with Toledo #1]		49
0	606	4	0	8	618	ed with Toledo #1]		49
0	581	1	0	0	582	ed with Toledo #1]		49
1,996	328,493	1,114,463	0	73	1,445,025	5.4	6.1	50
2,431	359,459	1,198,381	0	11	1,560,282	4.7	7.0	50
3,221	535,961	1,317,435	0	5,081	1,861,698	4.6	7.6	50
1,472	336,812	821,453	0	5,269	1,165,006	4.4	4.3	50
-	-	-	-	-	0	-	-	51
-	-	-	-	-	0	-	-	51
-	-	-	-	-	0	0.0	0.0	51
0	0	0	0	0	0	0.0	0.0	51
1,590	0	1,245,978	280	87,378	1,335,226	9.4	5.0	52
1,677	0	1,598,984	130	79,229	1,680,020	9.4	5.6	52
9,566	15,427	459,794	0	113,302	598,089	6.5	1.5	52
8,064	6,016	752,305	0	38,902	805,287	5.5	1.8	52
63,680	802,114	677,855	49,781	80,864	1,674,294	10.8	17.5	53
29,984	46,749	19,257,884	26,139	165,212	19,525,968	4.1	92.1	53
31,497	26,175	1,156,945	27,303	108,139	1,350,059	2.7	4.8	53
9,680	2,891	798,077	1,723	128,631	941,002	3.8	3.4	53
73,115	512,950	285,200	1,005	3,505	875,775	10.4	6.8	54
28,125	326,125	336,300	1,015	9,195	700,760	7.1	4.3	54
18,680	359,445	332,200	0	7,090	717,415	10.2	6.4	54
2,350	281,740	295,300	0	9,485	588,875	6.2	3.4	54
24,140	83,720	85,000	0	11,000	203,860	4.7	1.7	55
35,110	114,005	0	23	8,970	158,108	3.6	1.3	55
23,320	79,100	503,630	1	14,430	620,481	4.3	4.0	55
19,550	80,965	1,495,169	0	17,700	1,613,384	3.7	8.9	55
6,520	0	0	770,696	6,700	783,916	7.1	22.2	56
13,881	0	1,288,916	134	17,660	1,320,591	4.5	7.5	56
7,934	0	1,553,110	0	19,482	1,580,526	4.7	7.2	56
11,320	0	1,355,241	0	133,380	1,499,941	3.1	6.3	56

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1991 RELEASES and TRANSFERS (lbs/year)

7/15/97

	NAME	STATE, CITY	TYPE	1991 PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL RELEASES*
1	NUMMI	CA, Fremont,	Both	209,169	87,840	658,460	25	746,325
2	Chrysler Corp.	DE, Newark	Auto	173,265	92,336	578,399	0	670,735
3	General Motors	DE, Wilmington	Auto	171,933	107,495	521,158	0	628,653
4	General Motors	GA, Doraville	Auto	105,151	154,943	874,871	0	1,029,814
5	Ford Motor Co.	GA, Hapeville	Auto	210,715	215,069	775,512	0	990,581
6	Chrysler Corp.	IL, Belvidere	Auto	178,087	104,949	396,864	360	502,173
7	Ford Motor Co.	IL, Chicago	Auto	218,328	49,520	1,572,679	0	1,622,199
8	Diamond Star	IL, Normal	Auto	153,936	2,942	281,829	0	284,771
9	General Motors	IN, Fort Wayne	Lt. Trucks	173,908	139,091	1,172,530	0	1,311,621
10	Subaru-Isuzu	IN, Lafayette	Both	116,297	28,925	610,440	0	639,365
11	General Motors	KS, Kansas City	Auto	114,718	23,755	932,250	0	956,005
12	General Motors	KY, Bowling Green	Auto	21,082	6,497	294,763	0	301,260
13	Toyota Motor Mfg.	KY, Georgetown	Auto	187,726	30,015	1,176,670	2,000	1,208,685
14	Ford Motor Co.	KY, Louisville	Trucks	33,298	52,372	175,521	0	227,893
15	Ford Motor Co.	KY, Louisville	Lt. Trucks	393,762	40,213	1,826,777	0	1,866,990
16	General Motors	LA, Shreveport	Lt. Trucks	154,765	37,139	1,450,650	1,931	1,489,720
17	General Motors	MD, Baltimore	Lt. Trucks	148,446	84,212	819,026	230	903,468
18	Ford Motor Co.	MI, Dearborn	Auto	81,558	78,278	610,909	0	689,187
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Lt. Trucks	500	320	4,868	0	5,188
20	General Motors	MI, Detroit	Lt. Trucks	20,645	121,996	0	0	121,996
21	General Motors	MI, Detroit	Auto	62,210	23,855	1,036,830	0	1,060,685
22	Auto Alliance Intl.	MI, Flat Rock	Auto	165,314	153,778	1,587,556	2,434	1,743,768
23	General Motors	MI, Flint	Lt. Trucks	45,098	154,350	439,136	424	593,910
24	General Motors (Buick City)	MI, Flint	Auto	178,762	258,850	360,105	500	619,455
25	General Motors	MI, Lake Orion	Auto	235,585	330,542	1,592,100	0	1,922,642
26	General Motors	MI, Lansing (C)	Auto	135,173	63,625	274,800	58	338,483
27	General Motors	MI, Lansing (M)	Auto	107,498	224,550	559,460	0	784,010
28	General Motors	MI, Pontiac	Lt. Trucks	261,072	15,203	1,296,401	0	1,311,604
29	Chrysler Corp.	MI, Sterling Heights	Auto	107,346	56,142	381,756	0	437,898
30	Chrysler Corp.	MI, Warren	Lt. Trucks	177,336	102,787	490,736	0	593,523
31	Ford Motor Co.	MI, Wayne	Auto	188,473	29,745	1,172,043	0	1,201,788
32	Ford Motor Co.	MI, Wayne	Lt. Trucks	78,881	15,408	561,816	0	577,224
33	Ford Motor Co.	MI, Wixom	Auto	188,009	54,059	696,165	5,081	755,305
34	Ford Motor Co.	MN, St. Paul	Lt. Trucks	125,196	107,742	721,060	0	828,802
35	Ford Motor Co.	MO, Claycomo	Both	293,435	76,675	1,649,576	0	1,726,251
36	Chrysler Corp.	MO, St. Louis	Lt. Trucks	225,273	182,435	1,391,264	0	1,573,699
37	Ford Motor Co.	MO, St. Louis	Lt. Trucks	167,991	92,484	1,563,246	4,500	1,660,230
38	General Motors	MO, Wentzville	Auto	210,675	906,000	263,300	33,370	1,202,670
39	Ford Motor Co.	NJ, Edison	Lt. Trucks	72,857	32,632	319,324	0	351,956
40	General Motors	NJ, Linden	Auto	68,810	6,360	62,850	0	69,210
41	General Motors	NY, N. Tarrytown	Lt. Trucks	104,987	12,800	480,250	0	493,050
42	Ford Motor Co.	OH, Avon Lake	Lt. Trucks	0	7,169	598,360	0	605,529
43	Honda	OH, E. Liberty	Auto	94,217	108,785	550,095	0	658,880
44	Ford Motor Co.	OH, Lorain	Both	259,424	86,601	995,849	0	1,082,450
45	General Motors	OH, Lordstown	Both	436,045	334,990	822,089	2,080	1,159,159
46	Honda (Marysville)	OH, Marysville	Auto	356,980	1,491,305	2,545,210	0	4,036,515
47	General Motors	OH, Moraine	Lt. Trucks	198,284	10,255	1,770,713	0	1,780,968
48	Chrysler Corp.	OH, #1 Toledo	Lt. Trucks	170,753	83,465	687,099	3	770,567
49	Chrysler Corp.	OH, #2 Toledo	Lt. Trucks	1,494	1	0	0	1
50	General Motors	OK, Oklahoma	Auto	237,049	160,592	1,112,312	0	1,272,904
51	BMW Manufacturing	SC, Greer	Auto	0	-	-	-	-
52	Nissan Motor Mfg.	TN, Smyrna	Both	265,023	99,206	2,401,002	0	2,500,208
53	General Motors (Saturn)	TN, Spring Hill	Auto	95,821	197,684	838,715	0	1,036,399
54	General Motors	TX, Arlington	Auto	127,900	334,110	1,000,105	500	1,334,715
55	Ford Motor Co.	VA, Norfolk	Lt. Trucks	117,315	17,202	528,386	0	545,588
56	General Motors	WI, Janesville	Lt. Trucks	35,261	69,462	181,813	70	251,345
	TOTAL			**8,462,836**	**7,358,756**	**45,665,698**	**53,566**	**53,078,020**

SOURCES: All TRI data - U.S. EPA 1991 Toxics Release Inventory

Production - American Automobile Manufacturers Association; production for Chrysler plants provided by Chrysler

* Includes fugitive air releases, stack air releases, and surface water discharges.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1991 RELEASES and TRANSFERS (lbs/year)

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL	TOTAL TRANSFERS**	TOTAL AIR EMISSIONS (lbs/vehicle)	TOTAL TRANSFERS (lbs/vehicle)	
63,490	331,495	541,200	12	32,610	968,807	3.6	4.6	1
60,995	400,420	0	15,722	0	477,137	3.9	2.8	2
0	0	886,368	53,606	0	939,974	3.7	5.5	3
100,626	429,745	327,010	17,373	0	874,754	9.8	8.3	4
4,851	7,234	522,167	13,008	35,700	582,960	4.7	2.8	5
221,020	313,000	0	4,351	18,004	556,375	2.8	3.1	6
103,754	4,140	597,179	5,543	45,900	756,516	7.4	3.5	7
0	0	25,521	0	0	25,521	1.8	0.2	8
40,020	0	797,000	17,374	442,376	1,296,770	7.5	7.5	9
5	1,386,400	12,800	5,450	0	1,404,655	5.5	12.1	10
255	306,600	0	16,860	2,700	326,415	8.3	2.8	11
0	0	0	390,231	0	390,231	14.3	18.5	12
2,255	43,915	4,121,200	60,540	1,265	4,229,175	6.4	22.5	13
52,145	92,790	0	411	1,880	147,226	6.8	4.4	14
301,321	20,800	1,252,540	30,001	33,210	1,637,872	4.7	4.2	15
305	32,700	659,050	2,268	2,420	696,743	9.6	4.5	16
5,239	497,300	0	5,709	31,700	539,948	6.1	3.6	17
132,884	0	554,706	17,473	11,147	716,210	8.5	8.8	18
2,400	547	77,400	0	12	80,359	10.4	160.7	19
0	2,674	40,981	5	0	43,660	5.9	2.1	20
2,000	17,530	409,600	10,525	7,460	447,115	17.1	7.2	21
5,463	7,054	709,838	9,671	22,001	754,027	10.5	4.6	22
137,352	161,025	585,960	29,361	310	914,008	13.2	20.3	23
22,050	23,800	16,400	42,250	48,300	152,800	3.5	0.9	24
44,800	75,100	845,774	5,449	37,524	1,008,647	8.2	4.3	25
482	260,393	8,596	810	7,178	277,459	2.5	2.1	26
1,225	355,000	87	22,858	18,500	397,670	7.3	3.7	27
441,771	2,820	524,455	170,275	47,470	1,186,791	5.0	4.5	28
33,520	45,220	287,395	26,900	0	393,035	4.1	3.7	29
78,991	924	1,249,592	17,337	100	1,346,944	3.3	7.6	30
55,565	22,831	754,093	0	14,120	846,609	6.4	4.5	31
21,790	220,740	119,890	8,055	16,130	386,605	7.3	4.9	32
55,157	138,430	1,615,653	25,714	18,158	1,853,112	4.0	9.9	33
57,151	331,380	390,600	7,638	9,900	796,669	6.6	6.4	34
69,363	267,000	1,025,200	0	67,628	1,429,191	5.9	4.9	35
315,584	47,600	34,520	16,292	135,888	549,884	7.0	2.4	36
58,930	139,600	783,830	36,550	31,780	1,050,690	9.9	6.3	37
18,170	469,900	170,550	255	33,785	692,660	5.6	3.3	38
41,180	0	375,720	0	11,930	428,830	4.8	5.9	39
5,510	0	265,000	319,480	0	589,990	1.0	8.6	40
250	1,104,700	10,343	750	0	1,116,043	4.7	10.6	41
22,260	141,300	187,330	18,071	11,300	380,261	np	np	42
13,950	1,140,870	130,800	1,590	25,440	1,312,650	7.0	13.9	43
23,000	521,500	147,726	35,975	6,500	734,701	4.2	2.8	44
243,290	634,000	859,000	67,680	29,849	1,833,819	2.7	4.2	45
50,080	2,684,505	355,700	5,060	140,970	3,236,315	11.3	9.1	46
0	0	2,337,000	169,550	0	2,506,550	9.0	12.6	47
21,576	271,642	2,074	20,309	3,605	319,206	4.5	1.9	48
0	0	0	0	0	0	[included with Toledo #1]		49
1,996	328,493	1,114,463	0	73	1,445,025	5.4	6.1	50
-	-	-	-	-	-	-	-	51
1,590	0	1,245,978	280	87,378	1,335,226	9.4	5.0	52
63,680	802,114	677,855	49,781	80,864	1,674,294	10.8	17.5	53
73,115	512,950	285,200	1,005	3,505	875,775	10.4	6.8	54
24,140	83,720	85,000	0	11,000	203,860	4.7	1.7	55
6,520	0	0	770,696	6,700	783,916	7.1	22.2	56
3,103,066	**14,681,901**	**28,026,344**	**2,546,104**	**1,594,270**	**49,951,685**	**6.3**	**5.9**	

** Includes discharges to POTWs and off-site transfers for energy recovery, recycling, treatment and disposal.

*** From all TRI reporters within 3-mile radius of assembly plant (includes assembly plant); see Part III Plant-Community Profiles.

- Not applicable

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1992 RELEASES and TRANSFERS (lbs/year)

7/15/97

	NAME	STATE, CITY	TYPE	1992 PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL RELEASES*
1	NUMMI	CA, Fremont,	Both	256,180	109,261	628,454	10	737,725
2	Chrysler Corp.	DE, Newark	Auto	193,826	140,914	607,460	0	748,374
3	General Motors	DE, Wilmington	Auto	187,441	108,099	566,722	0	674,821
4	General Motors	GA, Doraville	Auto	76,855	76,966	422,418	0	499,384
5	Ford Motor Co.	GA, Hapeville	Auto	275,232	163,033	1,013,141	0	1,176,174
6	Chrysler Corp.	IL, Belvidere	Auto	155,107	131,654	435,843	0	567,497
7	Ford Motor Co.	IL, Chicago	Auto	275,920	53,899	1,516,712	0	1,570,611
8	Diamond Star	IL, Normal	Auto	139,783	117,134	64,423	0	181,557
9	General Motors	IN, Fort Wayne	Lt. Trucks	185,938	148,040	997,170	0	1,145,210
10	Subaru-Isuzu	IN, Lafayette	Both	124,020	9,025	736,765	0	745,790
11	General Motors	KS, Kansas City	Auto	110,465	30,600	1,135,005	0	1,165,605
12	General Motors Corp.	KY, Bowling Green	Auto	20,839	3,221	198,821	0	202,042
13	Toyota Motor Mfg.	KY, Georgetown	Auto	240,382	27,065	1,036,850	2,000	1,065,915
14	Ford Motor Co.	KY, Louisville	Trucks	45,542	45,360	245,700	0	291,060
15	Ford Motor Co.	KY, Louisville	Lt. Trucks	380,645	49,360	1,475,159	0	1,524,519
16	General Motors	LA, Shreveport	Lt. Trucks	166,999	31,115	1,614,470	0	1,645,585
17	General Motors	MD, Baltimore	Lt. Trucks	190,849	95,342	608,922	200	704,464
18	Ford Motor Co.	MI, Dearborn	Auto	88,568	33,417	505,853	0	539,270
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Lt. Trucks	122,961	156,641	561,067	0	717,708
20	General Motors	MI, Detroit	Lt. Trucks	24,772	255	107,500	0	107,755
21	General Motors	MI, Detroit	Auto	94,068	44,162	1,175,229	0	1,219,391
22	Auto Alliance Intl.	MI, Flat Rock	Auto	168,859	173,038	1,283,340	3,084	1,459,462
23	General Motors	MI, Flint	Lt. Trucks	18,203	47,890	248,565	148	296,603
24	General Motors (Buick City)	MI, Flint	Auto	157,947	313,673	567,266	0	880,939
25	General Motors	MI, Lake Orion	Auto	149,232	317,019	1,534,110	0	1,851,129
26	General Motors	MI, Lansing (C)	Auto	60,351	136,390	289,900	77	426,367
27	General Motors	MI, Lansing (M)	Auto	87,668	225,800	1,030,200	0	1,256,000
28	General Motors	MI, Pontiac	Lt. Trucks	288,617	200,780	1,196,920	0	1,397,700
29	Chrysler Corp.	MI, Sterling Heights	Auto	173,147	80,427	238,590	0	319,017
30	Chrysler Corp.	MI, Warren	Lt. Trucks	208,099	111,902	483,543	0	595,445
31	Ford Motor Co.	MI, Wayne	Auto	179,143	18,831	365,323	0	384,154
32	Ford Motor Co.	MI, Wayne	Lt. Trucks	102,358	39,722	914,735	0	954,457
33	Ford Motor Co.	MI, Wixom	Auto	168,556	46,606	899,925	0	946,531
34	Ford Motor Co.	MN, St. Paul	Lt. Trucks	119,712	123,018	636,433	0	759,451
35	Ford Motor Co.	MO, Claycomo	Both	405,910	176,396	2,695,065	0	2,871,461
36	Chrysler Corp.	MO, St. Louis	Lt. Trucks	257,731	163,612	908,517	0	1,072,129
37	Ford Motor Co.	MO, St. Louis	Lt. Trucks	200,562	122,210	1,807,278	0	1,929,488
38	General Motors	MO, Wentzville	Auto	157,335	101,505	1,006,700	0	1,108,205
39	Ford Motor Co.	NJ, Edison	Lt. Trucks	90,588	27,838	387,027	0	414,865
40	General Motors	NJ, Linden	Lt. Trucks	0	0	0	0	0
41	General Motors	NY, N. Tarrytown	Lt. Trucks	102,299	27,555	407,550	0	435,105
42	Ford Motor Co.	OH, Avon Lake	Lt. Trucks	39,266	25,396	652,216	0	677,612
43	Honda	OH, E. Liberty	Auto	116,327	130,665	434,975	0	565,640
44	Ford Motor Co.	OH, Lorain	Both	338,205	57,871	805,183	0	863,054
45	General Motors	OH, Lordstown	Both	315,719	219,957	541,792	0	761,749
46	Honda (Marysville)	OH, Marysville	Auto	341,924	2,290,434	1,303,438	0	3,593,872
47	General Motors	OH, Moraine	Lt. Trucks	184,592	4,510	1,551,315	0	1,555,825
48	Chrysler Corp.	OH, #1 Toledo	Lt. Trucks	171,715	45,962	545,090	0	591,052
49	Chrysler Corp.	OH, #2 Toledo	Lt. Trucks	1,494	17	15	0	32
50	General Motors	OK, Oklahoma	Auto	221,960	71,558	981,185	0	1,052,743
51	BMW Manufacturing	SC, Greer	Auto	0	-	-	-	-
52	Nissan Motor Mfg.	TN, Smyrna	Both	300,328	37,221	2,793,616	0	2,830,837
53	General Motors (Saturn)	TN, Spring Hill	Auto	212,112	90,362	769,314	0	859,676
54	General Motors	TX, Arlington	Auto	162,900	219,500	930,055	500	1,150,055
55	Ford Motor Co.	VA, Norfolk	Lt. Trucks	119,783	10,097	420,532	0	430,629
56	General Motors	WI, Janesville	Lt. Trucks	177,022	274,716	524,023	0	798,739
	TOTAL			**9,156,056**	**7,507,041**	**44,807,420**	**6,019**	**52,320,480**

SOURCES: All TRI data - U.S. EPA 1992 Toxics Release Inventory

Production - *Automotive News*, 1993 Market Data Book and AAMA; production for Chrysler plants provided by Chrysler

* Includes fugitive air releases, stack air releases, and surface water discharges.

Data sources used were not always complete or current.
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TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1992 RELEASES and TRANSFERS (lbs/year)

7/15/97

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL***	TOTAL TRANSFERS**	TOTAL AIR EMISSIONS (lbs/vehicle)	TOTAL TRANSFERS (lbs/vehicle)	
34,514	144,450	908,600	0	38,420	1,125,984	2.9	4.4	1
13,516	662,000	0	14,510	29,155	719,181	3.9	3.7	2
0	0	769,183	62,399	0	831,582	3.6	4.4	3
64,081	431,761	288,363	10,812	0	795,017	6.5	10.3	4
5,709	9,639	653,700	23,011	42,090	734,149	4.3	2.7	5
230,652	469,629	169,359	1,228	10,689	881,557	3.7	5.7	6
98,040	77,200	910,160	2,282	37,980	1,125,662	5.7	4.1	7
0	0	2,039,580	0	0	2,039,580	1.3	14.6	8
19,150	0	1,063,000	61,270	394,615	1,538,035	6.2	8.3	9
40	390,100	9,500	6,600	0	406,240	6.0	3.3	10
250	148,000	250	3,350	4,000	155,850	10.6	1.4	11
337	0	0	188,976	5,068	194,381	9.7	9.3	12
10,255	59,175	2,426,800	55,405	3,270	2,554,905	4.4	10.6	13
17,930	106,413	0	690	2,200	127,233	6.4	2.8	14
142,593	0	1,484,930	0	36,922	1,664,445	4.0	4.4	15
350	20,070	637,665	600	1,045	659,730	9.9	4.0	16
9,136	440,460	0	17,315	45,300	512,211	3.7	2.7	17
34,967	0	571,235	10,493	8,380	625,075	6.1	7.1	18
10,671	1,100	680,908	8,017	19	700,715	5.8	5.7	19
0	1,000	24,749	1,000	0	26,749	4.3	1.1	20
497	23,128	735,563	18,361	1,442	778,991	13.0	8.3	21
12,287	10,620	608,828	7,962	21,566	661,263	8.6	3.9	22
62,621	270,465	11,950	11,656	0	356,692	16.3	19.6	23
8,981	0	335,700	26,854	40,808	412,343	5.6	2.6	24
1,070	16,300	329,911	21,454	12,095	380,830	12.4	2.6	25
14,257	245,373	10,036	5,518	8,471	283,655	7.1	4.7	26
2,365	171,800	48	91,749	183,996	449,958	14.3	5.1	27
580,500	0	1,014,400	43,505	45,805	1,684,210	4.8	5.8	28
9,193	5,426	510,677	19,717	0	545,013	1.8	3.1	29
74,541	83	1,189,219	16,451	0	1,280,294	2.9	6.2	30
25,354	36,260	715,955	0	21,130	798,699	2.1	4.5	31
28,554	125,813	164,900	930	39,650	359,847	9.3	3.5	32
12,455	35,423	891,910	71,445	7,285	1,018,518	5.6	6.0	33
80,092	384,400	575,991	2,070	0	1,042,553	6.3	8.7	34
100,944	308,500	2,297,180	0	105,735	2,812,359	7.1	6.9	35
98,310	72,743	435,919	8,467	71,152	686,591	4.2	2.7	36
66,070	101,390	1,072,700	35,000	51,000	1,326,160	9.6	6.6	37
94,345	184,700	71,900	3,505	20,470	374,920	7.0	2.4	38
20,390	0	621,102	0	10,511	652,003	4.6	7.2	39
0	0	0	2,609	0	2,609	np	np	40
250	610,050	334,900	1,000	0	946,200	4.3	9.2	41
27,532	92,852	392,440	22,951	9,060	544,835	17.3	13.9	42
18,845	967,550	244,750	3,035	34,975	1,269,155	4.9	10.9	43
15,030	337,700	358,574	21,206	8,730	741,240	2.6	2.2	44
46,616	224,565	564,299	106,620	24,535	966,635	2.4	3.1	45
6,153	3,490,534	337,316	6,813	162,344	4,003,160	10.5	11.7	46
0	0	2,304,500	124,250	0	2,428,750	8.4	13.2	47
88,952	407,470	378	106,001	56	602,857	3.4	3.5	48
0	38	4	0	0	42	[included with Toledo #1]		49
2,431	359,459	1,198,381	0	11	1,560,282	4.7	7.0	50
-	-	-	-	-	-	-	-	51
1,677	0	1,598,984	130	79,229	1,680,020	9.4	5.6	52
29,984	46,749	19,257,884	26,139	165,212	19,525,968	4.1	92.1	53
28,125	326,125	336,300	1,015	9,195	700,760	7.1	4.3	54
35,110	114,005	0	23	8,970	158,108	3.6	1.3	55
13,881	0	1,288,916	134	17,660	1,320,591	4.5	7.5	56
2,299,603	**11,930,518**	**52,449,497**	**1,274,528**	**1,820,246**	**69,774,392**	**5.7**	**7.6**	

** Includes discharges to POTWs and off-site transfers for energy recovery, recycling, treatment and disposal.

- Not applicable

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1993 RELEASES and TRANSFERS (lbs/year)

7/15/97

	NAME	STATE, CITY	TYPE	1993 PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL RELEASES*
1	NUMMI	CA, Fremont,	Both	321,404	144,660	419,050	16	563,726
2	Chrysler Corp.	DE, Newark	Auto	206,545	120,747	811,012	0	931,759
3	General Motors	DE, Wilmington	Auto	202,654	232,181	594,040	0	826,221
4	General Motors	GA, Doraville	Auto	101,073	103,142	717,046	0	820,188
5	Ford Motor Co.	GA, Hapeville	Auto	279,018	168,713	988,771	0	1,157,484
6	Chrysler Corp.	IL, Belvidere	Auto	56,601	70,465	135,535	0	206,000
7	Ford Motor Co.	IL, Chicago	Auto	286,962	51,643	1,162,922	0	1,214,565
8	Diamond Star	IL, Normal	Auto	136,035	360,642	130,217	0	490,859
9	General Motors	IN, Fort Wayne	Lt. Trucks	229,654	186,000	1,230,600	0	1,416,600
10	Subaru-Isuzu	IN, Lafayette	Both	124,004	10,215	622,505	0	632,720
11	General Motors	KS, Kansas City	Auto	119,883	18,855	833,255	250	852,360
12	General Motors	KY, Bowling Green	Auto	22,578	6,434	259,551	0	265,985
13	Toyota Motor Mfg.	KY, Georgetown	Auto	234,060	22,900	907,600	2,000	932,500
14	Ford Motor Co.	KY, Louisville	Trucks	64,848	33,400	646,793	0	680,193
15	Ford Motor Co.	KY, Louisville	Lt. Trucks	415,674	70,840	1,531,589	0	1,602,429
16	General Motors	LA, Shreveport	Lt. Trucks	114,312	9,485	888,740	0	898,225
17	General Motors	MD, Baltimore	Lt. Trucks	200,201	91,639	727,707	230	819,576
18	Ford Motor Co.	MI, Dearborn	Auto	106,238	64,369	886,975	0	951,344
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Lt. Trucks	245,321	94,158	497,383	0	591,541
20	General Motors	MI, Detroit	Lt. Trucks	29,719	1,000	35,136	0	36,136
21	General Motors	MI, Detroit	Auto	71,114	27,063	1,606,062	0	1,633,125
22	Auto Alliance Intl.	MI, Flat Rock	Auto	219,096	254,435	2,753,559	1122	3,009,116
23	General Motors	MI, Flint	Lt. Trucks	117,116	128,120	775,915	2,505	906,540
24	General Motors (Buick City)	MI, Flint	Auto	221,743	441,102	381,800	0	822,902
25	General Motors	MI, Lake Orion	Auto	142,886	177,624	953,879	0	1,131,503
26	General Motors	MI, Lansing (C)	Auto	169,889	83,710	284,500	178	368,388
27	General Motors	MI, Lansing (M)	Auto	165,418	205,460	1,103,000	3	1,308,463
28	General Motors	MI, Pontiac	Lt. Trucks	330,952	74,010	1,449,615	0	1,523,625
29	Chrysler Corp.	MI, Sterling Heights	Auto	229,557	55,678	382,909	0	438,587
30	Chrysler Corp.	MI, Warren	Lt. Trucks	172,972	119,017	689,774	0	808,791
31	Ford Motor Co.	MI, Wayne	Auto	208,263	72,730	475,327	0	548,057
32	Ford Motor Co.	MI, Wayne	Lt. Trucks	133,707	52,031	1,681,606	0	1,733,637
33	Ford Motor Co.	MI, Wixom	Auto	184,403	21,303	1,170,362	0	1,191,665
34	Ford Motor Co.	MN, St. Paul	Lt. Trucks	188,344	145,888	671,754	0	817,642
35	Ford Motor Co.	MO, Claycomo	Both	421,529	218,676	2,471,292	0	2,689,968
36	Chrysler Corp.	MO, St. Louis	Lt. Trucks	283,445	150,109	883,801	0	1,033,910
37	Ford Motor Co.	MO, St. Louis	Lt. Trucks	215,576	89,550	1,731,290	0	1,820,840
38	General Motors	MO, Wentzville	Auto	161,669	71,149	800,695	0	871,844
39	Ford Motor Co.	NJ, Edison	Lt. Trucks	135,347	50,839	573,400	0	624,239
40	General Motors	NJ, Linden	Lt. Trucks	45,387	17,733	172,352	0	190,085
41	General Motors	NY, N. Tarrytown	Lt. Trucks	117,811	23,950	464,300	0	488,250
42	Ford Motor Co.	OH, Avon Lake	Lt. Trucks	142,412	9,421	385,051	0	394,472
43	Honda	OH, E. Liberty	Auto	120,737	154,290	313,630	0	467,920
44	Ford Motor Co.	OH, Lorain	Both	412,948	51,731	869,719	0	921,450
45	General Motors	OH, Lordstown	Auto	399,512	72,444	416,097	0	488,541
46	Honda (Marysville)	OH, Marysville	Auto	283,038	1,888,000	1,550,305	0	3,438,305
47	General Motors	OH, Moraine	Lt. Trucks	211,523	4,900	1,689,000	0	1,693,900
48	Chrysler Corp.	OH, #1 Toledo	Lt. Trucks	231,161	92,751	811,344	0	904,095
49	Chrysler Corp.	OH, #2 Toledo	Lt. Trucks	86,238	1,406	1,155	0	2,561
50	General Motors	OK, Oklahoma	Auto	245,829	113,780	1,023,346	0	1,137,126
51	BMW Manufacturing	SC, Greer	Auto	-	-	-	-	-
52	Nissan Motor Mfg.	TN, Smyrna	Both	385,972	157,475	2,361,840	0	2,519,315
53	General Motors (Saturn)	TN, Spring Hill	Auto	282,657	79,722	674,093	0	753,815
54	General Motors	TX, Arlington	Auto	112,499	253,135	896,260	0	1,149,395
55	Ford Motor Co.	VA, Norfolk	Lt. Trucks	153,910	100,233	557,983	0	658,216
56	General Motors	WI, Janesville	Lt. Trucks	219,578	268,920	773,900	19	1,042,839
	TOTAL			**10,721,022**	**7,589,873**	**47,827,342**	**6,323**	**55,423,538**

SOURCES: All TRI data - U.S. EPA 1993 Toxics Release Inventory

Production - *Automotive News*, 1994 Market Data Book; production for Chrysler plants provided by Chrysler

* Includes fugitive air releases, stack air releases, and surface water discharges.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1993 RELEASES and TRANSFERS (lbs/year)

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL***	TOTAL TRANSFERS**	TOTAL AIR EMISSIONS (lbs/vehicle)	TOTAL TRANSFERS (lbs/vehicle)	
1,798	28,456	1,092,400	1,250	39,222	1,163,126	1.8	3.6	1
172,290	73,266	678,685	27,877	56,076	1,008,194	4.5	4.9	2
0	0	1,205,934	343,345	26,455	1,575,734	4.1	7.8	3
46,500	35,096	692,843	41,220	0	815,659	8.1	8.1	4
8,040	0	990,020	34,420	90,430	1,122,910	4.1	4.0	5
54,165	146,014	48,718	1,346	1,220	251,463	3.6	4.4	6
104,790	9,020	911,247	77	40,200	1,065,334	4.2	3.7	7
0	0	1,892,400	0	0	1,892,400	3.6	13.9	8
15,250	24,650	705,800	4,300	331,705	1,081,705	6.2	4.7	9
1,040	138,780	870,005	27,840	5	1,037,670	5.1	8.4	10
250	440,750	250	1,750	4,760	447,760	7.1	3.7	11
121	0	0	192,639	0	192,760	11.8	8.5	12
2,505	124,110	1,928,150	72,485	7,900	2,135,150	4.0	9.1	13
34,800	282,142	520,000	4,980	3,300	845,222	10.5	13.0	14
134,954	103,070	1,527,280	0	64,110	1,829,414	3.9	4.4	15
1,045	114,355	492,500	1,775	7,390	617,065	7.9	5.4	16
9,280	1,207,896	14,000	7,791	41,916	1,280,883	4.1	6.4	17
101,328	0	1,129,846	64,923	12,371	1,308,468	9.0	12.3	18
47,851	9,601	803,502	50,010	70	911,034	2.4	3.7	19
0	500	88,813	0	0	89,313	1.2	3.0	20
47	476	810,563	26,289	4,138	841,513	23.0	11.8	21
536	2,900	143,967	27,600	23,866	198,869	13.7	0.9	22
4,340	145,415	180,775	9,100	0	339,630	7.7	2.9	23
6,100	13,500	325,400	3,710	109,334	458,044	3.7	2.1	24
1,522	2,060	315,887	6,637	39,435	365,541	7.9	2.6	25
9,195	177,458	63,687	332	968	251,640	2.2	1.5	26
1,482	281,283	164	2,641	12,622	298,192	7.9	1.8	27
630,500	0	1,212,900	100,305	19,810	1,963,515	4.6	5.9	28
37,290	72,165	452,621	17,662	0	579,738	1.9	2.5	29
141,380	225,487	612,100	41,791	0	1,020,758	4.7	5.9	30
34,056	65,077	743,632	120	23,640	866,525	2.6	4.2	31
17,359	312,030	561,520	4,191	11,220	906,320	13.0	6.8	32
100,419	25,021	740,470	43,505	12,975	922,390	6.5	5.0	33
97,662	447,390	636,300	2,891	11,900	1,196,143	4.3	6.4	34
58,272	382,400	2,008,000	0	90,608	2,539,280	6.4	6.0	35
52,761	62,131	180,978	41,176	41,410	378,456	3.6	1.3	36
57,306	135,340	1,179,300	73,300	52,860	1,498,106	8.4	6.9	37
78,920	114,401	72,540	25,445	7,194	298,500	5.4	1.8	38
51,770	0	932,350	0	9,811	993,931	4.6	7.3	39
31	87,239	114,418	2,805	15,846	220,339	4.2	4.9	40
250	213,500	702,750	0	1,250	917,750	4.1	7.8	41
9,881	58,076	614,370	21,941	16,425	720,693	2.8	5.1	42
2,279	611,624	235,830	1,555	36,633	887,921	3.9	7.4	43
23,260	382,500	402,501	24,101	11,150	843,512	2.2	2.0	44
236,174	4,341	125,380	133,597	3,158	502,650	1.2	1.3	45
3,019	1,933,905	155,604	4,881	60,276	2,157,685	12.1	7.6	46
0	0	2,729,000	120,650	0	2,849,650	5.9	?	47
60,590	289,548	2,195	74,935	20	427,288	2.9	1.3	48
0	606	4	0	8	618	[included with Toledo #1]		49
3,221	535,961	1,317,435	0	5,081	1,861,698	4.6	7.6	50
-	-	-	-	-	-	-	-	51
9,566	15,427	459,794	0	113,302	598,089	6.5	1.5	52
31,497	26,175	1,156,945	27,303	108,139	1,350,059	2.7	4.8	53
18,680	359,445	332,200	0	7,090	717,415	10.2	6.4	54
23,320	79,100	503,630	1	14,430	620,481	4.3	4.0	55
7,934	0	1,553,110	0	19,482	1,580,526	4.7	7.2	56
2,546,626	**9,799,687**	**37,170,713**	**1,716,492**	**1,611,211**	**52,844,729**	**5.2**	**4.9**	

** Includes discharges to POTWs and off-site transfers for energy recovery, recycling, treatment and disposal.

*** Includes 14,700 lbs. transferred off-site for which management method is not reported.

- Not applicable ? Not available

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1994 RELEASES and TRANSFERS (lbs/year)

7/15/97

	NAME	STATE, CITY	TYPE	1994 PRODUCTION	FUGITIVE AIR EMISSIONS	STACK AIR EMISSIONS	RELEASES TO SURFACE WATER	TOTAL RELEASES*
1	NUMMI	CA, Fremont,	Both	363,083	105,316	496,067	0	601,383
2	Chrysler Corp.	DE, Newark	Auto	220,947	143,751	508,395	0	652,146
3	General Motors	DE, Wilmington	Auto	230,925	18,371	1,267,199	0	1,285,570
4	General Motors	GA, Doraville	Auto	124,395	106,687	913,252	0	1,019,939
5	Ford Motor Co.	GA, Hapeville	Auto	275,222	46,942	1,102,089	0	1,149,031
6	Chrysler Corp.	IL, Belvidere	Auto	242,806	105,089	256,337	0	361,426
7	Ford Motor Co.	IL, Chicago	Auto	277,770	75,820	1,153,698	0	1,229,518
8	Diamond Star	IL, Normal	Auto	168,726	368,529	4,365	0	372,894
9	General Motors	IN, Fort Wayne	Lt. Trucks	228,728	140,500	948,100	0	1,088,600
10	Subaru-Isuzu	IN, Lafayette	Both	154,801	10,395	981,645	0	992,040
11	General Motors	KS, Kansas City	Auto	138,120	11,070	952,250	250	963,570
12	General Motors Corp.	KY, Bowling Green	Auto	25,390	5,863	142,366	0	148,229
13	Toyota Motor Mfg.	KY, Georgetown	Auto	284,765	20,600	1,001,455	500	1,022,555
14	Ford Motor Co.	KY, Louisville	Trucks	128,000	117,322	418,872	0	536,194
15	Ford Motor Co.	KY, Louisville	Lt. Trucks	371,288	129,581	1,231,514	0	1,361,095
16	General Motors	LA, Shreveport	Lt. Trucks	206,400	605	1,058,690	0	1,059,295
17	General Motors	MD, Baltimore	Lt. Trucks	216,036	88,462	590,114	470	679,046
18	Ford Motor Co.	MI, Dearborn	Auto	199,048	33,548	1,290,364	0	1,323,912
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Lt. Trucks	262,955	112,062	352,047	0	464,109
20	General Motors	MI, Detroit	Lt. Trucks	32,863	1,753	29,324	0	31,077
21	General Motors	MI, Detroit	Auto	205,578	37,567	2,415,308	0	2,452,875
22	Auto Alliance Intl.	MI, Flat Rock	Auto	246,991	262,895	1,775,345	8,294	2,046,534
23	General Motors	MI, Flint	Lt. Trucks	144,541	181,642	1,861,142	266	2,043,050
24	General Motors (Buick City)	MI, Flint	Auto	268,784	282,914	416,915	0	699,829
25	General Motors	MI, Lake Orion	Auto	233,227	154,412	1,024,101	0	1,178,513
26	General Motors	MI, Lansing (C)	Auto	212,250	67,100	419,540	82	486,722
27	General Motors	MI, Lansing (M)	Auto	206,959	188,360	956,049	0	1,144,409
28	General Motors	MI, Pontiac	Lt. Trucks	352,768	51,020	1,025,500	0	1,076,520
29	Chrysler Corp.	MI, Sterling Heights	Auto	84,874	28,782	113,789	0	142,571
30	Chrysler Corp.	MI, Warren	Lt. Trucks	285,536	178,783	894,082	0	1,072,865
31	Ford Motor Co.	MI, Wayne	Auto	312,191	59,417	909,582	0	968,999
32	Ford Motor Co.	MI, Wayne	Lt. Trucks	200,312	124,214	2,018,235	0	2,142,449
33	Ford Motor Co.	MI, Wixom	Auto	180,587	30,020	1,208,138	0	1,238,158
34	Ford Motor Co.	MN, St. Paul	Lt. Trucks	208,325	54,770	674,981	0	729,751
35	Ford Motor Co.	MO, Claycomo	Both	413,564	186,685	2,150,932	0	2,337,617
36	Chrysler Corp.	MO, St. Louis	Lt. Trucks	291,539	150,609	915,931	0	1,066,540
37	Ford Motor Co.	MO, St. Louis	Lt. Trucks	215,193	165,310	2,554,641	0	2,719,951
38	General Motors	MO, Wentzville	Auto	not operating	5,855	65,685	0	71,540
39	Ford Motor Co.	NJ, Edison	Lt. Trucks	160,714	36,846	740,097	0	776,943
40	General Motors	NJ, Linden	Lt. Trucks	159,051	21,879	372,385	0	394,264
41	General Motors	NY, N. Tarrytown	Lt. Trucks	136,522	18,000	543,650	0	561,650
42	Ford Motor Co.	OH, Avon Lake	Lt. Trucks	153,786	12,828	986,156	0	998,984
43	Honda	OH, E. Liberty	Auto	138,119	128,650	363,060	0	491,710
44	Ford Motor Co.	OH, Lorain	Both	456,442	50,211	1,380,554	0	1,430,765
45	General Motors	OH, Lordstown	Auto	232,362	49,663	163,377	0	213,040
46	Honda (Marysville)	OH, Marysville	Auto	360,591	791,792	1,548,434	0	2,340,226
47	General Motors	OH, Moraine	Lt. Trucks	130,239	4,536	521,610	0	526,146
48	Chrysler Corp.	OH, #1 Toledo	Lt. Trucks	303,957	131,763	1,222,349	0	1,354,112
49	Chrysler Corp.	OH, #2 Toledo	Lt. Trucks	141,855	711	531	0	1,242
50	General Motors	OK, Oklahoma	Auto	268,900	51,843	1,119,137	0	1,170,980
51	BMW Manufacturing	SC, Greer	Auto	429	-	-	-	-
52	Nissan Motor Mfg.	TN, Smyrna	Both	444,608	201,823	2,226,962	0	2,428,785
53	General Motors (Saturn)	TN, Spring Hill	Auto	280,002	220,849	851,633	0	1,072,482
54	General Motors	TX, Arlington	Auto	173,923	213,955	867,500	0	1,081,455
55	Ford Motor Co.	VA, Norfolk	Lt. Trucks	181,840	23,384	652,264	0	675,648
56	General Motors	WI, Janesville	Lt. Trucks	237,925	155,397	589,100	0	744,497
	TOTAL			12,176,752	5,966,751	50,246,838	9,862	56,223,451

SOURCES: All TRI data - U.S. EPA 1994 Toxics Release Inventory

Production - *Automotive News*, 1995 Market Data Book; production for Chrysler plants provided by Chrysler

* Includes fugitive air releases, stack air releases, and surface water discharges.

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TOXIC RELEASE INVENTORY (TRI) CHEMICALS
1994 RELEASES and TRANSFERS (lbs/year)

7/15/97

DISCHARGE TO POTW	OFF-SITE ENERGY RECOVERY	OFF-SITE RECYCLING	OFF-SITE TREATMENT	OFF-SITE DISPOSAL	TOTAL TRANSFERS**	TOTAL AIR EMISSIONS (lbs/vehicle)	TOTAL TRANSFERS (lbs/vehicle)	TOTAL RELEASES SOURCES W/IN 3 MILE RADIUS***	
1,544	12,326	1,224,150	2,300	43,267	1,283,587	1.7	3.5	648,600	1
182,282	31,564	567,964	22,300	27,769	831,879	3.0	3.8	748,638	2
0	0	1,033,516	174,079	2,557	1,210,152	5.6	5.2	1,437,600	3
52,903	406,365	555,917	57,052	0	1,072,237	8.2	8.6	1,137,886	4
27,367	11,321	1,537,430	85,000	55,431	1,716,549	4.2	6.2	1,596,795	5
3,091	44,032	9,988	15,478	20,264	92,853	1.5	0.4	480,208	6
62,960	6,940	914,600	17	23,000	1,007,517	4.4	3.6	1,658,538	7
0	0	1,828,258	81,867	0	1,910,125	2.2	11.3	372,644	8
20,750	49,750	777,550	12,750	522,405	1,383,205	4.8	6.0	1,088,600	9
1,040	136,850	684,000	71,600	0	893,490	6.4	5.8	993,096	10
250	188,500	505	1,260	8,700	199,215	7.0	1.4	2,187,069	11
353	0	0	129,197	4,844	134,394	5.8	5.3	178,688	12
1,755	141,660	2,687,015	97,890	1,760	2,930,080	3.6	10.3	1,022,555	13
80,303	166,897	1,169,000	1,610	28,650	1,446,460	4.2	11.3	536,194	14
115,320	33,970	1,552,690	0	29,125	1,731,105	3.7	4.7	1,410,348	15
585	399,055	0	15	2,415	402,070	5.1	1.9	1,088,960	16
4,075	0	334,407	5,500	23,874	367,856	3.1	1.7	843,239	17
63,970	0	1,283,673	10,865	15,620	1,374,128	6.7	6.9	1,563,419	18
85,282	15,505	669,809	49,855	840	821,291	1.8	3.1	472,121	19
0	377	59,944	0	0	60,321	0.9	1.8	2,551,797	20
1,953	1,890	589,652	32,950	0	626,445	11.9	3.0	2,568,579	21
496	6,959	629,646	2,780	15,868	655,749	8.3	2.7	2,046,784	22
23,152	172,474	331,465	5,774	783	533,648	14.1	3.7	2,359,505	23
496	0	379,000	0	31,850	411,346	2.6	1.5	1,166,243	24
983	116,755	38,324	2,551	38,901	197,514	5.1	0.8	1,196,799	25
3,237	25,699	21,855	135	2,515	53,441	2.3	0.3	2,800,426	26
155	132,600	0	1,300	2,261	136,316	5.5	0.7	2,799,926	27
150,250	0	868,600	100,055	16,350	1,135,255	3.1	3.2	1,776,823	28
19,625	117,290	207,784	14,477	0	359,176	1.7	4.2	405,787	29
33,860	82,715	1,173,667	44,818	2,800	1,337,860	3.8	4.7	1,437,846	30
36,130	134,412	724,800	4,519	26,200	926,061	3.1	3.0	3,186,262	31
32,059	301,010	1,065,815	26,530	19,253	1,444,667	10.7	7.2	3,186,262	32
114,101	210	972,500	70,155	15,200	1,172,166	6.9	6.5	1,268,851	33
103,190	0	1,229,200	0	14,610	1,347,000	3.5	6.5	783,753	34
36,488	767,515	2,299,200	0	64,364	3,167,567	5.7	7.7	2,337,617	35
161,283	24,985	284,621	12,062	78,411	561,362	3.7	1.9	1,185,628	36
52,260	70,750	1,293,200	0	24,700	1,440,910	12.6	6.7	3,192,554	37
3,370	53,950	0	270	270	57,860	?	?	71,540	38
31,210	0	1,033,770	0	19,000	1,083,980	4.8	6.7	1,118,293	39
941	159,636	25,787	1,909	14,220	202,493	2.5	1.3	1,429,001	40
250	426,100	210,200	0	1,000	637,550	4.1	4.7	561,650	41
46,981	28,773	1,321,870	18,443	30,540	1,446,607	6.5	9.4	998,984	42
1,030	450,695	230,700	2,280	35,110	719,815	3.6	5.2	534,310	43
33,150	365,800	641,801	0	44,201	1,084,952	3.1	2.4	1,430,765	44
116,350	15,974	103,745	1,593	65,916	303,578	0.9	1.3	213,040	45
8,207	1,803,513	3,053	9,877	130,058	1,954,708	6.5	5.4	2,340,231	46
0	244,000	401,000	0	1,380	646,380	4.0	5.0	1,061,201	47
73,858	10,267	291,353	38,946	2	414,426	3.0	1.4	2,140,645	48
0	581	1	0	0	582	[included with Toledo #1]		1,242	49
1,472	336,812	821,453	0	5,269	1,165,006	4.4	4.3	2,819,587	50
-	-	-	-	-	-	-	-	-	51
8,064	6,016	752,305	0	38,902	805,287	5.5	1.8	2,656,024	52
9,680	2,891	798,077	1,723	128,631	941,002	3.8	3.4	1,072,482	53
2,350	281,740	295,300	0	9,485	588,875	6.2	3.4	1,268,646	54
19,550	80,965	1,495,169	0	17,700	1,613,384	3.7	8.9	962,248	55
11,320	0	1,355,241	0	133,380	1,499,941	3.1	6.3	844,535	56
1,841,331	**7,868,089**	**38,780,570**	**1,211,782**	**1,839,651**	**51,541,423**	**4.6**	**4.2**	**77,241,064**	

** Includes discharges to POTWs and off-site transfers for energy recovery, recycling, treatment and disposal.

*** From all TRI reporters within 3-mile radius of assembly plant (includes assembly plant); see Part III Plant-Community Profiles.

- Not applicable ? Not available

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

VOC EMISSIONS
1990-1994

7/15/97

	NAME	STATE, CITY	VOC EMISSIONS (lbs/year)* 1990	1991	1992	1993	1994	Notes	
1	NUMMI	CA, Fremont	1,866,240	2,239,920	NA	1,476,920	1,947,280	ROG (reactive organic gases); 1994 - draft value	1
2	Chrysler Corp.	DE, Newark	NA	NA	1,837,000	2,321,340	2,180,000	1990 "adjusted"** (1993 unadj. = 2,322,000)	2
3	General Motors	DE, Wilmington	1,398,000	NA	1,394,000	1,788,000	2,404,000	1990 & 1993 "adjusted"** (1993 unadj. = 1,774,000)	3
4	General Motors	GA, Doraville	1,540,000	1,663,600	1,338,000	1,626,000	2,098,000		4
5	Ford Motor Co.	GA, Hapeville	2,170,000	NA	2,890,000	3,252,000	3,382,000	1990 - est.	5
6	Chrysler Corp.	IL, Belvidere	NA	NA	1,676,620	719,000	1,065,580	VOM (volatile organic materials)	6
7	Ford Motor Company	IL, Chicago	NA	NA	3,247,380	2,007,640	2,955,460	VOM (volatile organic materials)	7
8	Diamond Star	IL, Normal	NA	NA	1,838,980	2,035,600	2,125,640	VOM (volatile organic materials)	8
9	General Motors	IN, Fort Wayne	NA	NA	NA	1,537,200	2,957,467		9
10	Subaru-Isuzu	IN, Lafayette	NA	NA	NA	2,803,200	2,056,511		10
11	General Motors	KS, Kansas City	1,422,000	1,290,000	1,526,000	1,886,000	2,122,000		11
12	General Motors	KY, Bowling Green	715,348	606,284	803,070	874,704	1,065,810		12
13	Toyota Motor Mfg.	KY, Georgetown	4,237,118	4,452,000	5,036,590	4,187,946	4,991,238		13
14	Ford Motor Co.	KY, Louisville	1,122,000	NA	NA	1,140,000	1,132,000		14
15	Ford Motor Co.	KY, Louisville	4,050,000	NA	NA	4,880,000	3,014,000		15
16	General Motors	LA, Shreveport	2,394,000	NA	2,358,000	1,790,000	2,238,000		16
17	General Motors	MD, Baltimore	NA	NA	1,905,800	2,156,000	2,413,200		17
18	Ford Motor Co.	MI, Dearborn	1,188,120	1,123,330	916,948	1,327,188	2,292,464		18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	NA	74,228	1,128,000	1,402,000	1,478,000		19
20	General Motors	MI, Detroit	NA	NA	NA	26,522	16,122		20
21	General Motors	MI, Detroit	1,038,250	1,413,662	1,017,250	2,840,682	4,454,164		21
22	Auto Alliance Intl.	MI, Flat Rock	3,524,228	3,576,638	3,412,312	2,516,654	2,863,982		22
23	General Motors	MI, Flint	3,731,342	1,391,356	1,014,658	2,788,628	2,997,270		23
24	General Motors (Buick City)	MI, Flint	4,288,198	2,959,382	2,574,474	2,817,166	3,479,218		24
25	General Motors	MI, Lake Orion	4,815,836	4,582,474	4,198,708	1,877,728	3,348,834		25
26	General Motors	MI, Lansing	1,404,386	1,106,284	764,964	838,224	1,090,324		26
27	General Motors	MI, Lansing	4,277,028	2,137,200	2,862,800	2,450,048	2,862,728		27
28	General Motors	MI, Pontiac	2,373,736	2,033,534	1,995,310	3,029,012	3,303,210		28
29	Chrysler Corp.	MI, Sterling Heights	NA	1,174,772	1,481,000	2,049,000	386,000		29
30	Chrysler Corp.	MI, Warren	NA	2,438,640	2,767,000	2,701,000	3,322,000		30
31	Ford Motor Co.	MI, Wayne	1,293,940	873,626	873,406	1,888,482	1,888,042		31
32	Ford Motor Co.	MI, Wayne	2,206,672	568,958	568,958	841,820	1,868,278		32
33	Ford Motor Co.	MI, Wixom	1,729,722	791,672	653,228	1,100,808	1,482,374		33
34	Ford Motor Co.	MN, St. Paul	NA	1,073,460	2,163,240	1,175,620	835,160		34
35	Ford Motor Co.	MO, Claycomo	3,444,000	NA	4,234,000	5,154,000	5,214,000		35
36	Chrysler Corp.	MO, St. Louis	NA	3,438,000	2,835,000	2,435,000	3,702,000		36
37	Ford Motor Co.	MO, St. Louis	3,202,000	2,884,000	3,226,000	3,158,960	3,172,220		37
38	General Motors	MO, Wentzville	4,290,000	NA	2,862,000	2,188,000	12,000		38
39	Ford Motor Co.	NJ, Edison	587,480	NA	NA	1,162,700	1,407,860		39
40	General Motors	NJ, Linden	1,457,360	NA	NA	732,140	1,785,740		40
41	General Motors	NY, N. Tarrytown	1,604,000	NA	582,000	1,418,000	1,528,000		41
42	Ford Motor Co.	OH, Avon Lake	1,864,580	NA	NA	NA	NA		42
43	Honda	OH, E. Liberty	826,280	NA	NA	NA	NA		43
44	Ford Motor Co.	OH, Lorain	1,226,820	NA	NA	NA	NA		44
45	General Motors	OH, Lordstown	2,059,700	NA	NA	NA	NA		45
46	Honda (Marysville)	OH, Marysville	6,509,660	NA	NA	NA	NA		46
47	General Motors	OH, Moraine	2,776,320	NA	NA	NA	NA		47
48	Chrysler Corp.	OH, #1 Toledo	NA	NA	NA	NA	NA		48
49	Chrysler Corp.	OH, #2 Toledo	NA	NA	NA	NA	NA		49
50	General Motors	OK, Oklahoma	2,510,240	2,388,000	2,368,400	3,126,020	3,469,600		50
51	BMW Manufacturing	SC, Greer	NA	NA	NA	NA	NA		51
52	Nissan Motor Mfg.	TN, Smyrna	3,348,000	NA	NA	3,642,000	2,910,000		52
53	General Motors (Saturn)	TN, Spring Hill	822,000	NA	NA	822,011	NA	1993 - est.	53
54	General Motors	TX, Arlington	2,105,902	NA	1,913,405	2,296,616	2,150,372		54
55	Ford Motor Co.	VA, Norfolk	3,028,000	2,438,000	2,582,000	2,922,000	4,042,000		55
56	General Motors	WI, Janesville	NA	NA	1,400,000	1,737,000	2,570,400		56

*Actual or estimated emissions based on facility reports or state calculations based on operating data provided by facility

Data reported in tons converted to lbs. (1 ton = 2,000 lbs.)

SOURCE: State air pollution control agencies. Chrysler data provided by Chrysler.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

NOx EMISSIONS
1990-1994

	NAME	STATE, CITY	NOx EMISSIONS (tons/year)* 1990	1991	1992	1993	1994	Notes	
1	NUMMI	CA, Fremont	98,000	117,200	NA	149,600	62,200	1994 - draft value	1
2	Chrysler Corp.	DE, Newark	NA	NA	125,000	183,520	189,000		2
3	General Motors	DE, Wilmington	164,000	NA	164,000	234,000	244,000		3
4	General Motors	GA, Doraville	NA	NA	74,000	78,000	80,000		4
5	Ford Motor Co.	GA, Hapeville	NA	NA	77,760	54,600	72,880		5
6	Chrysler Corp.	IL, Belvidere	NA	NA	177,000	214,000	160,000		6
7	Ford Motor Co.	IL, Chicago	NA	NA	NA	NA	70,253	1994 - est. NO2	7
8	Diamond Star	IL, Normal	NA	NA	35,820	151,400	151,400		8
9	General Motors	IN, Fort Wayne	NA	NA	NA	203,200	219,388		9
10	Subaru-Isuzu	IN, Lafayette	NA	NA	NA	100,600	112,840	1994 - NO2	10
11	General Motors	KS, Kansas City	116,000	100,000	92,000	136,000	158,000		11
12	General Motors	KY, Bowling Green	13,812	17,852	15,622	19,140	13,840		12
13	Toyota Motor Mfg.	KY, Georgetown	149,450	176,586	138,050	159,094	245,284		13
14	Ford Motor Co.	KY, Louisville	44,000	NA	NA	68,000	106,000		14
15	Ford Motor Co.	KY, Louisville	228,000	NA	NA	244,000	210,000		15
16	General Motors	LA, Shreveport	130,000	NA	82,000	96,000	200,000		16
17	General Motors	MD, Baltimore	NA	NA	315,600	294,800	289,400		17
18	Ford Motor Co.	MI, Dearborn	45,094	30,880	34,396	49,742	151,564	NO2	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	NA	0	120,000	125,000	126,000	NO2	19
20	General Motors	MI, Detroit	NA	NA	NA	NA	NA		20
21	General Motors	MI, Detroit	641,928	2,080,226	1,000,588	1,975,572	1,963,416	NO2	21
22	Auto Alliance Intl.	MI, Flat Rock	8,120	9,284	9,284	9,284	9,284	NO2	22
23	General Motors	MI, Flint	814,496	801,826	873,596	936,278	862,758	NO2	23
24	General Motors (Buick City)	MI, Flint	130,180	153,240	213,056	110,240	136,952	NO2	24
25	General Motors	MI, Lake Orion	779,392	783,560	1,607,486	859,910	971,430	NO2	25
26	General Motors	MI, Lansing	113,196	106,144	115,242	90,924	123,814	NO2	26
27	General Motors	MI, Lansing	5,118	6,010	66,078	32,380	86,458	NO2	27
28	General Motors	MI, Pontiac	869,140	829,440	746,720	716,880	541,540	NO2	28
29	Chrysler Corp.	MI, Sterling Heights	NA	243,000	303,000	331,000	324,000	NO2	29
30	Chrysler Corp.	MI, Warren	NA	353,000	390,000	303,000	491,000	NO2	30
31	Ford Motor Co.	MI, Wayne	370,000	44,894	NA	120,660	127,420	NO2; 1990 - est.	31
32	Ford Motor Co.	MI, Wayne	73,478	73,478	73,478	48,166	300	NO2	32
33	Ford Motor Co.	MI, Wixom	371,392	404,776	160,578	183,952	160,372	NO2	33
34	Ford Motor Co.	MN, St. Paul	NA	73,560	144,760	95,220	89,160	NO2	34
35	Ford Motor Co.	MO, Claycomo	260,000	NA	252,000	268,000	240,000		35
36	Chrysler Corp.	MO, St. Louis	NA	331,000	318,000	230,000	100,000		36
37	Ford Motor Co.	MO, St. Louis	28,000	20,000	92,000	88,580	106,040		37
38	General Motors	MO, Wentzville	658,000	NA	584,000	528,000	294,000		38
39	Ford Motor Co.	NJ, Edison	628,740	NA	NA	132,040	129,320		39
40	General Motors	NJ, Linden	269,600	NA	NA	236,260	569,680		40
41	General Motors	NY, N. Tarrytown	276,000	NA	236,000	228,000	248,000		41
42	Ford Motor Co.	OH, Avon Lake	20,080	NA	NA	NA	NA		42
43	Honda	OH, E. Liberty	NA	NA	NA	NA	NA		43
44	Ford Motor Co.	OH, Lorain	247,560	NA	NA	NA	NA		44
45	General Motors	OH, Lordstown	NA	NA	NA	NA	NA		45
46	Honda (Marysville)	OH, Marysville	NA	NA	NA	NA	NA		46
47	General Motors	OH, Moraine	73,240	NA	NA	NA	NA		47
48	Chrysler Corp.	OH, #1 Toledo	NA	NA	NA	NA	NA		48
49	Chrysler Corp.	OH, #2 Toledo	NA	NA	NA	NA	NA		49
50	General Motors	OK, Oklahoma	206,940	248,880	260,640	288,460	305,140		50
51	BMW Manufacturing	SC, Greer	NA	NA	NA	NA	NA		51
52	Nissan Motor Mfg.	TN, Smyrna	344,000	NA	NA	548,000	358,000		52
53	General Motors (Saturn)	TN, Spring Hill	88,000	NA	NA	88,200	NA	1993 - est. NO2	53
54	General Motors	TX, Arlington	166,305	NA	108,941	128,159	159,380		54
55	Ford Motor Co.	VA, Norfolk	18,000	14,000	18,000	54,000	52,000	NO2	55
56	General Motors	WI, Janesville	NA	254,800	320,400	289,600	271,800		56

*Actual or estimated emissions based on facility reports or state calculations based on operating data provided by facility.

Data reported in tons converted to lbs. (1 ton = 2,000 lbs.)

SOURCE: State air pollution control agencies. Chrysler data provided by Chrysler.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

CRITERIA AIR POLLUTANT ATTAINMENT STATUS OF ASSEMBLY PLANT LOCATIONS (as of 1994)

	COMPANY	STATE & CITY	COUNTY	OZONE	CO	PM 10	LEAD	NO2	SO2
1	NUMMI	CA, Fremont,	Alameda	NA-Moderate*	NA-Moderate	U	U	CBC/A	A
2	Chrysler Corp.	DE, Newark	New Castle	NA-Severe	U/A	U	U	CBC/A	A
3	General Motors	DE, Wilmington	New Castle	NA-Severe	U/A	U	U	CBC/A	A
4	General Motors	GA, Doraville	DeKalb	NA-Serious	U/A	U	U	CBC/A	A
5	Ford Motor Co.	GA, Hapeville	Fulton	NA-Serious	U/A	U	U	CBC/A	A
6	Chrysler Corp.	IL, Belvidere	Boone	U/A	U/A	U	U	CBC/A	A
7	Ford Motor Co.	IL, Chicago	Cook	NA-Severe	U/A	NA-Moderate	U	CBC/A	A
8	Diamond Star	IL, Normal	McLean	U/A	U/A	U	U	CBC/A	A
9	General Motors	IN, Fort Wayne	Allen	U/A	U/A	U	U	CBC/A	A
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	U/A	U/A	U	U	CBC/A	A
11	General Motors	KS, Kansas City	Wyandotte	A (Maintenance)	U/A	U	U	CBC/A	A
12	General Motors Corp.	KY, Bowling Green	Warren	U/A	U/A	U	U	CBC/A	A
13	Toyota Motor Mfg.	KY, Georgetown	Scott	Marginal**	U/A	U	U	CBC/A	A
14	Ford Motor Co.	KY, Louisville	Jefferson	NA-Moderate	U/A	U	U	CBC/A	A
15	Ford Motor Co.	KY, Louisville	Jefferson	NA-Moderate	U/A	U	U	CBC/A	A
16	General Motors	LA, Shreveport	Caddo	U/A	U/A	U	U	CBC/A	A
17	General Motors	MD, Baltimore	Baltimore	NA-Severe	NA-Moderate%	U	U	CBC/A	A
18	Ford Motor Co.	MI, Dearborn	.Wayne	NA-Moderate@	NA-Not Classified	NA-Moderate ##	U	CBC/A	A
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	NA-Moderate@	NA-Not Classified	NA-Moderate ##	U	CBC/A	A
20	General Motors	MI, Detroit	Wayne	NA-Moderate@	NA-Not Classified	NA-Moderate ##	U	CBC/A	A
21	General Motors	MI, Detroit	Wayne	NA-Moderate@	NA-Not Classified	NA-Moderate ##	U	CBC/A	A
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	NA-Moderate@	U/A	U	U	CBC/A	A
23	General Motors	MI, Flint	Genesee	NA-Transitional	U/A	U	U	CBC/A	A
24	General Motors (Buick City)	MI, Flint	Genesee	NA-Transitional	U/A	U	U	CBC/A	A
25	General Motors	MI, Lake Orion	Oakland	NA-Moderate@	U/A	U	U	CBC/A	A
26	General Motors	MI, Lansing	Ingham	U/A	U/A	U	U	CBC/A	A
27	General Motors	MI, Lansing	Ingham	U/A	U/A	U	U	CBC/A	A
28	General Motors	MI, Pontiac	Oakland	NA-Moderate@	U/A	U	U	CBC/A	A
29	Chrysler Corp.	MI, Sterling Heights	Macomb	NA-Moderate@	U/A	U	U	CBC/A	A
30	Chrysler Corp.	MI, Warren	Macomb	NA-Moderate@	NA-Not Classified	U	U	CBC/A	A
31	Ford Motor Co.	MI, Wayne	Wayne	NA-Moderate@	U/A	U	U	CBC/A	A
32	Ford Motor Co.	MI, Wayne	Wayne	NA-Moderate@	U/A	U	U	CBC/A	A
33	Ford Motor Co.	MI, Wixom	Oakland	NA-Moderate@	U/A	U	U	CBC/A	A
34	Ford Motor Co.	MN, St. Paul	Ramsey	U/A	U/A	U/A	U	CBC/A	A
35	Ford Motor Co.	MO, Claycomo	Clay	U/A	U/A	U	U	CBC/A	A
36	Chrysler Corp.	MO, St. Louis	St. Louis	NA-Moderate	U/A	U	U	CBC/A	A
37	Ford Motor Co.	MO, St. Louis	St. Louis	NA-Moderate	U/A	U	U	CBC/A	A
38	General Motors	MO, Wentzville	St. Charles	NA-Moderate	U/A	U	U	CBC/A	A
39	Ford Motor Co.	NJ, Edison	Middlesex	NA-Severe	U/A	U	U	CBC/A	A
40	General Motors	NJ, Linden	Union	NA-Severe	NA-Moderate	U	U	CBC/A	A
41	General Motors	NY, N. Tarrytown	Westchester	NA-Severe	NA-Moderate	U	U	CBC/A	A
42	Ford Motor Co.	OH, Avon Lake	Lorain	NA-Moderate+	U/A	U	U	CBC/A	A
43	Honda	OH, E. Liberty	Logan	U/A	U/A	U	U	CBC/A	A
44	Ford Motor Co.	OH, Lorain	Lorain	NA-Moderate+	U/A	U	U	CBC/A	A
45	General Motors	OH, Lordstown	Trumbull	Marginal ^^	U/A	U	U	CBC/A	A
46	Honda (Marysville)	OH, Marysville	Union	U/A	U/A	U	U	CBC/A	A
47	General Motors	OH, Moraine	Montgomery	NA-Moderate^	U/A	U	U	CBC/A	A
48	Chrysler Corp.	OH, #1 Toledo	Lucas	NA-Moderate++	U/A	U	U	CBC/A	NA-Primary
49	Chrysler Corp.	OH, #2 Toledo	Lucas	NA-Moderate++	U/A	U	U	CBC/A	NA-Primary
50	General Motors	OK, Oklahoma	Oklahoma	U/A	U/A	U	U	CBC/A	A
51	BMW Manufacturing	SC, Greer	Green Rock	U/A	U/A	U	U	CBC/A	A
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	NA-Moderate	U/A	U	U	CBC/A	A
53	General Motors (Saturn)	TN, Spring Hill	Maury	U/A	U/A	U	U	CBC/A	A
54	General Motors	TX, Arlington	Tarrant	NA-Moderate	U/A	U	U	CBC/A	A
55	Ford Motor Co.	VA, Norfolk	Norfolk City	NA-Marginal	U/A	U	U	CBC/A	A
56	General Motors	WI, Janesville	Rock	U/A	U/A	U	U	CBC/A	A

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

NOTES FOR ATTAINMENT STATUS

See Appendix H for definitions of attainment classifications.
A = Attainment
CBC/A = Cannot be classified or better than national standards
NA = Nonattainment
U = Unclassifiable
UA = Unclassifiable/Attainment

*	Redesignated attainment effective 6/21/95 (60 FR 27028)
**	Redesignated attainment effective 11/13/95 (60 FR 47009)
@	Redesignated attainment effective 4/6/95 (60 FR 12459)
+	Redesignated attainment effective 5/7/96 (61 FR 20458)
++	Redesignated attainment effective 8/1/95 (60 FR 39115)
^	Redesignated attainment effective 7/5/95 (60 FR 22289)
^^	Redesignated attainment effective 4/1/96 (61 FR 3319)
##	Redesignated attainment effective 10/4/96 (61 FR 40519)
%	Redesignated attainment effective 12/15/95 (60 FR 55326)

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

RCRA WASTE SUMMARY FOR U.S. AUTO AND LIGHT DUTY TRUCK ASSEMBLY PLANTS

7/16/97

Biennial RCRA Hazardous Waste Report, 1991 and1993
(short tons)

	NAME	STATE, CITY	WASTE CODES ^	1991 TONS GENERATED	1991 TONS SHIPPED*	1993 TONS GENERATED	1993 TONS SHIPPED*	
1	NUMMI	CA, Fremont,	D001,002,005,006,007,008,009,018,021,035,039,F001,002,003,005; D027, 040	918	918	1,168	1,194	1
2	Chrysler Corp.	DE, Newark	D001, 008, 018, 035, 039, F002, 003	497	497	675	675	2
3	General Motors	DE, Wilmington	*D001, 002, 008, 018, 035, 039, F003*	1,448	1,428	34,178	1,034	3
4	General Motors	GA, Doraville	*D035, F003, 005;* D001, 008; F006	722	722	634	634	4
5	Ford Motor Co.	GA, Hapeville	*D003, 006, 007, F002;* D002, F003, 005; D001	868	868	982	485	5
6	Chrysler Corp.	IL, Belvidere	*D018, 035, F002, F005;* D001, 002, 006, 007, 008, F003; U151	436	436	453	453	6
7	Ford Motor Co.	IL, Chicago	*D018, 039;* D001; F001, 005	595	595	695	695	7
8	Diamond Star	IL, Normal	*D002, 006, 009, F005, U007;* D001, 008, 018, 028, 040, F003	1,219	1,216	1,053	1,053	8
9	General Motors	IN, Fort Wayne	*D001, 008, F003, 005*	39,261	702	735	735	9
10	Subaru-Isuzu	IN, Lafayette	*D018, U122, 154;* D001, 002, 006, 008, 009, 018, F001, F003; D007	943	943	895	895	10
11	General Motors	KS, Kansas City	*D001, 003, 005, 006, 007, 008, F003, 005*	422	423	336	337	11
12	General Motors	KY, Bowling Green	*D005, 007, 008, F005;* D001, 002, F002, 003; D006	284	284	266	266	12
13	Toyota Motor Mfg.	KY, Georgetown	*D006, 022, 030, 034, 036, 040, 043;* D001, 002, 003, 005, 007, 008, 009, 015, 018, 021, 035, F002, 003, 005; D004, 011, 012, 039	2,677	2,502	3,776	2,526	13
14	Ford Motor Co.	KY, Louisville	*D002, 035;* D001, 007, 008, 009, F003, 005; D018, F001	751	751	1,545	1,545	14
15	Ford Motor Co.	KY, Louisville	*D009;* D001, 006, 008, 018, 039, F003, 005; D007	1,358	1,358	1,351	1,351	15
16	General Motors	LA, Shreveport	*D001,008,F003,005*	757	757	559	559	16
17	General Motors	MD, Baltimore	*D001, 002, 006, 008, 018, 035, 039, F001, 002, 003, 005*	46,208	600	79,665	983	17
18	Ford Motor Co.	MI, Dearborn	*D007, 027, 035, 039, 040;* D001, 008, 018, F003, 005; D006	954	954	964	964	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	*D035;* D001, 008, F003; D002, 007	101	292	644	644	19
20	General Motors	MI, Detroit	?	?	?	?	?	20
21	General Motors	MI, Detroit	*D009, 043;* D001, 008, 035, F003, 005; D005, F002	2,317	2,313	1,454	1,444	21
22	Auto Alliance Intl.	MI, Flat Rock	D001,008,F001,003,005; D005	862	866	685	685	22
23	General Motors	MI, Flint	*D040;* D001, 008, F002, 003, 005; F001, P012, 018, 029, 098, 108, U151	3,093	3,093	2,188	2,210	23
24	General Motors (Buick City)	MI, Flint	*D005, 009, 021, 027, 039, 040, LABP, P005, P028, U051, 052, 225;* D001, 006, 007, 008, 018, 035, F003, 005; F001, 002, U121	739	739	370	370	24
25	General Motors	MI, Lake Orion	*D039, 040;* D001, 006, 008, 010, 035, F002, 003; D005, 007	1,375	1,375	1,052	1,055	25
26	General Motors	MI, Lansing	*D003, 011, 023, 025, 026, 039, U080, 210, 226, P106;* D001, 002, 005, 006, 007, 008, 009, 018, 035, F001, 002, 003, 005; U240	1,061	1,055	306	309	26
27	General Motors	MI, Lansing	*D011, 027, 036;* D001, 002, 005, 006, 007, 008, 010, 018, 022, 029, 035, 039, 040, F002, 003, 005; D004, 031, F001, P059	3,840	3,843	782	784	27
28	General Motors	MI, Pontiac	*D005, 035, F001, 005;* D001, 008, 018, F003	1,035	1,035	1,325	1,325	28
29	Chrysler Corp.	MI, Sterling Heights	D001,006,008,F002,003,005	369	369	678	678	29
30	Chrysler Corp.	MI, Warren	*D009;* D001, 005, 007, 018, 032, 035, 039, F003; D002, 008, F002, F005	978	978	633	633	30
31	Ford Motor Co.	MI, Wayne	*F003;* D001, 008	757	757	700	700	31
32	Ford Motor Co.	MI, Wayne	*D001,002,010,F003*	536	536	1,004	1,004	32
33	Ford Motor Co.	MI, Wixom	D001,008,018,039,F001,005,006	3,118	3,118	3,276	3,276	33
34	Ford Motor Co.	MN, St. Paul	*D001,005,006,008,009,018,039,F003,005*	579	580	965	965	34
35	Ford Motor Co.	MO, Claycomo	*D001,003,005,006,008,F002,008*	1,430	1,430	1,996	1,996	35
36	Chrysler Corp.	MO, St. Louis	*D001,002,008,009,F003,005*	1,006	1,000	415	415	36
37	Ford Motor Co.	MO, St. Louis	*D001,002,018,035,039,F003,005*	119	119	1,015	1,015	37
38	General Motors	MO, Wentzville	*D001,003,006,007,008,018,F003,005*	460	460	376	369	38
39	Ford Motor Co.	NJ, Edison	*D001,008,018,035,F003,F005*	429	429	676	676	39
40	General Motors	NJ, Linden	*D001,002,006,007,008,010,018,039,F003,005,U117*	106	106	6,392	6,392	40
41	General Motors	NY, N. Tarrytown	*D001,008,009,039,F003*	918	918	17,378	681	41
42	Ford Motor Co.	OH, Avon Lake	*D005, 006, 007, 035;* D001, 008, 009, 018, 039, F002, 003, 005; D002, F001	975	975	1,618	1,618	42
43	Honda	OH, E. Liberty	*F001;* D001, 008, 039, F002, 003, 005; D009, 018, 035	711	711	803	803	43
44	Ford Motor Co.	OH, Lorain	D001,002,005,006,007,F001,002; D039, F003, 005	778	778	962	962	44
45	General Motors	OH, Lordstown	D001,002,006,007,008,009,039,F003,F005; D027, 035, 036	1,423	1,423	438	438	45
46	Honda (Marysville)	OH, Marysville	*D001,008,039,F002,003,005*	?	?	?	?	46
47	General Motors	OH, Moraine	*D006, 007, 018;* D001, 008, 039, F003, 005	2,566	2,566	2,818	2,818	47
48	Chrysler Corp.	OH, #1 Toledo	D001,006,007,008,009,018,021,027,039,040,F001,002,003,005	551	551	599	599	48
49	Chrysler Corp.	OH, #2 Toledo	*D006, 007, 008, 009, F003, 005;* D001, 018, 039, F002	5	5	15	15	49
50	General Motors	OK, Oklahoma	D001,006,008,018,039,040,F002,003,005	891	896	1,010	1,010	50
51	BMW Manufacturing	SC, Greer	Not operating in 1994	-	-	-	-	51
52	Nissan Motor Mfg.	TN, Smyrna	*D018, F003;* D001, D008, F005; D006, 007, F001	730	1,267	1,441	1,441	52
53	General Motors (Saturn)	TN, Spring Hill	D001, 008, 018, 035, F002, 003, 005, P022	1,291	1,261	766	763	53
54	General Motors	TX, Arlington	(1991 DATA) D001, 007,008,009,018,F003	918	885	532	526	54
55	Ford Motor Co.	VA, Norfolk	D001,018,039,F002,003,005; D006, 007	130	130	716	716	55
56	General Motors	WI, Janesville	*D006;* D001, 008, F003, 005; D002, F002, U151	624	624	5,259	5,259	56
	^ Waste codes not included for wastes generated in less than one ton/year							
	Plants 3, 9, 11, 16, 17, 32, 34-41, and 46 -- 1993 waste codes only			137,142	53,438	191,198	60,977	
	* - Includes shipment to off-site facilities for recycling, energy recovery, treatment, or disposal.							
	Bold - waste code appears in 1993 and 1991		*Italicized* - waste code appears in 1993 only					
	Plain text - waste code appears in 1991 only							
	One short ton = 2000 lbs.	- Not applicable	? Not available					

Data sources used were not always complete or current.
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Summary of 1993 Hazardous Waste Managed
Total for Auto LDT Assembly Plants

(Short tons, by Type of Waste and Management Method)

	WASTE TYPE:								
MANAGEMENT METHOD:	Ignitable wastes (D001)	Corrosive wastes (D002)	Reactive wastes (D003)	Toxic metals charact. wastes (D004-D011)	Toxic organic charact. wastes (D012-D043)	Mixed charact. wastes	Listed solvents (F001-005)	Toxic CCPs & Lab Packs	TOTAL
Metals recovery for reuse	0	122	0	23	0	0	0	0	145
Solvents recovery	5,097	0	0	32	250	0	21,729	0	27,108
Incineration	973	23	19	382	18	1	1,854	4	3,274
Energy recovery	105	0	0	0	76	12	1,774	0	1,967
Fuel blending	515	5	0	154	294	525	2,995	1	4,489
Aqueous treatment	1,213	15,892	0	94,970	1	0	0	0	112,076
Stabilization	81	86	0	12,090	58	16	293	0	12,624
Neutralization only	44	1,055	0	1	0	0	0	0	1,100
Other treatment	19	0	0	107	44	3	768	0	941
Landfill	0	0	0	571	2,326	7	0	0	2,904
Discharge to POTW/sewer	0	0	0	16,697	0	0	0	0	16,697
Ship to transfer facility	33	1	1	0	148	1	2	0	186
Unknown/not reported	960	14	0	599	128	2	5,557	0	7,260
TOTAL	**9,040**	**17,198**	**20**	**125,626**	**3,343**	**567**	**34,972**	**5**	**190,771**

One short ton = 2000 lbs.; totals may not add due to rounding.

See Appendix E for information on waste types and management methods.

SOURCE: 1993 Biennial Report

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

COUNTY ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

	COMPANY NAME	STATE, CITY	COUNTY	AREA (sq. miles) 1990 (aa)	TOTAL POPULATION 1994 (bb)	POPULATION Per sq. mi. 1994 (cc)	
	United States			**3,536,278.1**	**260,340,990**	**73.6**	
1	NUMMI	CA, Fremont	Alameda	737.5	1,319,480	1,789.1	1
2	Chrysler Corp.	DE, Newark	New Castle	426.3	464,257	1,089.0	2
3	General Motors	DE, Wilmington	New Castle	426.3	464,257	1,089.0	3
4	General Motors	GA, Doraville	DeKalb	268.3	577,772	2,153.5	4
5	Ford Motor Co.	GA, Hapeville	Fulton	528.7	690,490	1,306.0	5
6	Chrysler Corp.	IL, Belvidere	Boone	281.4	34,788	123.6	6
7	Ford Motor Co.	IL, Chicago	Cook	945.7	5,141,209	5,436.4	7
8	Diamond Star	IL, Normal	McLean	1,183.6	137,579	116.2	8
9	General Motors	IN, Fort Wayne	Allen	657.3	307,690	468.1	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	499.8	134,428	269.0	10
11	General Motors	KS, Kansas City	Wyandotte	151.4	155,072	1,024.3	11
12	General Motors	KY, Bowling Green	Warren	545.2	83,049	152.3	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	285.2	26,790	93.9	13
14	Ford Motor Co.	KY, Louisville	Jefferson	385.1	672,310	1,745.8	14
15	Ford Motor Co.	KY, Louisville	Jefferson	385.1	672,310	1,745.8	15
16	General Motors	LA, Shreveport	Caddo	882.1	246,777	279.8	16
17	General Motors	MD, Baltimore	Baltimore City	80.8	702,979	8,700.2	17
18	Ford Motor Co.	MI, Dearborn	Wayne	614.1	2,064,819	3,362.3	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	614.1	2,064,819	3,362.3	19
20	General Motors	MI, Detroit	Wayne	614.1	2,064,819	3,362.3	20
21	General Motors	MI, Detroit	Wayne	614.1	2,064,819	3,362.3	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	614.1	2,064,819	3,362.3	22
23	General Motors	MI, Flint	Genesee	639.7	433,297	677.3	23
24	General Motors (Buick City)	MI, Flint	Genesee	639.7	433,297	677.3	24
25	General Motors	MI, Lake Orion	Oakland	872.7	1,142,013	1,308.6	25
26	General Motors	MI, Lansing	Ingham	559.2	278,426	497.9	26
27	General Motors	MI, Lansing	Ingham	559.2	278,426	497.9	27
28	General Motors	MI, Pontiac	Oakland	872.7	1,142,013	1,308.6	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	480.4	728,902	1,517.3	29
30	Chrysler Corp.	MI, Warren	Macomb	480.4	728,902	1,517.3	30
31	Ford Motor Co.	MI, Wayne	Wayne	614.1	2,064,819	3,362.3	31
32	Ford Motor Co.	MI, Wayne	Wayne	614.1	2,064,819	3,362.3	32
33	Ford Motor Co.	MI, Wixom	Oakland	872.7	1,142,013	1,308.6	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	155.8	483,404	3,102.7	34
35	Ford Motor Co.	MO, Claycomo	Clay	396.5	163,334	411.9	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	507.8	1,005,096	1,979.3	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	507.8	1,005,096	1,979.3	37
38	General Motors	MO, Wentzville	St. Charles	561.4	239,288	426.2	38
39	Ford Motor Co.	NJ, Edison	Middlesex	310.6	692,869	2,230.7	39
40	General Motors	NJ, Linden	Union	103.3	496,230	4,803.8	40
41	General Motors	NY, N. Tarrytown	Westchester	432.9	888,945	2,053.5	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	492.6	279,408	567.2	42
43	Honda	OH, E. Liberty	Logan	458.5	44,706	97.5	43
44	Ford Motor Co.	OH, Lorain	Lorain	492.6	279,408	567.2	44
45	General Motors	OH, Lordstown	Trumbull	615.8	228,832	371.6	45
46	Honda (Marysville)	OH, Marysville	Union	436.7	35,421	81.1	46
47	General Motors	OH, Moraine	Montgomery	461.7	572,137	1,239.2	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	340.4	457,635	1,344.4	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	340.4	457,635	1,344.4	49
50	General Motors	OK, Oklahoma	Oklahoma	709.2	623,752	879.5	50
51	BMW Manufacturing	SC, Greer	Spartanburg	811.0	237,568	292.9	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	619.0	140,701	227.3	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	612.9	63,889	104.2	53
54	General Motors	TX, Arlington	Tarrant	863.5	1,257,196	1,455.9	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	53.8	241,426	4,487.5	55
56	General Motors	WI, Janesville	Rock	720.5	145,958	202.6	56

COUNTY ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

					POPULATION CHARACTERISTICS, 1990 (%)								
					Race or Ethnicity						*Age*		
				TOTAL POPULATION			American Indian,	Asian &		Hispanic			
	COMPANY			1990	White	Black	Eskimo, Aleut	Pacific Islander	Other Race	Origin	< 5 yrs	> 75 yrs	
	NAME	STATE, CITY	COUNTY	(bb)	(bb)	(bb)	(bb)	(bb)	(bb)	(bb, dd)	(bb)	(bb)	
	United States			**248,709,873**	**80.3**	**12.1**	**0.8**	**2.9**	**3.9**	**9.0**	**7.4**	**5.3**	
1	NUMMI	CA, Fremont	Alameda	1,279,182	59.6	17.9	0.7	15.1	6.8	14.2	7.5	4.4	1
2	Chrysler Corp.	DE, Newark	New Castle	441,946	80.4	16.5	0.2	1.6	1.3	2.7	7.2	4.4	2
3	General Motors	DE, Wilmington	New Castle	441,946	80.4	16.5	0.2	1.6	1.3	2.7	7.2	4.4	3
4	General Motors	GA, Doraville	DeKalb	545,837	53.6	42.2	0.2	3.0	1.1	2.9	7.1	3.3	4
5	Ford Motor Co.	GA, Hapeville	Fulton	648,951	47.8	49.9	0.2	1.3	0.9	2.1	7.4	4.4	5
6	Chrysler Corp.	IL, Belvidere	Boone	30,806	95.3	0.4	0.1	0.5	3.7	6.7	7.6	5.1	6
7	Ford Motor Co.	IL, Chicago	Cook	5,105,067	62.8	25.8	0.2	3.7	7.5	13.6	7.5	5.1	7
8	Diamond Star	IL, Normal	McLean	129,180	93.7	4.3	0.2	1.3	0.6	1.3	6.6	4.8	8
9	General Motors	IN, Fort Wayne	Allen	300,836	87.8	10.1	0.3	0.9	1.0	1.9	7.9	4.8	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	130,598	93.4	2.0	0.2	3.7	0.6	1.6	6.3	4.1	10
11	General Motors	KS, Kansas City	Wyandotte	161,993	67.1	27.5	0.7	1.2	3.6	6.8	8.3	5.6	11
12	General Motors	KY, Bowling Green	Warren	76,673	90.7	8.2	0.1	0.8	0.1	0.6	6.4	4.8	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	23,867	93.0	6.3	0.1	0.4	0.1	0.4	6.8	4.8	13
14	Ford Motor Co.	KY, Louisville	Jefferson	664,937	81.9	17.1	0.2	0.7	0.2	0.7	6.8	5.6	14
15	Ford Motor Co.	KY, Louisville	Jefferson	664,937	81.9	17.1	0.2	0.7	0.2	0.7	6.8	5.6	15
16	General Motors	LA, Shreveport	Caddo	248,253	59.0	40.1	0.2	0.4	0.2	1.0	7.9	5.8	16
17	General Motors	MD, Baltimore	Baltimore City	736,014	39.1	59.2	0.3	1.1	0.3	1.0	7.7	5.8	17
18	Ford Motor Co.	MI, Dearborn	Wayne	2,111,687	57.4	40.2	0.4	1.0	1.0	2.4	8.1	4.9	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	2,111,687	57.4	40.2	0.4	1.0	1.0	2.4	8.1	4.9	19
20	General Motors	MI, Detroit	Wayne	2,111,687	57.4	40.2	0.4	1.0	1.0	2.4	8.1	4.9	20
21	General Motors	MI, Detroit	Wayne	2,111,687	57.4	40.2	0.4	1.0	1.0	2.4	8.1	4.9	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	2,111,687	57.4	40.2	0.4	1.0	1.0	2.4	8.1	4.9	22
23	General Motors	MI, Flint	Genesee	430,459	78.2	19.6	0.7	0.7	0.8	2.1	7.8	4.1	23
24	General Motors (Buick City)	MI, Flint	Genesee	430,459	78.2	19.6	0.7	0.7	0.8	2.1	7.8	4.1	24
25	General Motors	MI, Lake Orion	Oakland	430,459	89.6	7.2	0.4	2.3	0.6	1.8	7.2	4.4	25
26	General Motors	MI, Lansing	Ingham	281,912	84.1	9.9	0.7	2.7	2.6	4.8	7.4	3.7	26
27	General Motors	MI, Lansing	Ingham	281,912	84.1	9.9	0.7	2.7	2.6	4.8	7.4	3.7	27
28	General Motors	MI, Pontiac	Oakland	1,083,592	89.6	7.2	0.4	2.3	0.6	1.8	7.2	4.4	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	717,400	96.7	1.4	0.4	1.3	0.2	1.1	6.8	4.6	29
30	Chrysler Corp.	MI, Warren	Macomb	717,400	96.7	1.4	0.4	1.3	0.2	1.1	6.8	4.6	30
31	Ford Motor Co.	MI, Wayne	Wayne	2,111,687	57.4	40.2	0.4	1.0	1.0	2.4	8.1	4.9	31
32	Ford Motor Co.	MI, Wayne	Wayne	2,111,687	57.4	40.2	0.4	1.0	1.0	2.4	8.1	4.9	32
33	Ford Motor Co.	MI, Wixom	Oakland	1,083,592	89.6	7.2	0.4	2.3	0.6	1.8	7.2	4.4	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	485,765	88.0	4.7	0.9	5.1	1.3	2.9	8.0	5.6	34
35	Ford Motor Co.	MO, Claycomo	Clay	153,411	96.3	1.8	0.5	0.7	0.7	2.3	7.4	4.0	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	993,529	84.2	14.0	0.1	1.4	0.2	1.0	7.0	5.6	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	993,529	84.2	14.0	0.1	1.4	0.2	1.0	7.0	5.6	37
38	General Motors	MO, Wentzville	St. Charles	212,907	96.5	2.3	0.2	0.7	0.3	1.1	8.9	2.7	38
39	Ford Motor Co.	NJ, Edison	Middlesex	671,780	81.9	8.0	0.2	6.7	3.3	8.9	6.7	4.2	39
40	General Motors	NJ, Linden	Union	493,819	74.4	18.8	0.2	2.8	3.8	13.7	6.6	6.1	40
41	General Motors	NY, N. Tarrytown	Westchester	874,866	79.4	13.7	0.2	3.7	3.1	9.9	6.6	6.4	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	271,126	89.1	7.8	0.3	0.5	2.3	5.6	7.4	4.5	42
43	Honda	OH, E. Liberty	Logan	42,310	97.3	1.9	0.1	0.6	0.1	0.4	7.4	6.0	43
44	Ford Motor Co.	OH, Lorain	Lorain	271,126	89.1	7.8	0.3	0.5	2.3	5.6	7.4	4.5	44
45	General Motors	OH, Lordstown	Trumbull	227,813	92.6	6.7	0.1	0.4	0.2	0.6	6.7	5.4	45
46	Honda (Marysville)	OH, Marysville	Union	31,969	95.6	3.7	0.2	0.4	0.2	0.5	7.3	4.8	46
47	General Motors	OH, Moraine	Montgomery	573,809	80.8	17.7	0.2	1.0	0.3	0.8	7.4	5.0	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	462,361	82.2	14.8	0.3	1.1	1.6	3.4	7.8	5.5	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	462,361	82.2	14.8	0.3	1.1	1.6	3.4	7.8	5.5	49
50	General Motors	OK, Oklahoma	Oklahoma	599,611	77.0	14.7	4.1	2.0	2.2	4.2	7.6	5.1	50
51	BMW Manufacturing	SC, Greer	Spartanburg	226,800	78.2	20.7	0.1	0.8	0.2	0.7	6.7	5.0	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	118,570	89.2	9.0	0.2	1.4	0.2	0.8	7.5	3.4	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	54,812	83.7	15.7	0.1	0.3	0.2	0.6	7.1	5.7	53
54	General Motors	TX, Arlington	Tarrant	1,170,103	78.4	12.0	0.5	2.5	6.5	12.0	8.5	3.3	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	261,229	56.7	39.1	0.4	2.6	1.2	2.9	8.3	4.1	55
56	General Motors	WI, Janesville	Rock	139,510	93.8	4.8	0.3	0.7	0.5	1.3	7.7	5.6	56

COUNTY ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

					COUNTY RESIDENTS EDUCATIONAL ATTAINMENT 1990			
	COMPANY NAME	STATE, CITY	COUNTY	TOTAL POPULATION 1990 (bb)	% Not Completing High School (bb, ee, ff)	% Completing High School or More (bb, ff)	% Completing College or More (bb, ff)	
	United States			**248,709,873**	**24.8**	**75.2**	**20.3**	
1	NUMMI	CA, Fremont	Alameda	1,279,182	18.6	81.4	28.8	1
2	Chrysler Corp.	DE, Newark	New Castle	441,946	19.4	80.6	25.2	2
3	General Motors	DE, Wilmington	New Castle	441,946	19.4	80.6	25.2	3
4	General Motors	GA, Doraville	DeKalb	545,837	16.1	83.9	32.7	4
5	Ford Motor Co.	GA, Hapeville	Fulton	648,951	22.2	77.8	31.6	5
6	Chrysler Corp.	IL, Belvidere	Boone	30,806	24.5	75.5	12.0	6
7	Ford Motor Co.	IL, Chicago	Cook	5,105,067	26.6	73.4	22.8	7
8	Diamond Star	IL, Normal	McLean	129,180	15.3	84.7	29.0	8
9	General Motors	IN, Fort Wayne	Allen	300,836	18.8	81.2	19.0	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	130,598	14.8	85.2	30.7	10
11	General Motors	KS, Kansas City	Wyandotte	161,993	30.1	69.9	10.3	11
12	General Motors	KY, Bowling Green	Warren	76,673	29.1	70.9	19.2	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	23,867	30.9	69.1	15.2	13
14	Ford Motor Co.	KY, Louisville	Jefferson	664,937	25.9	74.1	19.3	14
15	Ford Motor Co.	KY, Louisville	Jefferson	664,937	25.9	74.1	19.3	15
16	General Motors	LA, Shreveport	Caddo	248,253	26.6	73.4	18.2	16
17	General Motors	MD, Baltimore	Baltimore City	736,014	39.3	60.7	15.5	17
18	Ford Motor Co.	MI, Dearborn	Wayne	2,111,687	30.0	70.0	13.7	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	2,111,687	30.0	70.0	13.7	19
20	General Motors	MI, Detroit	Wayne	2,111,687	30.0	70.0	13.7	20
21	General Motors	MI, Detroit	Wayne	2,111,687	30.0	70.0	13.7	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	2,111,687	30.0	70.0	13.7	22
23	General Motors	MI, Flint	Genesee	430,459	23.2	76.8	12.8	23
24	General Motors (Buick City)	MI, Flint	Genesee	430,459	23.2	76.8	12.8	24
25	General Motors	MI, Lake Orion	Oakland	1,083,592	15.4	84.6	30.2	25
26	General Motors	MI, Lansing	Ingham	281,912	16.1	83.9	29.2	26
27	General Motors	MI, Lansing	Ingham	281,912	16.1	83.9	29.2	27
28	General Motors	MI, Pontiac	Oakland	1,083,592	15.4	84.6	30.2	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	717,400	23.1	76.9	13.5	29
30	Chrysler Corp.	MI, Warren	Macomb	717,400	23.1	76.9	13.5	30
31	Ford Motor Co.	MI, Wayne	Wayne	2,111,687	30.0	70.0	13.7	31
32	Ford Motor Co.	MI, Wayne	Wayne	2,111,687	30.0	70.0	13.7	32
33	Ford Motor Co.	MI, Wixom	Oakland	1,083,592	15.4	84.6	30.2	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	485,765	15.0	85.0	28.8	34
35	Ford Motor Co.	MO, Claycomo	Clay	153,411	15.3	84.7	20.0	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	993,529	17.7	82.3	29.2	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	993,529	17.7	82.3	29.2	37
38	General Motors	MO, Wentzville	St. Charles	212,907	16.7	83.3	21.2	38
39	Ford Motor Co.	NJ, Edison	Middlesex	671,780	20.6	79.4	26.5	39
40	General Motors	NJ, Linden	Union	493,819	24.8	75.2	25.0	40
41	General Motors	NY, N. Tarrytown	Westchester	874,866	19.0	81.0	35.3	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	271,126	24.7	75.3	12.3	42
43	Honda	OH, E. Liberty	Logan	42,310	25.5	74.5	8.9	43
44	Ford Motor Co.	OH, Lorain	Lorain	271,126	24.7	75.3	12.3	44
45	General Motors	OH, Lordstown	Trumbull	227,813	24.8	75.2	11.4	45
46	Honda (Marysville)	OH, Marysville	Union	31,969	23.8	76.2	12.0	46
47	General Motors	OH, Moraine	Montgomery	573,809	22.2	77.8	20.0	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	462,361	23.8	76.2	17.0	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	462,361	23.8	76.2	17.0	49
50	General Motors	OK, Oklahoma	Oklahoma	599,611	20.9	79.1	22.6	50
51	BMW Manufacturing	SC, Greer	Spartanburg	226,800	37.0	63.0	14.3	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	118,570	26.1	73.9	18.7	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	54,812	34.8	65.2	12.1	53
54	General Motors	TX, Arlington	Tarrant	1,170,103	20.1	79.9	24.0	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	261,229	27.3	72.7	16.8	55
56	General Motors	WI, Janesville	Rock	139,510	21.8	78.2	13.3	56

COUNTY ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

7/14/97

				COUNTY RESIDENTS INCOME LEVEL AND EMPLOYMENT							
				Per Capita Personal Income	Per Capita Personal Income	*Median Household Income*		Pct. Below	Total	Unemployment	
				(dollars)	(dollars)	Total	Pct. Change	Poverty Level	Employment	Rate (%)	
	COMPANY			1989	1993	(dollars)	1979-1989	(families)	(Civilian labor force)	(Civilian labor force)	
	NAME	STATE, CITY	COUNTY	(aa, gg, hh)	(aa, gg, ii)	1989 (bb)	(bb, jj)	1989 (bb, kk)	1994 (bb)	1994 (bb)	
	United States			**17,690**	**20,800**	**30,056**	**6.5**	**10.0**	**131,056,000**	**6.1**	
1	NUMMI	CA, Fremont	Alameda	20,558	24,234	37,544	19.8	8.1	686,656	6.2	1
2	Chrysler Corp.	DE, Newark	New Castle	20,774	24,320	38,617	17.2	5.0	248,779	4.7	2
3	General Motors	DE, Wilmington	New Castle	20,774	24,320	38,617	17.2	5.0	248,779	4.7	3
4	General Motors	GA, Doraville	DeKalb	20,057	22,973	35,721	7.3	7.2	346,016	5.2	4
5	Ford Motor Co.	GA, Hapeville	Fulton	24,236	29,823	29,978	27.9	15.4	368,741	5.6	5
6	Chrysler Corp.	IL, Belvidere	Boone	17,309	18,732	35,103	1.0	5.7	17,955	6.1	6
7	Ford Motor Co.	IL, Chicago	Cook	20,131	23,983	32,673	1.6	11.1	2,624,956	5.9	7
8	Diamond Star	IL, Normal	McLean	17,110	20,238	31,366	0.9	5.9	78,167	3.5	8
9	General Motors	IN, Fort Wayne	Allen	18,312	21,498	31,835	-0.5	5.6	172,822	4.5	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	14,472	17,936	27,630	0.4	6.8	71,755	3.6	10
11	General Motors	KS, Kansas City	Wyandotte	12,916	15,465	23,780	-8.2	13.9	79,816	8.3	11
12	General Motors	KY, Bowling Green	Warren	14,162	17,476	24,175	2.5	13.3	44,761	3.8	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	14,704	18,410	27,563	7.9	12.4	13,958	3.6	13
14	Ford Motor Co.	KY, Louisville	Jefferson	17,985	22,372	27,092	-3.0	10.9	363,151	4.6	14
15	Ford Motor Co.	KY, Louisville	Jefferson	17,985	22,372	27,092	-3.0	10.9	363,151	4.6	15
16	General Motors	LA, Shreveport	Caddo	14,759	18,775	22,395	-13.1	19.1	115,473	7.4	16
17	General Motors	MD, Baltimore	Baltimore City	17,078	20,182	24,045	12.0	17.8	319,075	8.7	17
18	Ford Motor Co.	MI, Dearborn	Wayne	17,104	19,912	27,997	-10.3	16.9	929,642	6.5	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	17,104	19,912	27,997	-10.3	16.9	929,642	6.5	19
20	General Motors	MI, Detroit	Wayne	17,104	19,912	27,997	-10.3	16.9	929,642	6.5	20
21	General Motors	MI, Detroit	Wayne	17,104	19,912	27,997	-10.3	16.9	929,642	6.5	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	17,104	19,912	27,997	-10.3	16.9	929,642	6.5	22
23	General Motors	MI, Flint	Genesee	16,165	19,139	31,030	-11.8	14.0	202,337	7.7	23
24	General Motors (Buick City)	MI, Flint	Genesee	16,165	19,139	31,030	-11.8	14.0	202,337	7.7	24
25	General Motors	MI, Lake Orion	Oakland	26,193	29,781	43,407	2.3	4.4	624,067	4.3	25
26	General Motors	MI, Lansing	Ingham	16,281	19,464	30,162	-0.5	11.0	149,806	4.5	26
27	General Motors	MI, Lansing	Ingham	16,281	19,464	30,162	-0.5	11.0	149,806	4.5	27
28	General Motors	MI, Pontiac	Oakland	26,193	29,781	43,407	2.3	4.4	624,067	4.3	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	19,557	22,691	38,931	-4.1	4.0	396,979	5.6	29
30	Chrysler Corp.	MI, Warren	Macomb	19,557	22,691	38,931	-4.1	4.0	396,979	5.6	30
31	Ford Motor Co.	MI, Wayne	Wayne	17,104	19,912	27,997	-10.3	16.9	929,642	6.5	31
32	Ford Motor Co.	MI, Wayne	Wayne	17,104	19,912	27,997	-10.3	16.9	929,642	6.5	32
33	Ford Motor Co.	MI, Wixom	Oakland	26,193	29,781	43,407	2.3	4.4	624,067	4.3	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	19,489	23,826	32,043	0.9	8.1	282,876	3.2	34
35	Ford Motor Co.	MO, Claycomo	Clay	18,041	20,345	34,370	-2.5	4.2	93,051	3.6	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	23,705	28,186	38,127	2.8	4.0	543,371	3.6	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	23,705	28,186	38,127	2.8	4.0	543,371	3.6	37
38	General Motors	MO, Wentzville	St. Charles	17,877	20,057	40,307	7.3	3.5	127,252	3.8	38
39	Ford Motor Co.	NJ, Edison	Middlesex	22,392	25,771	45,623	19.3	3.4	376,993	5.8	39
40	General Motors	NJ, Linden	Union	24,568	28,659	41,791	15.3	5.3	255,949	7.2	40
41	General Motors	NY, N. Tarrytown	Westchester	30,785	35,945	48,405	27.1	4.7	438,027	4.9	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	15,441	18,200	31,098	-8.9	9.1	134,091	5.8	42
43	Honda	OH, E. Liberty	Logan	14,097	17,740	26,857	8.3	8.1	23,547	4.8	43
44	Ford Motor Co.	OH, Lorain	Lorain	15,441	18,200	31,098	-8.9	9.1	134,091	5.8	44
45	General Motors	OH, Lordstown	Trumbull	16,421	19,262	28,186	-13.9	9.4	111,244	7.3	45
46	Honda (Marysville)	OH, Marysville	Union	16,815	19,003	33,244	13.6	5.7	15,706	4.5	46
47	General Motors	OH, Moraine	Montgomery	17,748	20,713	30,111	1.9	9.6	283,954	4.9	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	17,324	20,188	28,245	-4.9	12.0	229,109	5.8	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	17,324	20,188	28,245	-4.9	12.0	229,109	5.8	49
50	General Motors	OK, Oklahoma	Oklahoma	16,661	19,587	26,129	-5.3	11.3	310,445	5.1	50
51	BMW Manufacturing	SC, Greer	Spartanburg	14,597	17,484	26,941	6.5	8.8	126,252	4.6	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	15,454	18,498	30,878	15.7	7.6	75,653	3.3	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	13,505	17,275	26,238	6.3	11.0	38,559	4.5	53
54	General Motors	TX, Arlington	Tarrant	17,491	21,501	32,335	3.5	8.2	703,579	5.5	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	14,360	17,198	23,563	12.4	15.1	96,849	6.4	55
56	General Motors	WI, Janesville	Rock	15,809	19,233	30,632	-4.6	7.8	75,770	5.2	56

COUNTY ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

				EMPLOYMENT IN COUNTY					
				Total Employment	Manufacturing Employment	Mfgr as % Total Employment	Assembly Plant Employment		
	COMPANY			1993	1993	1993	Total 1994	Pct. of 1993 Mfgr. Employment	
	NAME	STATE, CITY	COUNTY	(bb, ll)	(bb, ll)	(bb, mm)	(nn)	(oo)	
	United States			**94,789,444**	**18,183,381**	**19.2**	**210,376**	**1.2**	
1	NUMMI	CA, Fremont	Alameda	501,857	81,338	16.2	4,250	5.2	1
2	Chrysler Corp.	DE, Newark	New Castle	228,265	46,864	20.5	3,726	8.0	2
3	General Motors	DE, Wilmington	New Castle	228,265	48,864	21.4	3,104	6.4	3
4	General Motors	GA, Doraville	DeKalb	282,420	31,462	11.1	2,713	8.6	4
5	Ford Motor Co.	GA, Hapeville	Fulton	553,470	53,505	9.7	2,696	5.0	5
6	Chrysler Corp.	IL, Belvidere	Boone	9,200	4,618	50.2	4,063	88.0	6
7	Ford Motor Co.	IL, Chicago	Cook	2,314,172	440,312	19.0	2,773	0.6	7
8	Diamond Star	IL, Normal	McLean	66,614	9,293	14.0	3,200	34.4	8
9	General Motors	IN, Fort Wayne	Allen	161,360	38,085	23.6	2,830	7.4	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	51,019	15,051	29.5	1,970	13.1	10
11	General Motors	KS, Kansas City	Wyandotte	62,726	14,534	23.2	3,435	23.6	11
12	General Motors	KY, Bowling Green	Warren	34,931	8,085	23.1	1,051	13.0	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	11,691	6,074	52.0	6,000	98.8	13
14	Ford Motor Co.	KY, Louisville	Jefferson	352,412	62,608	17.8	3,237	5.2	14
15	Ford Motor Co.	KY, Louisville	Jefferson	352,412	62,608	17.8	3,682	5.9	15
16	General Motors	LA, Shreveport	Caddo	99,057	15,244	15.4	2,793	18.3	16
17	General Motors	MD, Baltimore	Baltimore City	297,523	39,246	13.2	3,836	9.8	17
18	Ford Motor Co.	MI, Dearborn	Wayne	699,446	182,126	26.0	2,245	1.2	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	699,446	182,126	26.0	4,384	2.4	19
20	General Motors	MI, Detroit	Wayne	699,446	182,126	26.0	NA	NA	20
21	General Motors	MI, Detroit	Wayne	699,446	182,126	26.0	5,083	2.8	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	699,446	182,126	26.0	3,800	2.1	22
23	General Motors	MI, Flint	Genesee	152,084	49,494	32.5	5,500	11.1	23
24	General Motors (Buick City)	MI, Flint	Genesee	152,084	49,494	32.5	12,699	25.7	24
25	General Motors	MI, Lake Orion	Oakland	615,083	104,973	17.1	5,557	5.3	25
26	General Motors	MI, Lansing	Ingham	123,621	24,790	20.1	7,790	31.4	26
27	General Motors	MI, Lansing	Ingham	123,621	24,790	20.1	NA	NA	27
28	General Motors	MI, Pontiac	Oakland	615,083	104,973	17.1	8,040	7.7	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	284,514	99,437	34.9	3,360	3.4	29
30	Chrysler Corp.	MI, Warren	Macomb	284,514	99,437	34.9	4,218	4.2	30
31	Ford Motor Co.	MI, Wayne	Wayne	699,446	182,126	26.0	3,781	2.1	31
32	Ford Motor Co.	MI, Wayne	Wayne	699,446	182,126	26.0	2,063	1.1	32
33	Ford Motor Co.	MI, Wixom	Oakland	615,083	104,973	17.1	3,858	3.7	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	270,220	61,270	22.7	2,063	3.4	34
35	Ford Motor Co.	MO, Claycomo	Clay	65,066	15,262	23.5	4,642	30.4	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	516,683	94,997	18.4	5,874	6.2	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	516,683	94,997	18.4	2,393	2.5	37
38	General Motors	MO, Wentzville	St. Charles	64,556	13,490	20.9	3,972	29.4	38
39	Ford Motor Co.	NJ, Edison	Middlesex	321,099	66,545	20.7	1,704	2.6	39
40	General Motors	NJ, Linden	Union	205,342	49,930	24.3	2,975	6.0	40
41	General Motors	NY, N. Tarrytown	Westchester	356,364	47,084	13.2	2,521	5.4	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	83,845	29,217	34.8	3,440	11.8	42
43	Honda	OH, E. Liberty	Logan	14,096	4,586	32.5	1,800	39.2	43
44	Ford Motor Co.	OH, Lorain	Lorain	83,845	29,217	34.8	4,056	13.9	44
45	General Motors	OH, Lordstown	Trumbull	81,764	34,135	41.7	8,817	25.8	45
46	Honda (Marysville)	OH, Marysville	Union	17,066	9,843	57.7	5,300	53.8	46
47	General Motors	OH, Moraine	Montgomery	262,892	63,129	24.0	3,627	5.7	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	195,005	35,577	18.2	5,410 (pp)	15 (qq)	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	195,005	35,577	18.2	5,410 (pp)	15 (qq)	49
50	General Motors	OK, Oklahoma	Oklahoma	290,937	40,935	14.1	4,707	11.5	50
51	BMW Manufacturing	SC, Greer	Spartanburg	102,388	37,719	36.8	530 (proj)	NA	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	52,430	19,738	37.6	5,900	29.9	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	23,964	9,709	40.5	7,871	81.1	53
54	General Motors	TX, Arlington	Tarrant	479,171	94,393	19.7	4,193	4.4	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	107,289	12,463	11.6	1,802	14.5	55
56	General Motors	WI, Janesville	Rock	54,342	18,187	33.5	4,982	27.4	56

SOURCES AND NOTES FOR COUNTY ECONOMIC AND DEMOGRAPHIC DATA

Sources:

(aa) U.S. Department of Commerce, Economics, and Statistics Administration, Bureau of the Census. *USA Counties 1996*.

(bb) Slater, Courtenay M. and George E. Hall, eds. *1996 County and City Extra: Annual Metro, City and County Data Book*. Lanham, MD: Bernam Press, 1996.

Notes:

NA = Not available

(cc) Calculated by dividing total persons (1994) by land area (in square miles, 1990). Land area includes dry land and land temporarily or partially covered by water, such as marshlands and river floodplains.

(dd) Hispanic persons may be of any race.

(ee) Percent not completing high school equals 100 percent minus percent of completing high school or more.

(ff) These values reflect percentages for persons 25 years old or over.

(gg) Per capita personal income consists of wage and salary earnings, including pension rights and employer provided health insurance; interest income; rental income; and any business or government transfer payments, such as food stamps or Medicare payments.

(hh) Based on the resident population enumerated as of April 1, 1990.

(ii) Based on the resident population estimated as of July 1, 1993.

(jj) Based on constant 1989 dollars.

(kk) Families are defined as a householder and all relatives living together.

(ll) Includes private nonfarm establishments, employment and payroll only. Figures pertain to the pay period including March 12, 1993.

(mm) Calculated by dividing the number of manufacturing employees by the total number of employees.

(nn) See II-1, Industry-Wide Data: U.S. Auto and Light Duty Truck Assembly Plants.

(oo) Calculated by dividing the number of assembly plant employees (1994) by the total number of manufacturing employees (1993).

(pp) Combined employment of plants #48 and #49.

(qq) Represents the combined employment totals for plants #48 and #49.

Data sources used were not always complete or current. Attempts were made to verify data, but errors may still exist.

DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF ASSEMBLY PLANT COMMUNITIES
1990 POPULATION AND POPULATION DENSITY

	COMPANY NAME	STATE, CITY	COUNTY	Population within 3 mi. radius 1990	Population Density for 3 mi. radius
1	NUMMI	CA, Fremont,	Alameda	31,245	1,108
2	Chrysler Corp.	DE, Newark	New Castle	48,194	1,709
3	General Motors	DE, Wilmington	New Castle	75,394	2,674
4	General Motors	GA, Doraville	DeKalb	66,429	2,356
5	Ford Motor Co.	GA, Hapeville	Fulton	45,106	1,600
6	Chrysler Corp.	IL, Belvidere	Boone	11,539	409
7	Ford Motor Co.	IL, Chicago	Cook	140,409	4,979
8	Diamond Star	IL, Normal	McLean	8,704	309
9	General Motors	IN, Fort Wayne	Allen	4,010	142
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	5,084	180
11	General Motors	KS, Kansas City	Wyandotte	35,991	1,276
12	General Motors	KY, Bowling Green	Warren	6,135	218
13	Toyota Motor Mfg.	KY, Georgetown	Scott	2,125	75
14	Ford Motor Co.	KY, Louisville	Jefferson	34,733	1,232
15	Ford Motor Co.	KY, Louisville	Jefferson	60,709	2,153
16	General Motors	LA, Shreveport	Caddo	7,319	260
17	General Motors	MD, Baltimore	Baltimore City	154,713	5,486
18	Ford Motor Co.	MI, Dearborn	Wayne	148,078	5,251
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	149,365	5,297
20	General Motors	MI, Detroit	Wayne	194,925	6,912
21	General Motors	MI, Detroit	Wayne	179,460	6,364
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	34,709	1,231
23	General Motors	MI, Flint	Genesee	77,212	2,738
24	General Motors (Buick City)	MI, Flint	Genesee	121,252	4,300
25	General Motors	MI, Lake Orion	Oakland	18,619	660
26	General Motors	MI, Lansing	Ingham	988,011	35,038
27	General Motors	MI, Lansing	Ingham	113,204	4,121
28	General Motors	MI, Pontiac	Oakland	87,477	3,102
29	Chrysler Corp.	MI, Sterling Heights	Macomb	91,523	3,245
30	Chrysler Corp.	MI, Warren	Macomb	151,734	5,381
31	Ford Motor Co.	MI, Wayne	Wayne	70,441	2,498
32	Ford Motor Co.	MI, Wayne	Wayne	65,041	2,306
33	Ford Motor Co.	MI, Wixom	Oakland	14,618	518
34	Ford Motor Co.	MN, St. Paul	Ramsey	148,859	5,279
35	Ford Motor Co.	MO, Claycomo	Clay	25,001	887
36	Chrysler Corp.	MO, St. Louis	St. Louis	49,805	1,766
37	Ford Motor Co.	MO, St. Louis	St. Louis	76,268	2,705
38	General Motors	MO, Wentzville	St. Charles	9,823	348
39	Ford Motor Co.	NJ, Edison	Middlesex	136,804	4,851
40	General Motors	NJ, Linden	Union	141,985	5,035
41	General Motors	NY, N. Tarrytown	Westchester	35,873	1,272
42	Ford Motor Co.	OH, Avon Lake	Lorain	15,231	540
43	Honda	OH, E. Liberty	Logan	1,025	36
44	Ford Motor Co.	OH, Lorain	Lorain	8,551	303
45	General Motors	OH, Lordstown	Trumbull	3,349	119
46	Honda (Marysville)	OH, Marysville	Union	990	35
47	General Motors	OH, Moraine	Montgomery	48,660	1,726
48	Chrysler Corp.	OH, #1 Toledo	Lucas	149,604	5,305
49	Chrysler Corp.	OH, #2 Toledo	Lucas	na	na
50	General Motors	OK, Oklahoma	Oklahoma	25,325	898
51	BMW Manufacturing	SC, Greer	Spartanburg	6,376	226
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	16,475	584
53	General Motors (Saturn)	TN, Spring Hill	Maury	1,905	68
54	General Motors	TX, Arlington	Tarrant	89,242	3,165
55	Ford Motor Co.	VA, Norfolk	Norfolk City	743,302	26,358
56	General Motors	WI, Janesville	Rock	42,571	1,510
SOURCE: 1990 Census of Population and analysis by EPA Region 4; see Appendix I					

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF ASSEMBLY PLANT COMMUNITIES
MINORITY PERCENTAGE 1990

	COMPANY NAME	STATE, CITY	COUNTY	CENSUS BLOCK	CUMULATIVE 0 to 1 Mile	CUMULATIVE 0 to 3 Miles	CUMULATIVE 1 to 3 Miles	CUMULATIVE 3 to 5 Miles	COUNTY	STATE	
1	NUMMI	CA, Fremont,	Alameda	25	33	33	33	33	40	31	1
2	Chrysler Corp.	DE, Newark	New Castle	9	9	9	9	10	20	20	2
3	General Motors	DE, Wilmington	New Castle	5	14	21	22	31	20	20	3
4	General Motors	GA, Doraville	DeKalb	37	29	23	23	18	46	29	4
5	Ford Motor Co.	GA, Hapeville	Fulton	46	31	58	60	67	52	29	5
6	Chrysler Corp.	IL, Belvidere	Boone	2	6	6	6	2	5	22	6
7	Ford Motor Co.	IL, Chicago	Cook	7	8	28	30	63	37	22	7
8	Diamond Star	IL, Normal	McLean	0	3	7	7	8	6	22	8
9	General Motors	IN, Fort Wayne	Allen	0	0	1	1	1	12	9	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	4	2	7	7	3	7	9	10
11	General Motors	KS, Kansas City	Wyandotte	0	0	35	35	27	33	10	11
12	General Motors	KY, Bowling Green	Warren	17	13	6	5	14	9	8	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	<1	0	24	24	7	7	8	13
14	Ford Motor Co.	KY, Louisville	Jefferson	3	15	9	8	5	18	8	14
15	Ford Motor Co.	KY, Louisville	Jefferson	0	6	10	10	13	18	8	15
16	General Motors	LA, Shreveport	Caddo	32	31	26	26	28	41	33	16
17	General Motors	MD, Baltimore	Baltimore City	26	9	13	14	57	61	29	17
18	Ford Motor Co.	MI, Dearborn	Wayne	1	8	27	28	56	43	17	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	100	88	72	71	53	43	17	19
20	General Motors	MI, Detroit	Wayne	100	96	82	81	82	43	17	20
21	General Motors	MI, Detroit	Wayne	0	73	82	82	83	43	17	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	3	3	2	2	2	43	17	22
23	General Motors	MI, Flint	Genesee	0	5	18	19	38	22	17	23
24	General Motors (Buick City)	MI, Flint	Genesee	75	64	51	49	21	22	17	24
25	General Motors	MI, Lake Orion	Oakland	2	2	8	8	14	10	17	25
26	General Motors	MI, Lansing	Ingham	41	44	4	4	3	16	17	26
27	General Motors	MI, Lansing	Ingham	53	40	25	22	3	16	17	27
28	General Motors	MI, Pontiac	Oakland	83	87	38	31	5	10	17	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	0	2	3	3	3	3	17	29
30	Chrysler Corp.	MI, Warren	Macomb	2	9	39	42	38	3	17	30
31	Ford Motor Co.	MI, Wayne	Wayne	0	3	7	7	15	43	17	31
32	Ford Motor Co.	MI, Wayne	Wayne	0	3	7	7	14	43	17	32
33	Ford Motor Co.	MI, Wixom	Oakland	0	1	2	2	2	10	17	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	2	5	8	9	27	12	6	34
35	Ford Motor Co.	MO, Claycomo	Clay	5	3	3	2	3	4	12	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	0	0	2	2	3	16	12	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	0	12	14	14	10	16	12	37
38	General Motors	MO, Wentzville	St. Charles	19	14	7	6	5	4	12	38
39	Ford Motor Co.	NJ, Edison	Middlesex	23	10	12	12	20	18	21	39
40	General Motors	NJ, Linden	Union	0	12	31	33	21	26	21	40
41	General Motors	NY, N. Tarrytown	Westchester	1	11	15	16	31	21	26	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	0	2	1	1	11	11	12	42
43	Honda	OH, E. Liberty	Logan	2	1	1	1	<0.5	3	12	43
44	Ford Motor Co.	OH, Lorain	Lorain	0	0	3	3	7	11	12	44
45	General Motors	OH, Lordstown	Trumbull	5	4	3	3	2	7	12	45
46	Honda (Marysville)	OH, Marysville	Union	0	1	2	2	2	4	12	46
47	General Motors	OH, Moraine	Montgomery	0	6	18	19	29	19	12	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	54	40	34	33	15	18	12	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	na	na	na	na	na	na	na	49
50	General Motors	OK, Oklahoma	Oklahoma	37	28	26	26	19	23	18	50
51	BMW Manufacturing	SC, Greer	Spartanburg	0	5	14	15	18	22	31	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	7	3	5	5	7	11	17	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	2	3	8	8	8	16	17	53
54	General Motors	TX, Arlington	Tarrant	0	31	26	26	19	22	25	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	55	73	12	12	43	43	23	55
56	General Motors	WI, Janesville	Rock	0	1	2	2	1	6	8	56

SOURCE: 1990 Census of Population and analysis by EPA Region 4; see Appendix I.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF ASSEMBLY PLANT COMMUNITIES
PERCENT OF 1989 HOUSEHOLDS BELOW POVERTY LEVEL FOR 4-PERSON HOUSEHOLDS

	COMPANY NAME	STATE, CITY	COUNTY	CENSUS BLOCK	CUMULATIVE 0 to 1 Mile	CUMULATIVE 0 to 3 Miles	CUMULATIVE 1 to 3 Miles	CUMULATIVE 3 to 5 Miles	COUNTY	STATE	
1	NUMMI	CA, Fremont,	Alameda	0	2	2	2	5	15	15	1
2	Chrysler Corp.	DE, Newark	New Castle	19	18	11	10	7	20	15	2
3	General Motors	DE, Wilmington	New Castle	2	16	16	15	14	20	15	3
4	General Motors	GA, Doraville	DeKalb	13	11	10	9	7	13	21	4
5	Ford Motor Co.	GA, Hapeville	Fulton	16	16	27	27	25	23	21	5
6	Chrysler Corp.	IL, Belvidere	Boone	11	22	15	13	5	13	18	6
7	Ford Motor Co.	IL, Chicago	Cook	7	13	20	20	21	19	18	7
8	Diamond Star	IL, Normal	McLean	0	8	13	13	23	17	18	8
9	General Motors	IN, Fort Wayne	Allen	2	2	11	11	7	15	19	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	10	8	21	22	10	15	19	10
11	General Motors	KS, Kansas City	Wyandotte	0	22	24	24	27	27	21	11
12	General Motors	KY, Bowling Green	Warren	30	26	19	17	35	28	30	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	23	21	27	27	24	24	30	13
14	Ford Motor Co.	KY, Louisville	Jefferson	2	6	6	6	7	23	30	14
15	Ford Motor Co.	KY, Louisville	Jefferson	27	18	21	21	22	23	30	15
16	General Motors	LA, Shreveport	Caddo	22	22	15	14	14	31	31	16
17	General Motors	MD, Baltimore	Baltimore City	6	20	20	20	31	28	13	17
18	Ford Motor Co.	MI, Dearborn	Wayne	5	37	32	32	33	26	20	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	41	58	38	36	32	26	20	19
20	General Motors	MI, Detroit	Wayne	50	54	50	50	43	26	20	20
21	General Motors	MI, Detroit	Wayne	0	53	49	48	44	26	20	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	19	9	10	10	8	26	20	22
23	General Motors	MI, Flint	Genesee	0	21	28	28	26	23	20	23
24	General Motors (Buick City)	MI, Flint	Genesee	50	49	37	35	23	23	20	24
25	General Motors	MI, Lake Orion	Oakland	10	6	6	6	13	11	20	25
26	General Motors	MI, Lansing	Ingham	8	30	3	3	2	20	20	26
27	General Motors	MI, Lansing	Ingham	67	46	26	22	2	20	20	27
28	General Motors	MI, Pontiac	Oakland	44	29	22	21	6	11	20	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	0	5	6	6	8	12	20	29
30	Chrysler Corp.	MI, Warren	Macomb	35	22	25	25	29	12	20	30
31	Ford Motor Co.	MI, Wayne	Wayne	13	11	15	16	10	26	20	31
32	Ford Motor Co.	MI, Wayne	Wayne	13	6	15	16	10	26	20	32
33	Ford Motor Co.	MI, Wixom	Oakland	15	13	7	7	4	11	20	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	56	12	15	15	26	17	18	34
35	Ford Motor Co.	MO, Claycomo	Clay	19	7	7	7	10	12	23	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	0	10	5	5	5	11	23	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	0	9	10	10	10	11	23	37
38	General Motors	MO, Wentzville	St. Charles	27	22	12	10	8	9	23	38
39	Ford Motor Co.	NJ, Edison	Middlesex	2	6	10	11	11	10	13	39
40	General Motors	NJ, Linden	Union	0	11	11	11	13	13	13	40
41	General Motors	NY, N. Tarrytown	Westchester	12	12	10	10	6	12	20	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	25	10	7	7	19	18	21	42
43	Honda	OH, E. Liberty	Logan	10	8	10	10	13	22	21	43
44	Ford Motor Co.	OH, Lorain	Lorain	15	13	17	17	19	18	21	44
45	General Motors	OH, Lordstown	Trumbull	12	14	14	13	13	21	21	45
46	Honda (Marysville)	OH, Marysville	Union	18	17	15	14	13	16	21	46
47	General Motors	OH, Moraine	Montgomery	54	16	16	16	24	20	21	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	45	24	32	33	24	23	21	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	na	na	na	na	na	na	na	49
50	General Motors	OK, Oklahoma	Oklahoma	0	2	9	9	16	22	27	50
51	BMW Manufacturing	SC, Greer	Spartanburg	17	18	20	20	24	22	24	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	21	10	11	11	12	18	26	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	8	11	13	13	14	25	26	53
54	General Motors	TX, Arlington	Tarrant	0	20	18	17	13	16	23	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	70	42	9	8	18	25	17	55
56	General Motors	WI, Janesville	Rock	0	16	9	8	14	18	19	56

SOURCE: 1990 Census of Population and analysis by EPA Region 4; see Appendix I.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF ASSEMBLY PLANT COMMUNITIES
PERCENTAGE OF 1990 POPULATION 18 YEARS AND OLDER NOT COMPLETING HIGH SCHOOL

	COMPANY NAME	STATE, CITY	COUNTY	CENSUS BLOCK	CUMULATIVE 0 to 1 Mile	CUMULATIVE 0 to 3 Miles	CUMULATIVE 1 to 3 Miles	CUMULATIVE 3 to 5 Miles	COUNTY	STATE	
1	NUMMI	CA, Fremont,	Alameda	10	7	12	12	16	19	25	1
2	Chrysler Corp.	DE, Newark	New Castle	6	3	10	12	14	19	22	2
3	General Motors	DE, Wilmington	New Castle	36	27	23	22	16	19	22	3
4	General Motors	GA, Doraville	DeKalb	25	22	13	13	8	17	29	4
5	Ford Motor Co.	GA, Hapeville	Fulton	39	35	38	38	29	22	29	5
6	Chrysler Corp.	IL, Belvidere	Boone	23	32	28	27	15	25	23	6
7	Ford Motor Company	IL, Chicago	Cook	18	22	32	33	27	26	23	7
8	Diamond Star	IL, Normal	McLean	31	21	9	9	11	13	23	8
9	General Motors	IN, Fort Wayne	Allen	17	16	15	15	11	19	24	9
10	Subaru-Isuzu	IN, Lafayette	Tippecanoe	16	13	16	16	13	12	24	10
11	General Motors	KS, Kansas City	Wyandotte	0	14	24	24	21	30	19	11
12	General Motors	KY, Bowling Green	Warren	37	33	25	24	27	26	34	12
13	Toyota Motor Mfg.	KY, Georgetown	Scott	29	27	33	33	26	29	34	13
14	Ford Motor Co.	KY, Louisville	Jefferson	3	6	10	10	9	26	34	14
15	Ford Motor Co.	KY, Louisville	Jefferson	25	29	30	30	27	26	34	15
16	General Motors	LA, Shreveport	Caddo	20	26	16	16	17	27	31	16
17	General Motors	MD, Baltimore	Baltimore City	44	42	39	38	36	38	21	17
18	Ford Motor Co.	MI, Dearborn	Wayne	9	54	41	41	33	30	23	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	Wayne	84	48	36	35	33	30	23	19
20	General Motors	MI, Detroit	Wayne	30	42	44	44	43	30	23	20
21	General Motors	MI, Detroit	Wayne	0	55	45	45	41	30	23	21
22	Auto Alliance Intl.	MI, Flat Rock	Wayne	27	16	18	18	18	30	23	22
23	General Motors	MI, Flint	Genesee	0	16	26	26	22	24	23	23
24	General Motors (Buick City)	MI, Flint	Genesee	32	43	31	30	24	24	23	24
25	General Motors	MI, Lake Orion	Oakland	30	25	15	14	19	16	23	25
26	General Motors	MI, Lansing	Ingham	14	24	21	20	10	15	23	26
27	General Motors	MI, Lansing	Ingham	41	30	20	19	9	15	23	27
28	General Motors	MI, Pontiac	Oakland	60	39	26	24	13	16	23	28
29	Chrysler Corp.	MI, Sterling Heights	Macomb	17	21	17	17	18	22	23	29
30	Chrysler Corp.	MI, Warren	Macomb	30	38	34	34	29	22	23	30
31	Ford Motor Co.	MI, Wayne	Wayne	48	21	25	26	21	30	23	31
32	Ford Motor Co.	MI, Wayne	Wayne	48	18	24	24	21	30	23	32
33	Ford Motor Co.	MI, Wixom	Oakland	36	29	12	11	11	16	23	33
34	Ford Motor Co.	MN, St. Paul	Ramsey	29	12	12	12	14	15	17	34
35	Ford Motor Co.	MO, Claycomo	Clay	20	14	14	14	14	16	26	35
36	Chrysler Corp.	MO, St. Louis	St. Louis	0	25	12	12	13	18	26	36
37	Ford Motor Co.	MO, St. Louis	St. Louis	0	17	19	19	19	18	26	37
38	General Motors	MO, Wentzville	St. Charles	29	26	19	18	20	17	26	38
39	Ford Motor Co.	NJ, Edison	Middlesex	14	17	15	15	17	20	23	39
40	General Motors	NJ, Linden	Union	0	29	26	25	21	24	23	40
41	General Motors	NY, N. Tarrytown	Westchester	8	20	18	17	15	19	25	41
42	Ford Motor Co.	OH, Avon Lake	Lorain	26	20	20	20	25	25	24	42
43	Honda	OH, E. Liberty	Logan	20	18	18	18	20	26	24	43
44	Ford Motor Co.	OH, Lorain	Lorain	11	13	24	24	23	25	24	44
45	General Motors	OH, Lordstown	Trumbull	24	23	23	23	23	24	24	45
46	Honda (Marysville)	OH, Marysville	Union	21	20	20	20	20	24	24	46
47	General Motors	OH, Moraine	Montgomery	48	22	17	17	20	22	24	47
48	Chrysler Corp.	OH, #1 Toledo	Lucas	63	30	28	28	22	23	24	48
49	Chrysler Corp.	OH, #2 Toledo	Lucas	na	na	na	na	na	na	na	49
50	General Motors	OK, Oklahoma	Oklahoma	19	11	12	12	19	21	25	50
51	BMW Manufacturing	SC, Greer	Spartanburg	38	42	43	44	31	36	31	51
52	Nissan Motor Mfg.	TN, Smyrna	Rutherford	33	29	25	24	25	24	32	52
53	General Motors (Saturn)	TN, Spring Hill	Maury	29	34	30	30	29	35	32	53
54	General Motors	TX, Arlington	Tarrant	0	25	20	20	15	21	28	54
55	Ford Motor Co.	VA, Norfolk	Norfolk City	53	41	34	33	19	23	24	55
56	General Motors	WI, Janesville	Rock	0	21	17	16	19	22	21	56

SOURCE: 1990 Census of Population and analysis by EPA Region 4; see Appendix I.

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

ASSEMBLY PLANT LOCATION AND ID NUMBERS

7/15/97

	COMPANY	STATE & CITY	ADDRESS	ZIP	COUNTY	RCRA I.D.#	AIRS I.D.#	NPDES I.D.#	TRI #	
1	NUMMI	CA, Fremont,	45500 Fremont Blvd	94538	Alameda	CAD000051433	?	CA0006076	94538NWNTD45500	1
2	Chrysler Corp.	DE, Newark	550 S. College Ave	19714	New Castle	DED002357408	AFS1000300005	-	19714NWRKS550SO	2
3	General Motors	DE, Wilmington	Boxwood & Dodson Rds	19804	New Castle	DED002369205	AFS1000300015	DE0000523	19899CPCWLPOBOX	3
4	General Motors	GA, Doraville	3900 Motors Industrial Way	30360	DeKalb	GAD003310810	AFS1308900086	GA0001767	30360GNRLM3900M	4
5	Ford Motor Co.	GA, Hapeville (Atlanta)	340 Henry Ford II Ave.	30354	Fulton	GAD003305307	AFS1312100364	GA0001716	30354FRDMT340HE	5
6	Chrysler Corp.	IL, Belvidere	3000 W. Chrysler Drive	61008	Boone	ILD 001874320	AFS1700700001	-	61008BLVDR3000W	6
7	Ford Motor Co.	IL, Chicago	12600 S. Torrence Ave.	60633	Cook	ILD 060364882	AFS1703101168	IL0039802	60633FRDMT12600	7
8	Diamond Star	IL, Normal	100 N. Diamond Star Pkwy.	61761	McLean	ILD 982072357	AFS17113Z0069	IL0065269	61761DMNDS100ND	8
9	General Motors	IN, Fort Wayne (Roanoke)	12200 Lafayette Ctr Rd.	46783	Allen	IND115304594	AFS1800360036	IN0055689	46783GMCTR12200	9
10	Subaru-Isuzu	IN, Lafayette	5500 State Road 38 East	47905	Tippecanoe	IND 984866491	AFS1815700050	IN0053996	47903SBRSZ5500S	10
11	General Motors	KS, Kansas City (Fairfax)	3201 Fairfax Trafficway	66115	Wyandotte	KSD981126253	AFS2020900046	KS0085626	66115GMCCP3201F	11
12	General Motors	KY, Bowling Green	600 Corvette Drive	42102	Warren	KYD 000622993	AFS2122700005	KY0007954	42101GNRLMI65US	12
13	Toyota Motor Mfg.	KY, Georgetown	1001 Cherry Blossom Way	40324	Scott	KYD 161955380	AFS2120900030	KY0089508	40324TYTMT1001C	13
14	Ford Motor Co.	KY, Louisville	3001 Chamberlain Lane	40241	Jefferson	KYD 053351227	AFS2111100073	KY0097454	40222FRDMT3001C	14
15	Ford Motor Co.	KY, Louisville	Fern Valley Rd. @ Grade Ln.	40213	Jefferson	KYD 071315899	AFS2111100072	KY0002658	40213FRDMTFERNV	15
16	General Motors	LA, Shreveport	7600 GM Blvd.	71130	Caddo	LAD089317341	?	LA0053694	71130TRCKN7600G	16
17	General Motors	MD, Baltimore	2122 Broening Hwy.	21234	Baltimore City	MDD003091972	AFS2451000354	MD0001163	21224GNRLM2122B	17
18	Ford Motor Co.	MI, Dearborn	3001 Miller Road	48121	Wayne	MID000809764	AFS2616300191	-	48121FRDM23001M	18
19	Chrysler Corp.(Jefferson N)	MI, Detroit	2101 Conner Ave.	48215	Wayne	MID985569987	AFS2616303677	-	48215CHRYL2101C	19
20	General Motors	MI, Detroit	601 Piquette Ave.	48202	Wayne	MID076380583	AFS2616309014	-	48202GMCTR601PI	20
21	General Motors	MI, Detroit	2500 E. General Motors Blvd.	48211	Wayne	MID980795488	AFS2616303252	-	48211CDLLC2500E	21
22	Auto Alliance Intl.	MI, Flat Rock	1 International Drive	48134	Wayne	MID981953912	AFS2616303579	-	48134MZDMT1MAZD	22
23	General Motors	MI, Flint	G-3100 Van Slyke Rd.	48551	Genesee	MID005356951	?	MI0001104	48551GMCTRG3100	23
24	General Motors (Buick City)	MI, Flint	902 E. Hamilton Ave.	48550	Genesee	MID005356712	AFS2604900025	MI0001597	48550BCFLN902EH	24
25	General Motors	MI, Lake Orion	4555 Giddings Road	48359	Oakland	MID000718544	AFS2612500260	MI0042099	48055GNRLM4555G	25
26	General Motors	MI, Lansing (C)	920 Townsend (Lansing #1)	48921	Ingham	MID005356894	AFS2606500023	-	48921BCLNS920TO	26
27	General Motors	MI, Lansing (M)	401 N. Verlinden Ave.(Lansing Body)	48901	Ingham	MID005356928	AFS2606500035	-	48921BCLNS401NO	27
28	General Motors	MI, Pontiac	820 Opdyke Rd.	48342	Oakland	MID005356902	AFS2612500182	-	48058GMCTR820OP	28
29	Chrysler Corp.	MI, Sterling Heights	38111 Van Dyke	48312	Macomb	MID980896690	AFS0026590007	MI0000345	48077STRLN38111	29
30	Chrysler Corp.	MI, Warren	21500 Mound Road	48091	Macomb	MID005358007	AFS2609900107	MI0048968	48091WRRNT21500	30
31	Ford Motor Co.	MI, Wayne	37625 Michigan Ave.	48184	Wayne	MID005379706	AFS2616300502	MI0046183	48184FRDMT37625	31
32	Ford Motor Co.	MI, Wayne	38303 Michigan Ave.	48184	Wayne	MID000809228	AFS2616300379	MI0003387	48184FRDMT38303	32
33	Ford Motor Co.	MI, Wixom	28801 Wixom Rd.	48393	Oakland	MID005379714	AFS0010670010	MI0028151	48096FRDMT50000	33
34	Ford Motor Co.	MN, St. Paul	966 S. Mississippi River Blvd.	55116	Ramsey	MND006207773	AFS2712300039	MN0002178	55116FRDMT966SM	34
35	Ford Motor Co.	MO, Claycomo (Kansas City)	Hwy 69	64119	Clay	MOD007118078	AFS2904700019	MO00004936	64119FRDMTHWY69	35
36	Chrysler Corp.	MO, St. Louis (Fenton)	1050 Dodge Dr.	63026	St. Louis	MOD085002319	?	MO0000167	63026STLSS1050D	36
37	Ford Motor Co.	MO, St. Louis (Hazelwood)	6250 No. Lindbergh Blvd	63042	St. Louis	MOD006272876	?	MO0004944	63042FRDMT6250N	37
38	General Motors	MO, Wentzville	1500 E. Rte. A	63385	St. Charles	MOT300010261	AFS2918300076	MO0100153	63358BCGRP1500E	38
39	Ford Motor Co.	NJ, Edison	939 U.S. Hwy 1	08818	Middlesex	NJD002143782	AFS3402300044	NJ0002691	08818FRDMT939US	39
40	General Motors	NJ, Linden	1016 W. Edgar Rd.	07036	Union	NJD002186690	AFS3403900008	NJ0035947	07036GNRLM1016W	40
41	General Motors	NY, N. Tarrytown	199 Beekman Ave.	10591	Westchester	NYD002026565	AFS3611900008	-	10591GNRLM199BE	41
42	Ford Motor Co.	OH, Avon Lake	650 Miller Rd.	44012	Lorain	OHD020626669	AFS3909300056	-	44012FRDMT650MI	42
43	Honda	OH, E. Liberty	11000 State Route 347	43319	Logan	OHD986968204	AFS3909100010	OH0105210	43319HNDFM11000	43
44	Ford Motor Co.	OH, Lorain	5401 Baumhart Rd.	44053	Lorain	OHD004227815	AFS3909300006	OH0001082	44053FRDMT5401B	44
45	General Motors	OH, Lordstown	2300 Hallock Young Road	44481	Trumbull	OHD020632998	AFS3915500176	-	44482BCLRD2300H	45
46	Honda (Marysville)	OH, Marysville	24000 Honda Pkwy.	43040	Union	OHD987027828	AFS0001090010	OH0097039	43040HNDFM24000	46
47	General Motors	OH, Moraine	2601 W. Stroop Rd.	45439	Montgomery	OHD041063074	AFS3911300150	-	45439GNRLM2601W	47
48	Chrysler Corp.	OH, #1 Toledo	1000 Jeep Parkway	43612	Lucas	OHD 048784862	?	OH0002721	43612CHRYS1000J	48
49	Chrysler Corp.	OH, #2 Toledo	4000 Stickney Ave.	43657	Lucas	OHD048784920	?	-	43612CHRYS4000S	49
50	General Motors	OK, Oklahoma City	7447 SE 74th St.	73125	Oklahoma	OKD082565714	AFS4010900044	OK0035203	73134GNRLM7447S	50
51	BMW Manufacturing	SC, Greer		29334	Spartanburg	SCD000110288	AFS4508300230	-	29651BMWN1400H	51
52	Nissan Motor Mfg.	TN, Smyrna	983 Nissan Drive	37167	Rutherford	TND054481205	AFS4714900155	-	37167NSSNMNISSA	52
53	General Motors (Saturn)	TN, Spring Hill	100 Saturn Pkwy	37174	Maury	TND981468648	AFS4711900132	-	37174STRNC100SA	53
54	General Motors	TX, Arlington	2525 East Abram St.	76010	Tarrant	TXD008018004	?	TX0094251	76010GNRLM2525E	54
55	Ford Motor Co.	VA, Norfolk	2424 Springfield Ave.	23523	Norfolk City	VAD003177391	AFS5171000009	VA0004910	23523FRDMT2424S	55
56	General Motors	WI, Janesville	1000 Industrial Ave.	53545	Rock	WID059980045	AFS5510500004	WI0000194	53545GMBC 1000I	56

Data sources used were not always complete or current.

At[redacted] have [redacted] made t[redacted] date[redacted] rors m[redacted] exist.[redacted]

[redacted]

Part III:

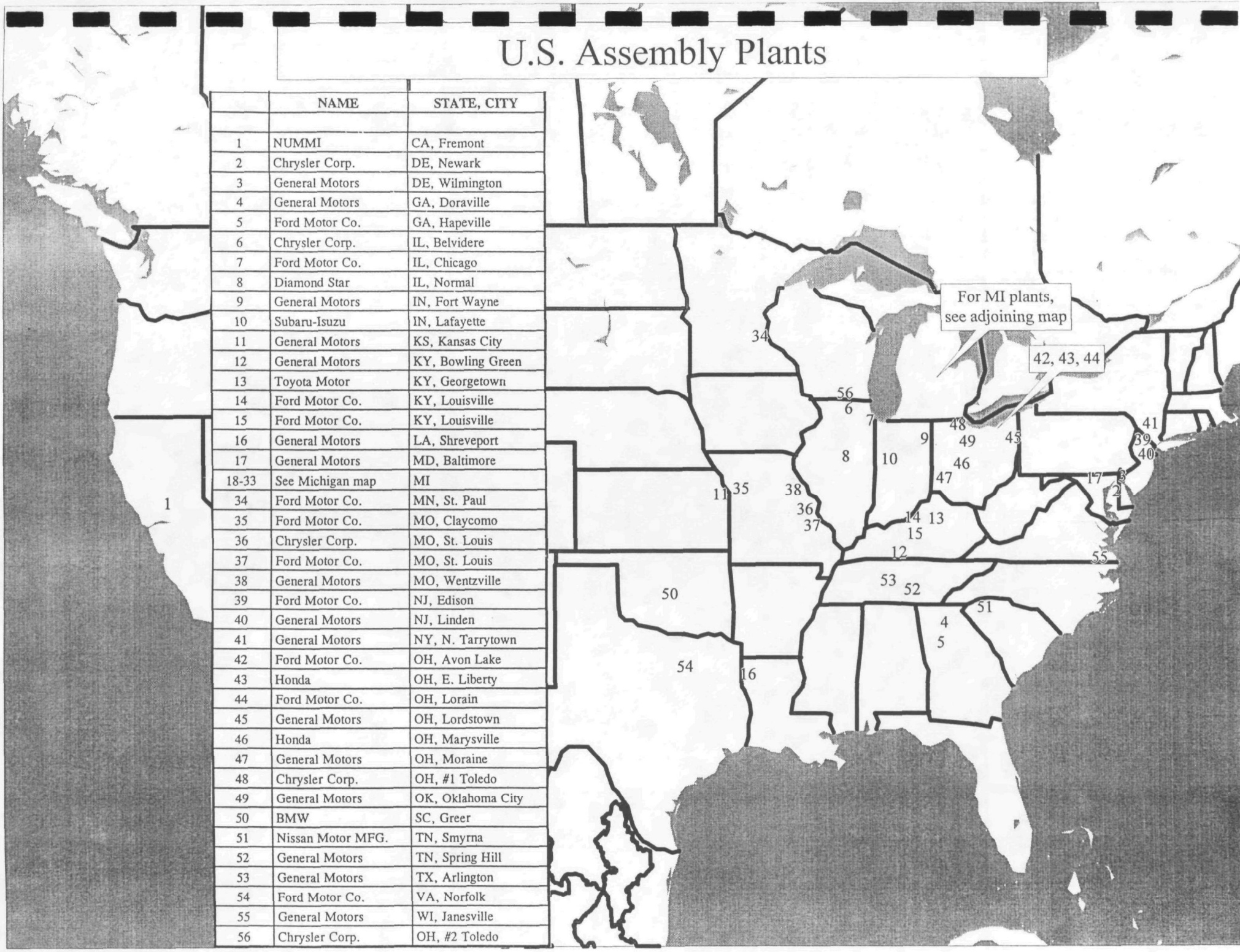
Assembly Plant- and Community-Specific Data

Example for one plant-community. Profiles for additional plants and their communities can be obtained from:

Keith Mason
U.S. Environmental Protection Agency (6103)
401 M Street, S.W.
Washington, D.C. 20460
(202) 260-5580 (phone)

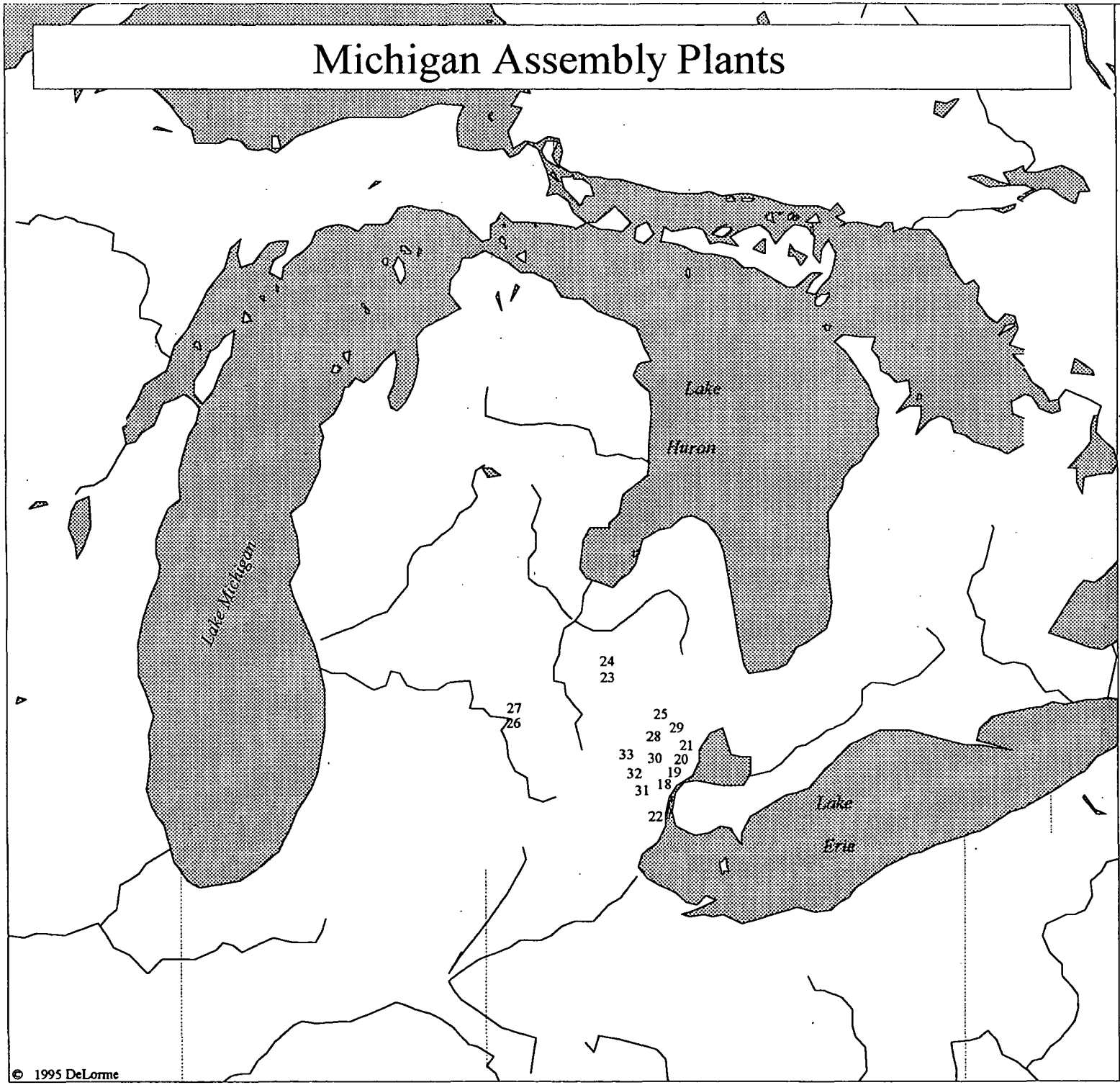
July 15, 1997

U.S. Assembly Plants



	NAME	STATE, CITY
1	NUMMI	CA, Fremont
2	Chrysler Corp.	DE, Newark
3	General Motors	DE, Wilmington
4	General Motors	GA, Doraville
5	Ford Motor Co.	GA, Hapeville
6	Chrysler Corp.	IL, Belvidere
7	Ford Motor Co.	IL, Chicago
8	Diamond Star	IL, Normal
9	General Motors	IN, Fort Wayne
10	Subaru-Isuzu	IN, Lafayette
11	General Motors	KS, Kansas City
12	General Motors	KY, Bowling Green
13	Toyota Motor	KY, Georgetown
14	Ford Motor Co.	KY, Louisville
15	Ford Motor Co.	KY, Louisville
16	General Motors	LA, Shreveport
17	General Motors	MD, Baltimore
18-33	See Michigan map	MI
34	Ford Motor Co.	MN, St. Paul
35	Ford Motor Co.	MO, Claycomo
36	Chrysler Corp.	MO, St. Louis
37	Ford Motor Co.	MO, St. Louis
38	General Motors	MO, Wentzville
39	Ford Motor Co.	NJ, Edison
40	General Motors	NJ, Linden
41	General Motors	NY, N. Tarrytown
42	Ford Motor Co.	OH, Avon Lake
43	Honda	OH, E. Liberty
44	Ford Motor Co.	OH, Lorain
45	General Motors	OH, Lordstown
46	Honda	OH, Marysville
47	General Motors	OH, Moraine
48	Chrysler Corp.	OH, #1 Toledo
49	General Motors	OK, Oklahoma City
50	BMW	SC, Greer
51	Nissan Motor MFG.	TN, Smyrna
52	General Motors	TN, Spring Hill
53	General Motors	TX, Arlington
54	Ford Motor Co.	VA, Norfolk
55	General Motors	WI, Janesville
56	Chrysler Corp.	OH, #2 Toledo

Michigan Assembly Plants



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State Boundary
National Boundary
Land
Lake, Ocean, Large River
River, Canal

	NAME	CITY
18	Ford	Dearborn
19	Chrysler	Detroit
20	General Motors	Detroit
21	General Motors	Detroit
22	A.A.I.	Flat Rock
23	General Motors	Flint
24	GM (Buick)	Flint
25	General Motors	Lake Orion
26	General Motors	Lansing
27	General Motors	Lansing
28	General Motors	Pontiac
29	Chrysler	Sterling Heights
30	Chrysler	Warren
31	Ford	Wayne
32	Ford	Wayne
33	Ford	Wixom

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Plant-Community Profile:
Ford Motor Co.
Hapeville GA

7/15/97

LOCATION

Address: 340 Henry Ford II Ave, Hapeville GA 30354
Lat/Long: latitude (degrees N): 33 39' 6"
longitude (degrees W): 84 24' 9"
County: Fulton MSA: Atlanta GA
Other counties within 3 miles of plant: DeKalb, Clayton

DESCRIPTION

Produced Ford Taurus and Mercury Sable in 1994.

ID NUMBERS

RCRA ID	GAD003305307
AIRS ID	AFS1312100364
NPDES ID	GA0001716
TRI	30354FRDMT340HE

OPERATIONS

	Production	Employment
Calendar Year: 1991	210,715	
1992	275,232	
1993	279,018	
1994	275,222	2,696

PLANT ENVIRONMENTAL PROFILE

RCRA BIENNIAL REPORT

Waste Code(s)	*Wastewater?*	*Physical Form*	*Source*	*Mgd. On/Off-Site*	*Management Method*	*Quantity Generated (tons)*	*Quantity Shipped (tons)*	*Quantity Mgd. On-Site (tons)*
1991								
D001 (ignitable)	N	B203 org. liquids	A04 flush rinsing	Off	M029 solvents recov.	0.5	0.5	0.0
D002 (corrosive)	N	519 inorg. sludge	A01 stripping	Off	M032 oth. recov.	94.0	94.0	0.0
F003, F005 (nonhalog. solvents)	N	B203 org. liquids	A04 flush rinsing	Off	M029 solvents recov.	423.5	423.5	0.0
F003, F005 (nonhalog. solvents)	N	B203 org. liquids	A04 flush rinsing	Off	M061 fuel blending	349.7	349.7	0.0
TOTAL - 1991						*867.6*	*867.6*	*0.0*
1993								
D002 (corrosive)	N	502 inorg sludge	A01 stripping	Off	M032 oth. recov.	118.8	118.8	0.0
D003 (reactive)	N	B203 org. liquid	A04 flush rinsing	Off	M141 transfer facil.	0.8	0.8	0.0
F002, D006, D007	N	B407 org. solids	A01 stripping	Off	M061 fuel blending	21.2	21.2	0.0
F003, F005 (nonhalog solvents)	N	B203 org. liquid	A04 flush rinsing	Off	M029 solvents recov.	418.8	332.2	0.0
F003, F005 (nonhalog solvents)	N	B203 org. liquid	A04 flush rinsing	Off	M061 fuel blending	402.8	11.6	0.0
TOTAL - 1993						*962.5*	*484.7*	*0.0*

TOXICS RELEASE INVENTORY

Total lbs of TRI chemicals:	*Air-Fugitive Emissions*	*Air-Stack Emissions*	*Total Releases*	*Discharge to POTW*	*Off-Site Energy Recovery*	*Off-Site Recycling*	*Off-Site Treatment*	*Off-Site Disposal*	*Total Transfers*
1991	215,069	775,512	990,581	4,851	7,234	522,167	13,008	35,700	582,960
1992	163,033	1,013,141	1,176,174	5,709	9,639	653,700	23,011	42,090	734,149
1993	168,713	988,771	1,157,484	8,040	0	990,020	34,420	90,430	1,122,910
1994	46,942	1,102,089	1,149,031	27,367	11,321	1,537,430	85,000	55,431	1,716,549
Lbs. per vehicle produced:									
1991	1.02	3.68	4.70	0.02	0.03	2.48	0.06	0.17	2.77
1992	0.59	3.68	4.27	0.02	0.04	2.38	0.08	0.15	2.67
1993	0.60	3.54	4.15	0.03	0.00	3.55	0.12	0.32	4.02
1994	0.17	4.00	4.17	0.10	0.04	5.59	0.31	0.20	6.24

PLANT ENVIRONMENTAL PROFILE (continued)

1994 TRI Emissions/Releases by Chemical (lbs.)

Chemical Name	Air-Fugitive Emissions	Air-Stack Emissions	Total Releases	Discharge to POTW	Off-Site Energy Recovery	Off-Site Recycling	Off-Site Treatment	Off-Site Disposal	Total Transfers
METHANOL	1,200	49,000	50,200	0	650	3,200	0	0	3,850
N-BUTYL ALCOHOL	740	150,000	150,740	0	1,900	9,600	0	0	11,500
BENZENE	21	57	78	0	0	0	0	0	0
METHYL ETHYL KETONE	10,000	34,000	44,000	0	440	2,200	0	0	2,640
ETHYLBENZENE	520	100,000	100,520	0	76	870,000	0	0	870,076
ETHYLENE GLYCOL	0	0	0	4,000	0	0	56,000	0	60,000
METHYL ISOBUTYL KETONE	2,000	60,000	62,000	0	270	310,000	0	0	310,270
TOLUENE	2,200	8,200	10,400	0	85	430	0	0	515
CYCLOHEXANE	1	2	3	0	0	0	0	0	0
DI(2-ETHYLHEXYL) PHTHALATE	0	0	0	0	0	0	0	320	320
XYLENE (MIXED ISOMERS)	26,000	450,000	476,000	0	5,400	330,000	0	0	335,400
METHYL TERT-BUTYL ETHER	210	560	770	0	0	0	0	0	0
BARIUM COMPOUNDS	0	270	270	700	0	0	29,000	28,900	58,600
GLYCOL ETHERS	1,300	250,000	251,300	22,000	2,500	12,000	0	0	36,500
LEAD COMPOUNDS	0	0	0	37	0	0	0	210	247
MANGANESE COMPOUNDS	2,500	0	2,500	270	0	0	0	12,000	12,270
ZINC COMPOUNDS	250	0	250	360	0	0	0	14,001	14,361
TOTAL	***46,942***	***1,102,089***	***1,149,031***	***27,367***	***11,321***	***1,537,430***	***85,000***	***55,431***	***1,716,549***

VOC/NOx Emissions:

(lbs/year)	VOCs	NOx
1990	2,170,000*	NA
1991	NA	NA
1992	2,890,000	77,760
1993	3,252,000	54,600
1994	3,382,000	72,880

*estimate

Plant-Community Profile:
Ford Motor Co.
Hapeville GA

7/15/97

COMMUNITY ENVIRONMENTAL PROFILE

TRI Chemical Releases & Transfers from Sources Within 3 Miles of Auto/LDT Plant (lbs.)

	Facility (w. map #)	*Air-Fugitive Emissions*	*Air-Stack Emissions*	*Total Releases*	*Discharge to POTW*	*Off-Site Transfers*	*Total Transfers*
1	INTERNATIONAL PAPER	9,060	3,020	12,080	0	750	750
2	SPENCER COS. INC. S. ICE DIV.	0	0	0	0	0	0
3	CI HOLDINGS INC. SSC IND.	5	750	755	250	0	250
4	GENERAL CHEMICAL CORP. ATLANT	0	4,455	4,455	0	0	0
5	OWENS-BROCKWAY GLASS CONTAI	2,500	66,850	69,350	0	340	340
6	KEEBLER CO.	0	83,000	83,000	0	0	0
7	SOUTHERN ZINC	0	0	0	0	0	0
8	CATO OIL & GREASE CO.	0	0	0	5	0	5
9	TREASURE CHEST ADVERTISING	0	0	0	0	0	0
10	COCA-COLA USA	0	0	0	0	0	0
11	TIME PRODS. INC.	0	0	0	0	0	0
13	AIR TREADS INC. ATLANTA DIV.	0	0	0	0	0	0
14	AMERICAN NATIONAL CAN CO.	38,107	230,914	269,021	5	43	48
15	H. B. FULLER CO.	0	0	0	190	470	660
16	CLOROX CO.	0	9	9	263	0	263
17	MURPHY & ORR CO.	0	0	0	0	0	0
18	MERICO INC.	0	0	0	0	0	0
19	SAMUEL BINGHAM CO.	0	0	0	0	7,100	7,100
20	CARGILL INC. CHEMICAL PRODUCTS	5,669	3,425	9,094	32	163,807	163,839
	Total	***55,341***	***392,423***	***447,764***	***745***	***172,510***	***173,255***

Air Quality Attainment Status (as of 1994)*

ozone - nonattainment (serious)
carbon monoxide - attainment or unclassifiable
particulates - unclassifiable
lead - unclassifiable
NO2 - cannot be classified or better than national standards
SO2 - attainment

* No changes in status since 1994

Plant-Community Profile:
Ford Motor Co.
Hapeville GA

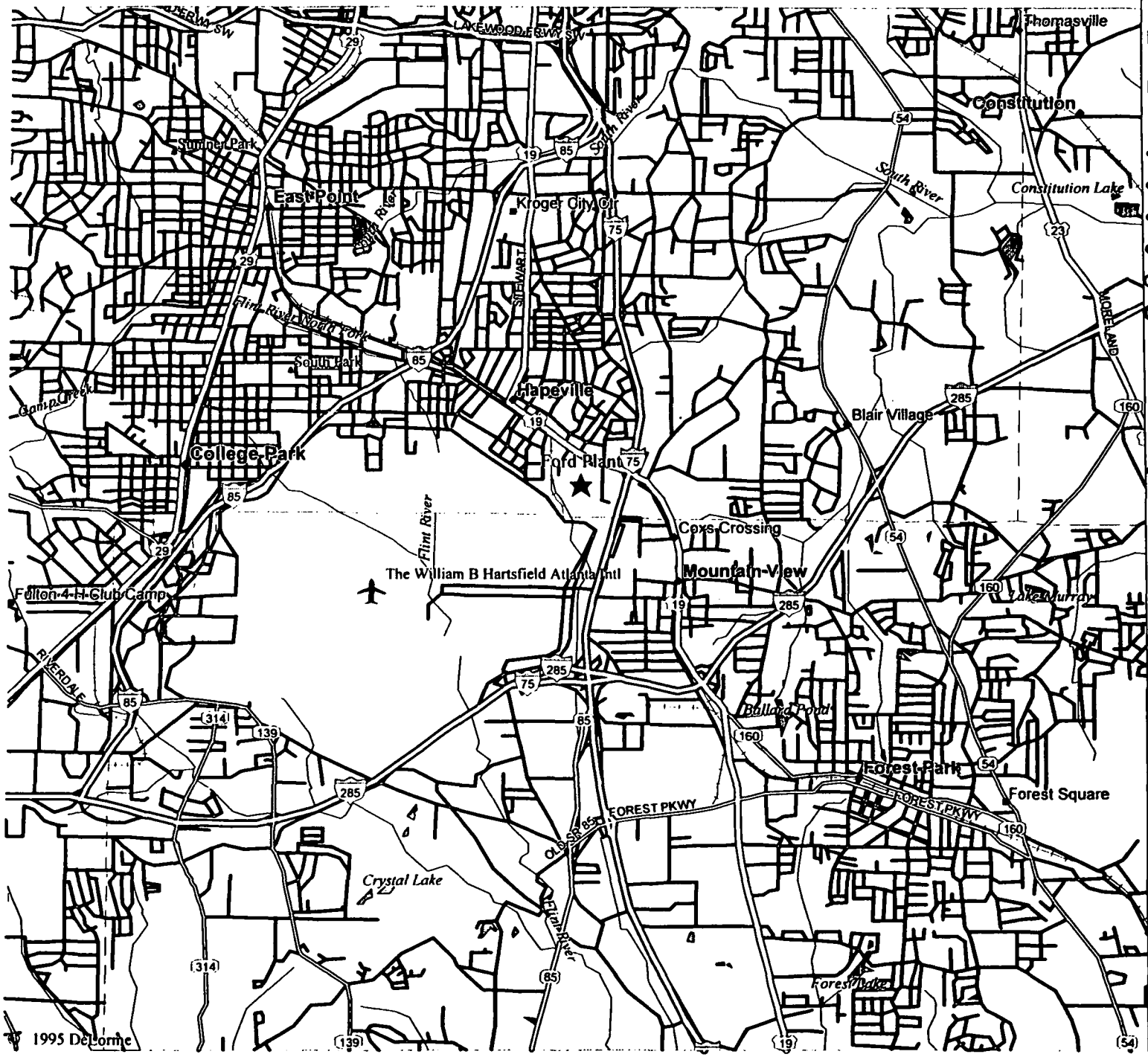
7/15/97

COMMUNITY DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

	Census Block	*0-1 Mile*	*0-3 Miles*	*1-3 Miles*	*3-5 Miles*	*County*	*State*	*U.S.*
Total Population (1994)	NA	NA	NA	NA	NA	690,490	7,055,235	260,340,990
Total Population (1990)	369	2,481	45,106	42,625	115,053	648,951	6,478,216	248,709,873
% Change 1990-1994	NA	NA	NA	NA	NA	6	9	5
Land Area (sq. mi.) (1990)	<1	3.1	28.2	25.1	50.2	528.7	57,919.0	3,536,278.1
Population/sq. mile (1990)	917	800	1,600	1,698	2,292	1,227	112	70
Median Household Income (1994)						NA	31,467	32,264
Median Household Income (1989)						29,978	29,021	30,056
% Change 1979-1989 (constant $)						28	15	7
% Change 1989-1994 (constant $)						NA	8	7
Per Capita Personal Income (1993)						29,823	19,249	20,800
Per Capita Personal Income (1989)						24,236	16,250	17,690
% Change 1989-1993 (current $)						23	18	18
Minority Percentage (1990)	46	31	58	60	67	52	29	20
Pct. of Households Below Poverty Level (1989)	16	16	27	27	25	23	21	20
Pct. Not Completing High School (1990)	39	35	38	38	29	22	29	25
Total Employment (1994) (civilian nonfarm)						368,741	3,566,000	131,056,000
Unemployment Rate (1994)						6	5	6
Manufacturing Employment (1993)						53,505	567,029	18,183,381
Mfgr. as % Total Employment (1993)						10	21	19
Manufacturing Employment (1992)						NA	556,000	18,253,000
Production Workers (1992)						NA	394,000	11,654,000
% Change in Mfgr. Employment 1987-1992						NA	-3	-4
Assembly Plant as % Total Mfgr. Workers						5		

Data sources used were not always complete or current.
Attempts have been made to verify data, but errors may still exist.

Hapeville, GA Ford Plant



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Scale 1:62,500 (at center)

1 Miles

2 KM

- Secondary SR, Road, Hwy Ramp
- Major Connector
- State Route
- Primary State Route
- US Highway
- Interstate/Limited Access
- Railroad
- Point of Interest
- Town, Small City
- Park or Reservation
- Sched Service Airport
- Locale
- City
- County Boundary
- Population Center
- Lake, Ocean, Large River
- River, Canal

FORD MOTOR CO
340 HENRY FORD II AVE
HAPEVILLE GA
Tri Number: 30354FRDMT340HE

Map #	SIC	Name	Address	City	State
0	3711	FORD MOTOR CO. ATLANTA ASSEMBLY PLANT	340 HENRY FORD II AVE.	HAPEVILLE	GA
1	2656	INTERNATIONAL PAPER	2323 N. SYLVAN RD.	EAST POINT	GA
2		SPENCER COS. INC. S. ICE DIV.	1586 E. TAYLOR AVE.	EAST POINT	GA
3	2819	CI HOLDINGS INC. SSC IND.	1550 E. TAYLOR	EAST POINT	GA
4	2819	GENERAL CHEMICAL CORP. ATLANTA WORKS	1427 CENTRAL AVE.	EAST POINT	GA
5	3221	OWENS-BROCKWAY GLASS CONTAINER INC.	3107 SYLVAN RD.	ATLANTA	GA
6	2052	KEEBLER CO.	111 HOLLOW TREE LN.	ATLANTA	GA
7	3341	SOUTHERN ZINC	1359 CENTRAL AVE.	EAST POINT	GA
8	2992	CATO OIL & GREASE CO.	3480 BROWNS MILL RD. S.E.	ATLANTA	GA
9	2752	TREASURE CHEST ADVERTISING	BROWNSMILL RD.	ATLANTA	GA
10	2087	COCA-COLA USA	3791 BROWNS MILL RD.	ATLANTA	GA
11	2841	TIME PRODS. INC.	3780 BROWNS MILL RD.	ATLANTA	GA
13	3911	AIR TREADS INC. ATLANTA DIV.	14 ROYAL OAK DR.	FOREST PARK	GA
14	3411	AMERICAN NATIONAL CAN CO.	48 ROYAL DR.	FOREST PARK	GA
15	2891	H. B. FULLER CO.	4630 LAKE MIRROR PL.	FOREST PARK	GA
16	2842	CLOROX CO.	17 LAKE MIRROR RD.	FOREST PARK	GA
17	2599	MURPHY & ORR CO.	564 MAIN ST.	FOREST PARK	GA
18	2045	MERICO INC.	273 CENTRAL AVE.	FOREST PARK	GA
19	3069	SAMUEL BINGHAM CO.	4880 SAMUEL BINGHAM CT.	COLLEGE PARK	GA
20	2821	CARGILL INC. CHEMICAL PRODUCTS DIV.	71 BARNETT RD.	FOREST PARK	GA

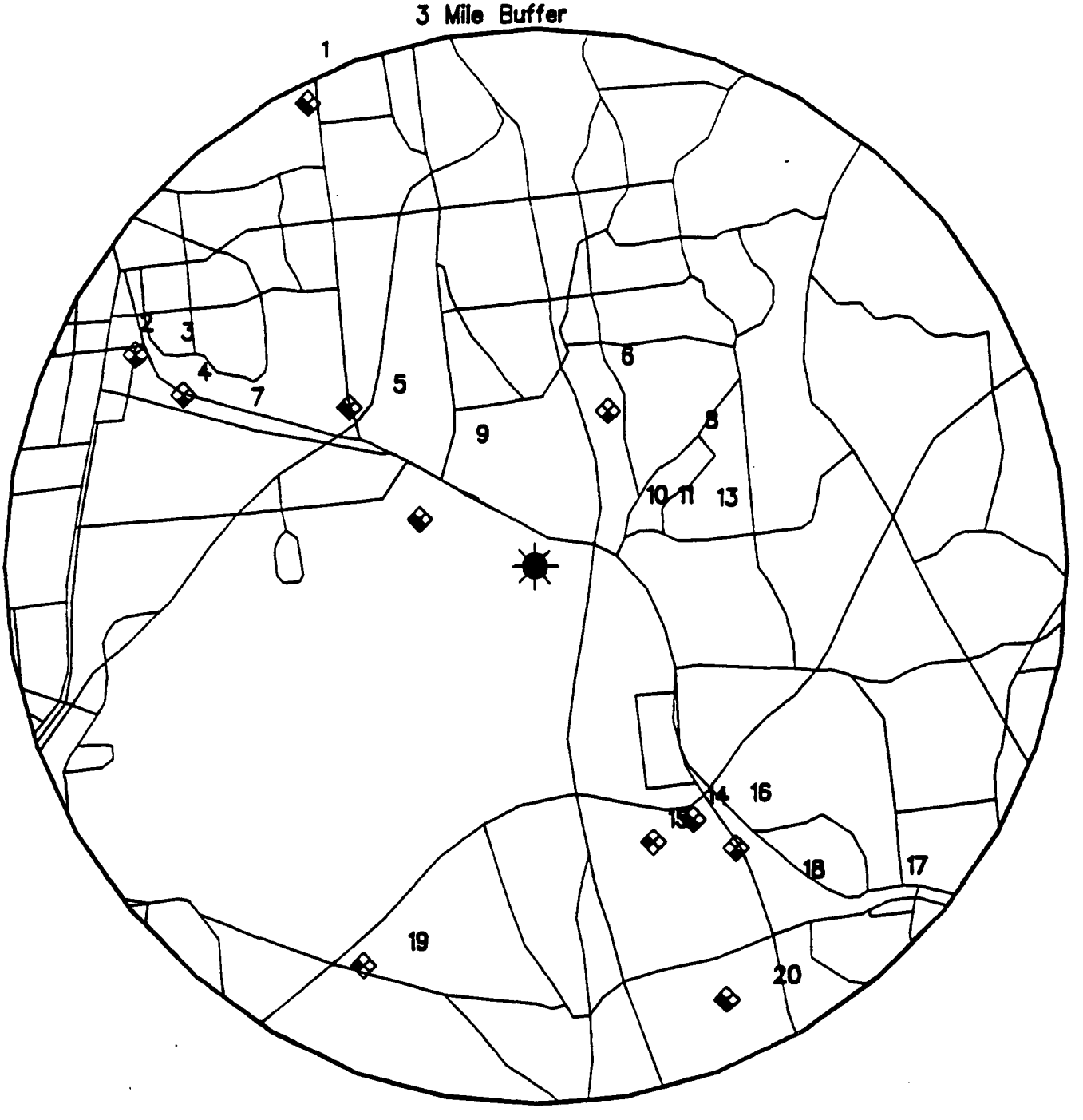
AREA WIDE 1994 TRI EMISSION PROFILE

FORD MOTOR CO
FULTON COUNTY, Georgia

Latitude: 33 39 6
Longitude: 84 24 9

Map Key:

- Auto Truck Plant
- Air Release
- Land Release
- Water Release
- Transfer To offsite location



Number without a Symbol denotes no reported emissions over 0.5 pounds per year

1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF
FORD MOTOR CO TRI NO: 30354FRDMT340HE

Chemical Name	Air Fugitive (Non-Point Source) Emissions	Ait Stack (Point Source) Emissions	Discharge to Surface Water	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
FORD MOTOR CO. ATLANTA ASSEMBLY PLANT			SIC DESCRIPTION: MOTOR VEHICLES & CAR BODIES SIC CODE: 3711				MAP LOCATION NO:	0
340 HENRY FORD II AVE. HAPEVILLE GA 30354								
METHANOL	1,200	49,000	0	0	50,200	0	3,850	3,850
N-BUTYL ALCOHOL	740	150,000	0	0	150,740	0	11,500	11,500
BENZENE	21	57	0	0	78	0	0	0
METHYL ETHYL KETONE	10,000	34,000	0	0	44,000	0	2,640	2,640
ETHYLBENZENE	520	100,000	0	0	100,520	0	870,076	870,076
ETHYLENE GLYCOL	0	0	0	0	0	4,000	56,000	60,000
METHYL ISOBUTYL KETONE	2,000	60,000	0	0	62,000	0	310,270	310,270
TOLUENE	2,200	8,200	0	0	10,400	0	515	515
CYCLOHEXANE	1	2	0	0	3	0	0	0
DI(2-ETHYLHEXYL) PHTHALATE	0	0	0	0	0	0	320	320
XYLENE (MIXED ISOMERS)	26,000	450,000	0	0	476,000	0	335,400	335,400
METHYL TERT-BUTYL ETHER	210	560	0	0	770	0	0	0
BARIUM COMPOUNDS	0	270	0	0	270	700	57,900	58,600
GLYCOL ETHERS	1,300	250,000	0	0	251,300	22,000	14,500	36,500
LEAD COMPOUNDS	0	0	0	0	0	37	210	247
MANGANESE COMPOUNDS	2,500	0	0	0	2,500	270	12,000	12,270
ZINC COMPOUNDS	250	0	0	0	250	360	14,001	14,361
SUBTOTALS	46,942	1,102,089	0	0	1,149,031	27,367	1,689,182	1,716,549
INTERNATIONAL PAPER			SIC DESCRIPTION: SANITARY FOOD CONTAINERS SIC CODE: 2656				MAP LOCATION NO:	1
2323 N. SYLVAN RD. EAST POINT GA 30344								
GLYCOL ETHERS	9,060	3,020	0	0	12,080	0	750	750
SUBTOTALS	9,060	3,020	0	0	12,080	0	750	750
SPENCER COS. INC. S. ICE DIV.			SIC DESCRIPTION: SIC CODE:				MAP LOCATION NO:	2
1586 E. TAYLOR AVE. EAST POINT GA 30344								
SUBTOTALS	0	0	0	0	0	0	0	0

1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF
FORD MOTOR CO TRI NO: 30354FRDMT340HE

Chemical Name	Air Fugitive (Non-Point Source) Emissions	Ait Stack (Point Source) Emissions	Discharge to Surface Water	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
CI HOLDINGS INC. SSC IND.			SIC DESCRIPTION: INDUSTRIAL INORGANIC CHEMICALS				MAP LOCATION NO:	3
			SIC CODE: 2819					
1550 E. TAYLOR								
EAST POINT GA 30344								
DIETHANOLAMINE	5	750	0	0	755	250	0	250
SUBTOTALS	5	750	0	0	755	250	0	250
GENERAL CHEMICAL CORP. ATLANTA WORKS			SIC DESCRIPTION: INDUSTRIAL INORGANIC CHEMICALS				MAP LOCATION NO:	4
			SIC CODE: 2819					
1427 CENTRAL AVE.								
EAST POINT GA 30344								
SULFURIC ACID	0	4,455	0	0	4,455	0	0	0
SUBTOTALS	0	4,455	0	0	4,455	0	0	0
OWENS-BROCKWAY GLASS CONTAINER INC.			SIC DESCRIPTION: GLASS CONTAINERS				MAP LOCATION NO:	5
			SIC CODE: 3221					
3107 SYLVAN RD.								
ATLANTA GA 30354								
DICHLOROMETHANE	0	4,100	0	0	4,100	0	0	0
METHYL ETHYL KETONE	2,500	750	0	0	3,250	0	340	340
HYDROCHLORIC ACID	0	49,000	0	0	49,000	0	0	0
AMMONIA	0	13,000	0	0	13,000	0	0	0
SUBTOTALS	2,500	66,850	0	0	69,350	0	340	340
KEEBLER CO.			SIC DESCRIPTION: COOKIES AND CRACKERS				MAP LOCATION NO:	6
			SIC CODE: 2052					
111 HOLLOW TREE LN.								
ATLANTA GA 30354								
AMMONIA	0	83,000	0	0	83,000	0	0	0
SUBTOTALS	0	83,000	0	0	83,000	0	0	0

1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF
FORD MOTOR CO TRI NO: 30354FRDMT340HE

Chemical Name		Air Fugitive (Non-Point Source) Emissions	Ait Stack (Point Source) Emissions	Discharge to Surface Water	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
SOUTHERN ZINC				SIC DESCRIPTION: 2NDARY SMELT/NONFERROUS METALS MAP LOCATION NO: 7 SIC CODE: 3341					
1359 CENTRAL AVE. EAST POINT	GA 30344								
	SUBTOTALS	0	0	0	0	0	0	0	0
CATO OIL & GREASE CO.				SIC DESCRIPTION: LUBRICATING OILS AND GREASES MAP LOCATION NO: 8 SIC CODE: 2992					
3480 BROWNS MILL RD. S.E. ATLANTA	GA 30354								
ZINC COMPOUNDS		0	0	0	0	0	5	0	5
	SUBTOTALS	0	0	0	0	0	5	0	5
TREASURE CHEST ADVERTISING				SIC DESCRIPTION: COMMERCIAL PRINT, LITHOGRAPHIC MAP LOCATION NO: 9 SIC CODE: 2752					
BROWNSMILL RD. ATLANTA	GA 30354								
	SUBTOTALS	0	0	0	0	0	0	0	0
COCA-COLA USA				SIC DESCRIPTION: FLAV EXTR & FLAV SYRUPS, NEC MAP LOCATION NO: 10 SIC CODE: 2087					
3791 BROWNS MILL RD. ATLANTA	GA 30354 2946								
	SUBTOTALS	0	0	0	0	0	0	0	0

1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF
FORD MOTOR CO TRI NO: 30354FRDMT340HE

Chemical Name	Air Fugitive (Non-Point Source) Emissions	Ait Stack (Point Source) Emissions	Discharge to Surface Water	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
TIME PRODS. INC.			SIC DESCRIPTION: SOAP/DETERG EXC SPECIAL CLEANR SIC CODE: 2841				MAP LOCATION NO:	11
3780 BROWNS MILL RD. ATLANTA GA 30354								
SUBTOTALS	0	0	0	0	0	0	0	0
AIR TREADS INC. ATLANTA DIV.			SIC DESCRIPTION: JEWELRY, PRECIOUS METAL SIC CODE: 3911				MAP LOCATION NO:	13
14 ROYAL OAK DR. FOREST PARK GA 30050								
SUBTOTALS	0	0	0	0	0	0	0	0
AMERICAN NATIONAL CAN CO.			SIC DESCRIPTION: METAL CANS SIC CODE: 3411				MAP LOCATION NO:	14
48 ROYAL DR. FOREST PARK GA 30050								
N-BUTYL ALCOHOL	18,859	106,865	0	0	125,724	0	0	0
MANGANESE	0	0	0	0	0	5	43	48
HYDROGEN FLUORIDE	0	250	0	0	250	0	0	0
GLYCOL ETHERS	19,248	123,799	0	0	143,047	0	0	0
SUBTOTALS	38,107	230,914	0	0	269,021	5	43	48
H. B. FULLER CO.			SIC DESCRIPTION: ADHESIVES AND SEALANTS SIC CODE: 2891				MAP LOCATION NO:	15
4630 LAKE MIRROR PL. FOREST PARK GA 30050								
GLYCOL ETHERS	0	0	0	0	0	190	470	660
SUBTOTALS	0	0	0	0	0	190	470	660

1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF
FORD MOTOR CO TRI NO: 30354FRDMT340HE

Chemical Name	Air Fugitive (Non-Point Source) Emissions	Ait Stack (Point Source) Emissions	Discharge to Surface Water	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
CLOROX CO.	SIC DESCRIPTION: SPECIALTY CLEANING, POLISHING						MAP LOCATION NO:	16
	SIC CODE: 2842							
17 LAKE MIRROR RD.								
FOREST PARK GA 30050								
CHLORINE	0	5	0	0	5	0	0	0
GLYCOL ETHERS	0	4	0	0	4	263	0	263
SUBTOTALS	0	9	0	0	9	263	0	263
MURPHY & ORR CO.	SIC DESCRIPTION: FURNITURE AND FIXTURES, NEC						MAP LOCATION NO:	17
	SIC CODE: 2599							
564 MAIN ST.								
FOREST PARK GA 30050 1898								
SUBTOTALS	0	0	0	0	0	0	0	0
MERICO INC.	SIC DESCRIPTION: BLENDED AND PREPARED FLOUR						MAP LOCATION NO:	18
	SIC CODE: 2045							
273 CENTRAL AVE.								
FOREST PARK GA 30050								
SUBTOTALS	0	0	0	0	0	0	0	0
SAMUEL BINGHAM CO.	SIC DESCRIPTION: FABRICATED RUBBER PRODUCTS,NEC						MAP LOCATION NO:	19
	SIC CODE: 3069							
4880 SAMUEL BINGHAM CT.								
COLLEGE PARK GA 30349								
DIBUTYL PHTHALATE	0	0	0	0	0	0	7,100	7,100
SUBTOTALS	0	0	0	0	0	0	7,100	7,100

1994 TRI EMISSIONS (LB/YEAR) AT FACILITIES WITHIN THREE MILES OF
FORD MOTOR CO TRI NO: 30354FRDMT340HE

Chemical Name	Air Fugitive (Non-Point Source) Emissions	Ait Stack (Point Source) Emissions	Discharge to Surface Water	On-Site Land Disposal	TOTAL RELEASES	Discharge to POTW	Transfer	TOTAL TRANSFERS
CARGILL INC. CHEMICAL PRODUCTS DIV.			SIC DESCRIPTION: PLSTC MAT./SYN RESINS/NV ELAST				MAP LOCATION NO:	20
			SIC CODE: 2821					
71 BARNETT RD.								
FOREST PARK GA 30050								
N-BUTYL ALCOHOL	72	26	0	0	98	0	146	146
SEC-BUTYL ALCOHOL	38	36	0	0	74	0	59	59
METHYL METHACRYLATE	64	156	0	0	220	0	652	652
PHTHALIC ANHYDRIDE	132	42	0	0	174	0	14,000	14,000
NAPHTHALENE	92	3	0	0	95	0	1,124	1,124
1,2,4-TRIMETHYLBENZENE	61	44	0	0	105	0	1,652	1,652
ETHYLBENZENE	450	273	0	0	723	6	26,757	26,763
STYRENE	680	529	0	0	1,209	0	391	391
ETHYLENE GLYCOL	278	0	0	0	278	0	52	52
MALEIC ANHYDRIDE	196	0	0	0	196	0	0	0
TOLUENE	1,079	572	0	0	1,651	0	16,855	16,855
XYLENE (MIXED ISOMERS)	2,323	1,719	0	0	4,042	26	102,043	102,069
TOLUENEDIISOCYANATE (MIXED ISO	31	0	0	0	31	0	0	0
GLYCOL ETHERS	173	25	0	0	198	0	76	76
SUBTOTALS	5,669	3,425	0	0	9,094	32	163,807	163,839

Ford Motor Company
Hapeville Fulton County, Georgia

TRI # : 30354FRDMT340HE

Latitude: 33 39 6 N
Longitude: 84 24 9 W

MAP KEY:

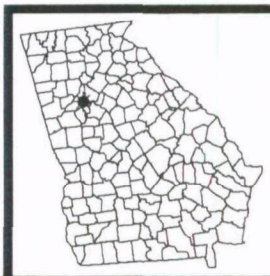
- County Boundries
- Inter State Highway
- US Highway
- Rail Road
- One Mile
- Three Miles
- Five Miles

POPULATION DENSITY / SQ. MILE

- Greater than 10000
- 1000 - 10000
- 100 - 1000
- 10-100
- 1-10

Minority, poverty, and High School Incomplete percentages

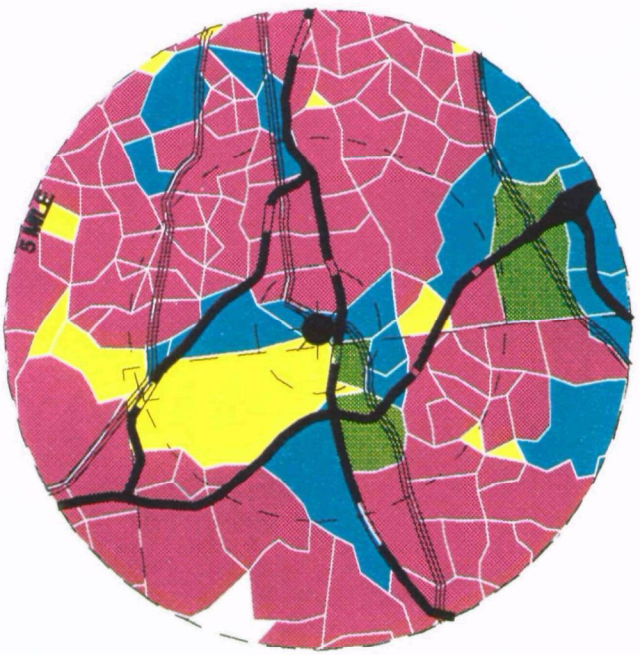
- Greater than 50
- 40 - 50
- 30 - 40
- 20 - 30
- 10 - 20
- 0 - 10



Percentage of Total Population Below Poverty Level

Percentage of Population not Completing High School

Population Density People Per Sq. Mile



Minority Population Percent of Total Population

Ford Motor Company
Hapeville Fulton County, Georgia

TRI # : 30354FRDMT340HE

Latitude: 33 39 6 N
Longitude: 84 24 9 W

MAP KEY:

- County Boundries
- Inter State Highway
- US Highway
- Rail Road
- One Mile
- Three Miles
- Five Miles

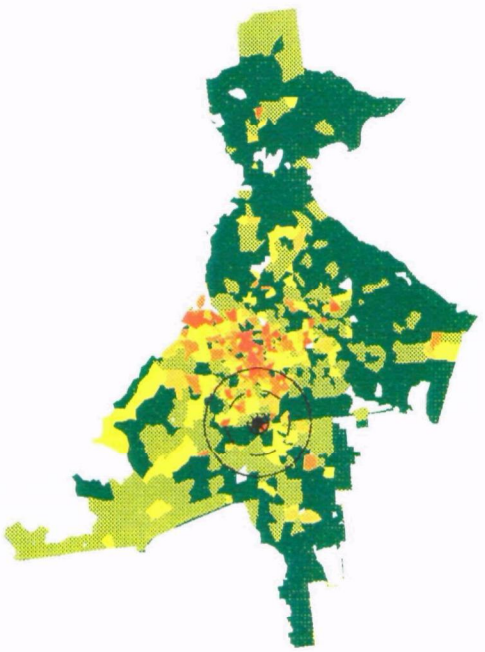
POPULATION DENSITY / SQ. MILE

- Greater than 10000
- 1000 - 10000
- 100 - 1000
- 10-100
- 1-10

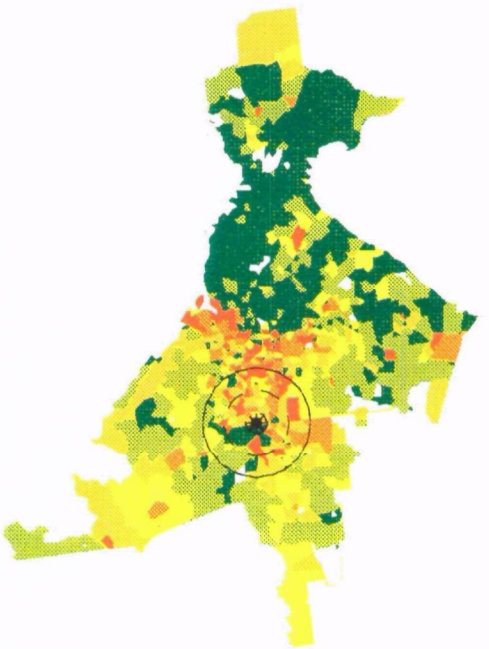
Minority, poverty, and High School Incomplete percentages

- Greater than 50
- 40 - 50
- 30 - 40
- 20 - 30
- 10 - 20
- 0 - 10

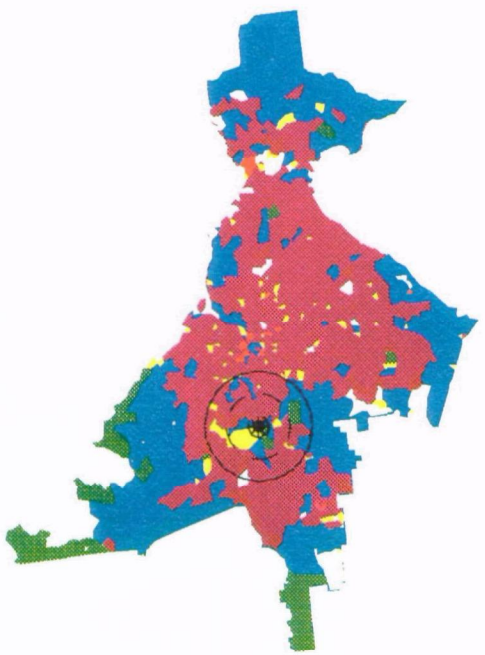
Percentage of Total Population Below Poverty Level



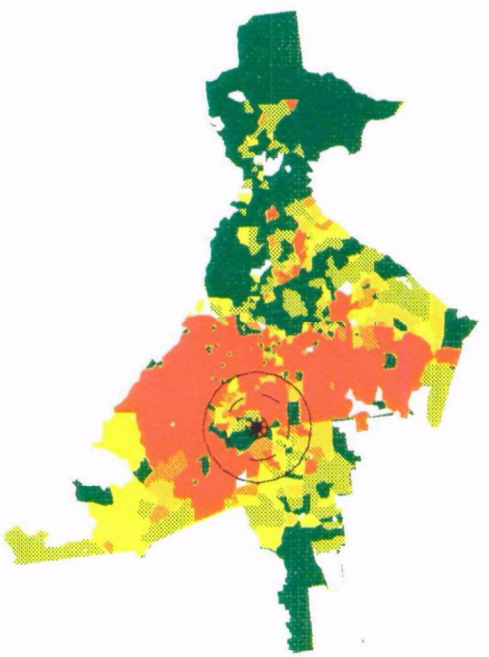
Percentage of Population not Completing High School



Population Density People Per Sq. Mile



Minority Population Percent of Total Population



APPENDICES

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July 15, 1997

APPENDIX A

CSI Auto Sector Subcommittee and Project Team

CSI Auto Sector Subcommittee

NAME	ORGANIZATION
Mary Nichols	U.S. EPA, Co-Chair
John Hankinson	U.S. EPA Region 4, Co-Chair
Kevin Butt	Toyota
David Carlson	Chrysler
Gary Davis	Center for Clean Products and Clean Technologies, University of Tennessee
Lisa Doerr	Citizens for a Better Environment
Hank Graddy	Sierra Club
Charles Griffith	Ecology Center of Ann Arbor
Carolyn Hartmann	U.S. Public Interest Research Group
Grace Heigel	Honda
Pat Jackson	People for Community Recovery
James Janssen	Illinois Environmental Protection Agency
G. Robert Kerr	Georgia Department of Natural Resources
Kevin Mills	Environmental Defense Fund
Franklin Mirer	United Automobile Workers
Curtis Moore	American Lung Association
Timothy O'Brien	Ford
Robert Phillips	General Motors
Stu Rupp	NUMMI
Marta Segura	UCLA
Lewis Shaw	SC Dept. of Health & Env. Control
Elizabeth Toomer	
Mark Warner	Mercedez-Benz
Gary Weinreich	BMW
Paul Zugger	Michigan DEQ

CSI Auto Sector Alternative SRS/Community Team

NAME	ORGANIZATION
Kevin Butt	Toyota
Suzanne Childress	U.S. EPA Office of Enforcement and Compliance Assistance
Andy Comei	United Automobile Workers
Lisa Doerr	Citizens for a Better Environment
Joan Fassinger	General Motors
Wayne Garfinkel	U.S. EPA Region 4
Prudence Goforth	U.S. EPA Common Sense Initiative
Hank Graddy	Sierra Club
Charles Griffith	Ecology Center of Ann Arbor
Carolyn Hartmann	U.S. Public Interest Research Group
David Hill	U.S. EPA Region 4
Pat Jackson	People for Community Recovery
James Janssen	Illinois Environmental Protection Agency
G. Robert Kerr	Georgia Department of Natural Resources
Amy Lilly	Association of International Automobile Manufacturers
Keith Mason	U.S. EPA Office of Air and Radiation
Kevin Mills	Environmental Defense Fund
Curtis Moore	American Lung Association
Chris Porter	Ford
Steve Rosenthal	U.S. EPA Region 5
Dave Salman	U.S. EPA Office of Air and Radiation
Jacki Savage	Chrysler
Sara Schneeberg	U.S. EPA Office of General Counsel
Ellen Shapiro	American Automobile Manufacturers Association
Larry Slimak	American Automobile Manufacturers Association - Detroit
Quincy Styke	Tennessee Air Pollution Central Division
Gary Weinreich	BMW

APPENDIX B

Description of the Common Sense Initiative

EPA United States Environmental Protection Agency | Common Sense Initiative (6101) | EPA 742-B-96-007 May 1997

Common Sense Initiative

Automobile Manufacturing Sector Fact Sheet

Industry Background

As the largest industry in the United States, automobile manufacturing plays a significant role in the nation's economy. The industry produces not only vehicular transportation but also automotive parts and accessories. Though facilities can be found across the United States, nearly 40 percent are concentrated in the Great Lakes Region.

Subcommittee Background and Status

The Automobile Manufacturing Subcommittee consists of nearly 25 members from diverse backgrounds. Members come from such organizations as General Motors, Toyota, the Georgia Department of Natural Resources, and the Ecology Center of Ann Arbor.

In the Spring of 1997, a full complement of Project Goals were reached. The Subcommittee reviewed and accepted the documentary reports which represented thoughtful consideration of several crucial environmental policy questions such as: How might industry and community interact and exchange information? Are there realistic alternatives to the existing regulatory system? Where in the manufacturing process can industry gain efficiencies and flexibility, meet economic realities, and maintain strong environmental standards?

The Subcommittee will present its findings to the CSI Council and conclude its current agenda. However, involvement with the community participation project in Louisville, Kentucky will continue.

Alternative Sector Regulatory System/ Community Technical Assistance and Involvement Team

Project Contact:
Keith Mason
U.S. EPA
202-260-1360

This team addressed automobile manufacturing regulatory systems and community involvement. Core principles and a process for implementing an alternative to today's regulatory system impacting the automobile manufacturing industry was proposed. The team also explored in detail the unique role and information needs of the community in creating such alternatives.

The following set of resultant documents was approved by the Subcommittee and will be forwarded to the Council for their consideration and dissemination.

Consensus Documents

- *Principles for an Alternative Sector Regulatory System*
- *U.S. Automobile Assembly Plants and Their Communities: Environmental, Economic and Demographic Profiles*

Support Documents

- *The Process of Implementing an Alternative Sector Regulatory System*
- *A Review of Community Participation in Environmental Decision-Making*
- *U. S. Automobile Assembly Plants and Their Communities: Summary of Community and Plant Environmental and Economic Issues Obtained through an Electronic Literature Search*

Life-Cycle Management/ Supplier Partnership Project

Project Contact:
Julie Lynch
U.S. EPA
202-260-4000

There are opportunities for environmental and economic gains through the wise selection and use of manufacturing materials using Life-Cycle Management. Life-Cycle Management is most helpful to auto manufacturers and their suppliers. EPA's understanding of this important environmental management tool will be advanced thanks to the dedicated work of this team who explored the business relationship between auto manufacturers, their many suppliers, and their role in positively influencing environmental outcomes in the manufacturing process.

The team's final reports range from primary data issues to strategic relationship issues to core Life-Cycle Management tool and policy assessments. The following set of documents will be forwarded to the Council for their consideration and dissemination.

Consensus Documents

- *Conclusions Document*
- *Data Collection to Support Life-Cycle Management*
- *Life-Cycle Management Data Summary Points*
- *Framework for Evaluating Life-Cycle Management Information Needs*
- *Life-Cycle Management/Supplier Partnership Project Team Simulation Exercise*

Support Documents

- *Tools and Policies for Life-Cycle Management/Life-Cycle Partnerships*
- *Identifying the Supply Chains for Automotive Assembly Plants: Supplier Process Descriptions and Pollution Prevention Opportunities*
- *The Chrysler Regulated Substance and Recyclability Certification Data Collection and Reporting System*
- *Life-Cycle Inventory Analysis of Instrument Panels: VOC Emissions in Manufacturing*

Regulatory Initiative Project

Project Contact:
Alan Powell
U.S. EPA Region 4
404-562-9045

The Regulatory Initiative Project applies common sense to improve the effectiveness of automobile manufacturing regulatory requirements. A multi-stakeholder team concentrated on one specific area and initiated a project to evaluate alternatives to the current and complex topcoat standard. The project focused on evaluating the utility of expressing the current complex topcoat standard in alternative forms which provide the public with more understandable information and give the auto manufacturers a standard more consistent with international regulations. The team focused on the viability of a mass/area standard and determined that EPA should explore the possibilities of using this type of standard in future rulemaking. This recommendation will be forwarded to the Council for consideration and dissemination.

Calendar of Events

For information on current events, contact Sector Lead Alan Powell at 404-562-9045 or Sector Alternate Keith Mason at 202-260-1360.

The Common Sense Initiative

The Common Sense Initiative is an innovative approach to environmental protection and pollution prevention developed by the U.S. EPA. The Initiative addresses environmental management by industrial sector rather than by environmental medium (air, water, land). EPA selected six industries to serve as CSI pilots: automobile manufacturing, computer and electronics, iron and steel, metal finishing, petroleum refining, and printing. Six sector subcommittees, each consisting of representatives from industry, environmental justice organizations, labor organizations, environmental organizations, and federal, state, and local governments, address environmental issues facing these industries.

Since beginning their work in January 1995, the sector subcommittees have initiated nearly 40 projects involving more than 150 stakeholders who actively participate in sector subcommittees and subcommittee workgroups. Using a consensus approach to decision making, the groups address diverse topics such as pollution prevention, environmental reporting requirements, and public access to environmental information.

For more information about CSI, call 202-260-7417, contact our web site at http://www.epa.gov/commonsense, or write U.S. EPA, MC 6101, 401 M Street SW, Washington, D.C. 20460.

Common Sense Initiative - Automobile Manufacturing Sector
Subcommittee Members and Affiliations
As of May 1997

Co-chair Mary Nichols
U.S. EPA

Co-chair John Hankinson
U.S. EPA Region 4

Designated Federal Officer
Alan Powell
U.S. EPA Region 4

Mr. David L. Carlson
Chrysler Technology Center

Mr. Gary A. Davis
Center for Clean Products & Clean Technologies

Ms. Lisa Doerr
Citizens for a Better Environment

Mr. Hank Graddy
Sierra Club

Mr. Charles Griffith
Ecology Center of Ann Arbor

Mr. James A. Janssen
Illinois Environmental Protection Agency

Mr. G. Robert Kerr
Georgia Department of Natural Resources

Mr. Kevin Mills
Environmental Defense Fund

Mr. Franklin E. Mirer
United Automobile Workers

Mr. Curtis Moore
American Lung Association

Mr. Timothy J. O'Brien
Ford Motor Company

Mr. Robert J. Phillips
General Motors Corporation

Mr. Quincy N. Styke, III
Tennessee Air Pollution Control Division

Mr. Mark L. Warner
Mercedes-Benz U.S. International, Inc.

APPENDIX C

Data Work Group Members

Wayne Garfinkel, EPA Region 4 (chair)

Suzanne Childress, EPA Office of Enforcement and Compliance Assistance

Lisa Doerr, Citizens for a Better Environment

Joan Fassinger, General Motors

Charles Griffith, Ecology Center of Ann Arbor

Keith Mason, EPA Office of Air and Radiation

Ellen Shapiro, American Automobile Manufacturers Association

APPENDIX D

Description and Use of TRI Data

The Toxics Release Inventory (TRI) is mandated by the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. EPCRA provides for the collection and public release of information about the presence and release of hazardous or toxic chemicals in our nation's communities.

Section 313 of EPCRA requires manufacturers to report releases of over 300 chemicals that have been designated as toxic to the environment. Reports are submitted to the U.S. EPA and to the states. Facilities are required to report on releases of toxic chemicals into the air, water and land; on off-site transfers to a separate facility for treatment or disposal; and on pollution prevention activities and chemical recycling. Reports must be submitted on or before July 1 each year, covering activities for the previous calendar year. Reporting began in 1987, and the 1994 reporting year was the latest available for use in this report. The Pollution Prevention Act of 1990 expanded the TRI to include mandatory reporting of additional waste management and pollution prevention activities, including recycling, use for energy recovery, and on-site treatment, beginning with the 1991 reporting year.

Not all facilities are required to submit TRI reports. A facility is required to report if it:

- Has ten or more full-time employees; and
- Manufactures or processes over 25,000 pounds of toxic chemicals or chemical categories specified in EPCRA or added to the list by regulation, or uses more than 10,000 pounds of any designated chemical or category; and
- Conducts selected manufacturing operations in the industry groups specified in U.S. Government Standard Industrial Classification (SIC) Codes 20 through 39.

Federal facilities became subject to reporting for the first time for the report due July 1, 1995. EPA is currently considering expansion of TRI reporting to other non-manufacturing sectors. Beginning with the 1995 reporting year, certain facilities will be able to make use of an alternative reporting threshold.

The TRI reporting requirements for 1994 covered 343 chemicals and 22 chemical categories. Coverage of chemicals was greatly expanded (to approximately 600 chemicals) for the 1995 reporting year.

Between 1991 and 1994 (the period covered by this report), some chemicals were added to the TRI list and some were deleted. These changes in the list of designated chemicals complicates the analysis of trends over time. The data reported in Parts II and III of this report include all chemicals reported by facilities, and quantities of chemicals reported that were subsequently delisted are noted in the Part III profiles. Analysis of trends reported in Part I excluded chemicals that were delisted, to provide a common basis for analysis over time. Attachment D-1 lists the chemicals that were added or delisted between 1991 and 1994. Of these, only acetone and butyl benzyl phthalate were reported by assembly plants.[1] None of the chemicals added to the list after 1991 were reported by assembly plants in 1994.

TRI requires the reporting of estimated data and does not mandate that facilities monitor their releases. Various estimation methods are used when monitoring data are not available, which can result in inconsistencies across facilities in reporting practices. The data used in this report are those reported in Sections 5 and 6 of the reporting form (Form R).

[1] No adjustments could be made for cases where the chemical listing was modified rather than being deleted entirely. Modifications may affect the comparability over time of data reported for the following chemicals and chemical categories: ammonia, sulfuric acid, barium compounds, copper compounds, glycol ethers, and aluminum oxide (fibrous form).

Attachment D-1

Chemicals Added to the TRI List

1991 Reporting Year

Stratospheric ozone depleters - chlorofluorocarbons and halons

- Bromochlorodifluoromethane (Halon 1211)
- Bromotrifluoromethane (Halon 1301)
- Dibromotetrafluoroethane (Halon 2402)
- Dichlorodifluoromethane (CFC-12)
- Dichlorotetrafluoroethane (CFC-114)
- Monochloropentafluoroethane (CFC-115)
- Trichlorofluoromethane (CFC-11)

1994 Reporting Year

Class II ozone-depleting substances in section 602(b) of the Clean Air Act-hydrochlorofluorocarbons (HCFCs)

- Chlorodifluoromethane (HCFC-22)
- Dichlorotrifluoroethane (HCFC-123) and isomers
- Chlorotetrafluoroethane (HCFC-124) and isomers
- 1,1-Dichloro-1-fluoroethane (HCFC-141b) and isomers
- 1-Chloro-1,1-difluoroethane (HCFC-142b)

New on RCRA hazardous waste list

- Acetophenone
- Amitrole
- Bis(2-chloroethoxy)methane
- 1,4-Dichloro-2-butene
- Dihydrosafrole
- Ethylene bisdithiocarbamic acid, salts and esters
- Ethylidene dichloride
- Formic Acid
- Hexachlorophene
- Hydrogen sulfide*
- Malononitrile
- Methacrylonitrile
- Methyl chlorocarbonate
- Methyl mercaptan*
- 2-Methylpyridine
- 5-Nitro-o-toluidine
- Paraldehyde
- Pentachloroethane
- Pronamide
- 1,1,1,2-Tetrachloroethane
- Thiram
- Trypan blue
- Warfarin and salts

*reporting for these chemicals has been suspended

Chemicals Removed From the TRI List

Removed for 1991 Reporting Year

Aluminum oxide (non-fibrous)

Removed for 1992 Reporting Year

Di-n-Octyl phthalate (n-dioctyl phthalate)

Removed for 1993 Reporting Year

Barium sulfate (barium compound category)

Copper phthalocyanine compounds substituted with only bromine, chlorine, and/or hydrogen (copper compounds category)

High molecular weight glycol ethers (glycol ethers category)

Removed for 1994 Reporting Year

Butyl benzyl phthalate

Ammonium sulfate (solution)

Acetone

Modified for 1994 Reporting Year

Ammonia (includes anhydrous ammonia and aqueous ammonia from water, dissociable ammonium salts, and other sources; 10% of total aqueous ammonia is reportable under this listing)

Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

Aluminum oxide (fibrous forms)

APPENDIX E

Description and Use of RCRA Biennial Report Data

The RCRA Biennial Report System is a national system that collects data on the generation and management of hazardous waste and is required by regulations implementing the Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). The BRS captures data on two groups of RCRA-regulated hazardous waste handlers: non-household Large Quantity Generators, and Treatment, Storage, and Disposal facilities (TSDs). These facilities must submit a report every other year detailing the quantities, composition, and characteristics of generated hazardous waste, the methods used to manage the hazardous wastes, and the efforts taken to reduce the volume and toxicity of hazardous wastes. BRS data exist for odd-numbered years; 1993 is the latest year for which BRS data are currently available.

Information collected for the BRS is organized into five groups of databases, each group corresponding to a different form submitted by reporting facilities.

- **Form IC - Identification and Certification.** This form must be submitted by all facilities required to file a biennial report and contains basic identification information for each facility.

- **Form GM - Waste Generation and Management.** This form must be submitted by all facilities required to file a biennial report that generated or shipped any quantity of RCRA hazardous waste. A separate and independent Form GM must be submitted for each RCRA hazardous waste. The Form GM and its corresponding databases contain information regarding the type and quantity of the waste generated or shipped as well as the management methods used in the treatment, storage, disposal, or recycling of the waste.

- **Form WR - Waste Received From Off-Site.** This form must be submitted by all facilities required to file a biennial report that received RCRA hazardous waste from off-site (including waste from all facilities, not just Large Quantity Generators and TSDs). The Form WR and its corresponding databases include the type and quantity of each waste received, the source of the waste, and the management method used in treating, disposing, or recycling the waste.

- **Form PS - On-Site Waste Treatment, Disposal, or Recycling Process System.** This form must be submitted by all facilities required to file a biennial report for each on-site hazardous waste treatment, disposal, or recycling process system that existed, was planned, or was in the closure process during the reporting year. This information includes the regulatory status of the system, the units comprising the system, the components of the system, and the demand placed on the system.

- **Form OI - Off-Site Identification.** This form must be submitted by all facilities required to file a biennial report that received hazardous waste from off-site or sent hazardous waste off-site. Form OI is not required by EPA; each state decides whether to require this form.

To collect information for the universe of assembly plants, the Project Team searched four of the GM-based databases ("Flat Files" G1, G2, G5 and G6) using the EPA identification number assigned to each facility by the RCRA program. The GM form contains EPA hazardous waste codes, management system type (both on- and off-site), the quantity of waste generated and managed, waste source, and waste physical form. All of the waste codes, source codes, waste form codes, and management system codes used are attached at the end of this appendix.

In the analysis of BRS data in Part I of this report (pages I-26 through I-30),distinction is made between aqueous and non-aqueous waste. Guidelines used by EPA's Office of Solid Waste were applied to determine whether a waste is aqueous or non-aqueous. A waste was classified as aqueous if: 1) its waste form code is B101, B102, B105 or B110-B116, **or** 2) its management system code is M071-M079, M081-M085, M089, M091-M094, M099, M121-M125, M129, M134-M136. All wastes not reporting one of these codes were classified as a non-aqueous waste. In a few cases, auto company reviewers provided additional information on the physical form of specific wastes.

There are a few things to bear in mind when using the BRS data. First, the BRS database is not updated once it is publicly available (unlike the TRI database). This means that inaccuracies may have been identified and have not been corrected. Second, facilities have the option of reporting waste quantities in seven different units of measurement. To aggregate and compare quantities, it is therefore necessary to convert all quantities to one standard unit of measurement (in this report, tons). Methods used to convert quantities reported in other units to tons is provided later in this appendix. Third, it is not possible to derive concentration data for each constituent in a wastestream. Each wastestream in the BRS may be identified by multiple waste codes, indicating different types of hazardous properties or constituents, but there is no way to assess the concentration of an individual toxic constituent or the mixture ratios of multiple constituents. Two wastes generated in the same quantity may therefore present different types of hazard and may contain very different quantities of toxic constituents.

Attachment E-1

EPA HAZARDOUS WASTE CODES

Code	Waste description
CHARACTERISTICS OF HAZARDOUS WASTE	
D001	Ignitable waste
D002	Corrosive waste
D003	Reactive waste
D004	Arsenic
D005	Barium
D006	Cadmium
D007	Chromium
D008	Lead
D009	Mercury
D010	Selenium
D011	Silver
D012	Endrin(1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo-5,8-dimeth-ano-naphthalene)
D013	Lindane (1,2,3,4,5,6-hexa-chlorocyclohexane, gamma isomer)
D014	Methoxychlor (1,1,1-trichloro-2,2-bis [p-methoxyphenyl] ethane)
D015	Toxaphene (C_{10} H_{10} Cl_8, Technical chlorinated camphene, 67-69 percent chlorine)
D016	2,4-D (2,4-Dichlorophenoxyacetic acid)
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)
D018	Benzene
D019	Carbon tetrachloride
D020	Chlordane
D021	Chlorobenzene
D022	Chloroform
D023	o-Cresol
D024	m-Cresol
D025	p-Cresol
D026	Cresol
D027	1,4-Dichlorobenzene
D028	1,2-Dichloroethane
D029	1,1-Dichloroethylene
D030	2,4-Dinitrotoluene
D031	Heptachlor (and its epoxide)
D032	Hexachlorobenzene
D033	Hexachlorobutadiene
D034	Hexachloroethane
D035	Methyl ethyl ketone
D036	Nitrobenzene
D037	Pentachlorophenol
D038	Pyridine

Partial list -- excludes K codes, which were not reported by assembly plants, and includes only those U and P codes reported by assembly plants in 1991 or 1993.

EPA HAZARDOUS WASTE CODES

Code	Waste description
D041	2,4,5-Trichlorophenol
D042	2,4,6-Trichlorophenol
D043	Vinyl chloride
	HAZARDOUS WASTE FROM NONSPECIFIC SOURCES
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichlorethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2, trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, before use, only the above spent nonhalogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above nonhalogenated solvents, and a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F004	The following spent nonhalogenated solvents: cresols, cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F005	The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.

Partial list -- excludes K codes, which were not reported by assembly plants, and includes only those U and P codes reported by assembly plants in 1991 or 1993.

EPA HAZARDOUS WASTE CODES

Code	Waste description
F007	Spent cyanide plating bath solutions from electroplating operations.
F008	Plating bath residues from the bottom of plating baths from electroplating operations in which cyanides are used in the process.
F009	Spent stripping and cleaning bath solutions from electroplating operations in which cyanides are used in the process.
F010	Quenching bath residues from oil baths from metal heat treating operations in which cyanides are used in the process.
F011	Spent cyanide solutions from slat bath pot cleaning from metal heat treating operations.
F012	Quenching wastewater treatment sludges from metal heat treating operations in which cyanides are used in the process.
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce derivatives.
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol.)
F024	Process wastes including, but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludge, spent catalysts, and wastes listed in Sections 261.31. or 261.32)
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one, to and including

Partial list -- excludes K codes, which were not reported by assembly plants, and includes only those U and P codes reported by assembly plants in 1991 or 1993.

EPA HAZARDOUS WASTE CODES

Code	Waste description
	five, with varying amounts and positions of chlorine substitution.
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA hazardous waste nos. F020, F021, F022, F023, F026, and F027.
F032	Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use, or have previously used, chlorophenolic formulations [except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with Section 261.35 (i.e., the newly promulgated equipment cleaning or replacement standards), and where the generator does not resume or initiate use of chlorophenolic formulations]. (This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.)
F034	Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.
F035	Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.
F037	Petroleum refinery primary oil/water/solids separation sludge - Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and storm water units receiving dry weather flow. Sludges generated in storm water units that do not receive dry weather flow, sludges generated in aggressive biological treatment units as defined in Section 261.31(b)(2)(including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units), and K051 wastes are exempted from this listing.
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge - Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and

Partial list -- excludes K codes, which were not reported by assembly plants, and includes only those U and P codes reported by assembly plants in 1991 or 1993.

EPA HAZARDOUS WASTE CODES

Code	Waste description
	oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated in aggressive biological treatment units as defined in Section 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units), and F037, K048, and K051 wastes are exempted from this listing.
F039	Leachate resulting from the treatment, storage, or disposal of wastes classified by more than one waste code under Subpart D, or from a mixture of wastes classified under Subparts C and D of this part. (Leachate resulting from the management of one or more of the following EPA Hazardous Wastes and no other hazardous wastes retains its hazardous waste code(s): F020, F021, F022, F023, F026, F027, and/or F028.)
DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUALS, AND SPILL RESIDUES THEREOF—ACUTE HAZARDOUS WASTE	
(AN ALPHABETIZED LISTING CAN BE FOUND AT 40 CFR 261.33.)	
P005	2-Propen-1-ol
P005	Allyl alcohol
P012	Arsenic oxide As_2O_3
P012	Arsenic trioxide
P018	Brucine
P018	Strychnidin-10-one, 2,3-dimethoxy-
P028	Benzene, (chloromethyl)-
P028	Benzyl chloride
P029	Copper cyanide
P029	Copper cyanide Cu(CN)
P059	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P059	Heptachlor
P098	Potassium cyanide
P098	Potassium cyanide K(CN)
P106	Sodium cyanide
P106	Sodium cyanide Na(CN)
DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUES, AND SPILL RESIDUES THEREOF—TOXIC WASTES	
(AN ALPHABETIZED LISTING CAN BE FOUND AT 40 CFR 261.33.)	
U007	2-Propenamide
U007	Acrylamide
U051	Creosote
U052	Cresol (Cresylic acid)
U052	Phenol, methyl-
U080	Methane, dichloro-

Partial list -- excludes K codes, which were not reported by assembly plants, and includes only those U and P codes reported by assembly plants in 1991 or 1993.

EPA HAZARDOUS WASTE CODES

Code	Waste description
U080	Methylene chloride
U117	Ethane, 1,1'-oxybis-(I)
U117	Ethyl ether (I)
U121	Methane, trichlorofluoro-
U121	Trichloromonofluoromethane
U122	Formaldehyde
U151	Mercury
U154	Methanol (I)
U154	Methyl alcohol (I)
U210	Ethene, tetrachloro-
U210	Tetrachloroethylene
U225	Bromoform
U225	Methane, tribromo-
U226	Ethane, 1,1,1-trichloro-
U226	Methyl chloroform
U240	2,4-D, salts & esters
U240	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U240	Dichlorophenoxyacetic acid 2,4-D

Code	Waste description
U210	Ethene, tetrachloro-
U210	Tetrachloroethylene
U225	Bromoform
U225	Methane, tribromo-
U226	Ethane, 1,1,1-trichloro-
U226	Methyl chloroform
U240	2,4-D, salts & esters
U240	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U240	Dichlorophenoxyacetic acid 2,4-D

Partial list -- excludes K codes, which were not reported by assembly plants, and includes only those U and P codes reported by assembly plants in 1991 or 1993.

SOURCE CODES

Code	Waste source
CLEANING AND DEGREASING	
A01	Stripping
A02	Acid cleaning
A03	Caustic (Alkali) cleaning
A04	Flush rinsing
A05	Dip rinsing
A06	Spray rinsing
A07	Vapor degreasing
A08	Physical scraping and removal
A09	Clean out process equipment
A19	Other cleaning and degreasing
SURFACE PREPARATION AND FINISHING	
A21	Painting
A22	Electroplating
A23	Electroless plating
A24	Phosphating
A25	Heat treating
A26	Pickling
A27	Etching
A29	Other surface coating/preparation (Specify in Comments)
PROCESSES OTHER THAN SURFACE PREPARATION	
A31	Product rinsing
A32	Product filtering
A33	Product distillation
A34	Product solvent extraction
A35	By-product processing
A36	Spent catalyst removal
A37	Spent process liquids removal
A38	Tank sludge removal
A39	Slag removal
A40	Metal forming
A41	Plastics forming
A49	Other processes other than surface preparation (Specify in Comments)
PRODUCTION OR SERVICE DERIVED ONE-TIME AND INTERMITTENT PROCESSES	
A51	Leak collection
A53	Cleanup of spill residues
A54	Oil changes
A55	Filter/Battery replacement
A56	Discontinue use of process equipment
A57	Discarding off-spec material
A58	Discarding out-of-date products or chemicals
A59	Other production-derived one-time and intermittent processes
A60	Sludge removal
REMEDIATION DERIVED WASTE	
A61	Superfund Remedial Action
A62	Superfund Emergency Response
A63	RCRA Corrective Action at solid waste management unit
A64	RCRA closure of hazardous waste management unit
A65	Underground storage tank cleanup
A69	Other remediation
POLLUTION CONTROL OR WASTE TREATMENT PROCESSES	
A71	Filtering/screening
A72	Metals recovery
A73	Solvents recovery
A74	Incineration/Thermal treatment
A75	Wastewater treatment
A76	Sludge dewatering
A77	Stabilization
A78	Air pollution control devices
A79	Leachate collection
A89	Other pollution control or waste treatment
OTHER PROCESSES	
A91	Clothing and personal protective equipment
A92	Routine cleanup wastes (e.g., floor sweepings)
A93	Closure of management unit(s) or equipment other than by remediation specified in codes A61 - A69
A94	Laboratory wastes
A99	Other

FORM CODES

Code	Waste description

LAB PACKS - Lab packs of mixed wastes, chemicals, lab wastes

B001	Lab packs of old chemicals only
B002	Lab packs of debris only
B003	Mixed lab packs
B004	Lab packs containing acute hazardous wastes
B009	Other lab packs (Specify in Comments)

LIQUIDS

INORGANIC LIQUIDS - Waste that is primarily inorganic and highly fluid (e.g., aqueous), with low suspended inorganic solids and low organic content

B101	Aqueous waste with low solvents
B102	Aqueous waste with low other toxic organics
B103	Spent acid with metals
B104	Spent acid without metals
B105	Acidic aqueous waste
B106	Caustic solution with metals but no cyanides
B107	Caustic solution with metals and cyanides
B108	Caustic solution with cyanides but no metals
B109	Spent caustic
B110	Caustic aqueous waste
B111	Aqueous waste with reactive sulfides
B112	Aqueous waste with other reactives (e.g., explosives)
B113	Other aqueous waste with high dissolved solids
B114	Other aqueous waste with low dissolved solids
B115	Scrubber water
B116	Leachate
B117	Waste liquid mercury
B119	Other inorganic liquids (Specify in Comments)

ORGANIC LIQUIDS - Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content

B201	Concentrated solvent-water solution
B202	Halogenated (e.g., chlorinated) solvent
B203	Nonhalogenated solvent
B204	Halogenated/nonhalogenated solvent mixture
B205	Oil-water emulsion or mixture
B206	Waste oil
B207	Concentrated aqueous solution of other organics
B208	Concentrated phenolics
B209	Organic paint, ink, lacquer, or varnish
B210	Adhesives or epoxies
B211	Paint thinner or petroleum distillates
B212	Reactive or polymerizable organic liquid
B219	Other organic liquids (Specify in Comments)

SOLIDS

INORGANIC SOLIDS - Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable

B301	Soil contaminated with organics
B302	Soil contaminated with inorganics only
B303	Ash, slag, or other residue from incineration of wastes
B304	Other "dry" ash, slag, or thermal residue
B305	"Dry" lime or metal hydroxide solids chemically "fixed"
B306	"Dry" lime or metal hydroxide solids not "fixed"
B307	Metal scale, filings, or scrap
B308	Empty or crushed metal drums or containers
B309	Batteries or battery parts, casings, cores
B310	Spent solid filters or adsorbents
B311	Asbestos solids and debris
B312	Metal-cyanide salts/chemicals
B313	Reactive cyanide salts/chemicals
B314	Reactive sulfide salts/chemicals
B315	Other reactive salts/chemicals
B316	Other metal salts/chemicals
B319	Other waste inorganic solids (Specify in Comments)

ORGANIC SOLIDS - Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable

B401	Halogenated pesticide solid
B402	Nonhalogenated pesticide solid
B403	Solid resins or polymerized organics
B404	Spent carbon
B405	Reactive organic solid
B406	Empty fiber or plastic containers
B407	Other halogenated organic solids (Specify in Comments)
B409	Other nonhalogenated organic solids (Specify in Comments)

FORM CODES

Code	Waste description

SLUDGES

INORGANIC SLUDGES - Waste that is primarily inorganic, with moderate-to-high water content and low organic content, and pumpable

B501	Lime sludge without metals
B502	Lime sludge with metals/metal hydroxide sludge
B503	Wastewater treatment sludge with toxic organics
B504	Other wastewater treatment sludge
B505	Untreated plating sludge without cyanides
B506	Untreated plating sludge with cyanides
B507	Other sludge with cyanides
B508	Sludge with reactive sulfides
B509	Sludge with other reactives
B510	Degreasing sludge with metal scale or filings
B511	Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)
B512	Sediment or lagoon dragout contaminated with organics
B513	Sediment or lagoon dragout contaminated with inorganics only
B514	Drilling mud
B515	Asbestos slurry or sludge
B516	Chloride or other brine sludge
B519	Other inorganic sludges (Specify in Comments)

ORGANIC SLUDGES - Waste that is primarily organic with low-to-moderate inorganic solids content and water content, and pumpable

B601	Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
B602	Still bottoms of nonhalogenated solvents or other organic liquids
B603	Oily sludge
B604	Organic paint or ink sludge
B605	Reactive or polymerizable organics
B606	Resins, tars, or tarry sludge
B607	Biological treatment sludge
B608	Sewage or other untreated biological sludge
B609	Other organic sludges (Specify in Comments)

GASES

INORGANIC GASES - Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure

B701	Inorganic gases

ORGANIC GASES - Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure

B801	Organic gases

SYSTEM TYPE CODES

Code	System Type
	METALS RECOVERY (FOR REUSE)
M011	High temperature metals recovery
M012	Retorting
M013	Secondary smelting
M014	Other metals recovery for reuse: e.g., ion exchange, reverse osmosis, acid leaching, etc. (Specify in Comments)
M019	Metals recovery - type unknown
	SOLVENTS RECOVERY
M021	Fractionation/distillation
M022	Thin film evaporation
M023	Solvent extraction
M024	Other solvent recovery (Specify in Comments)
M029	Solvents recovery - type unknown
	OTHER RECOVERY
M031	Acid regeneration
M032	Other recovery: e.g., waste oil recovery, nonsolvent organics recovery, etc. (Specify in Comments)
M039	Other recovery - type unknown
	INCINERATION
M041	Incineration - liquids
M042	Incineration - sludges
M043	Incineration - solids
M044	Incineration - gases
M049	Incineration - type unknown
	ENERGY RECOVERY (REUSE AS FUEL)
M051	Energy recovery - liquids
M052	Energy recovery - sludges
M053	Energy recovery - solids
M059	Energy recovery - type unknown
	FUEL BLENDING
M061	Fuel blending
	AQUEOUS INORGANIC TREATMENT
M071	Chrome reduction followed by chemical precipitation
M072	Cyanide destruction followed by chemical precipitation
M073	Cyanide destruction only
M074	Chemical oxidation followed by chemical precipitation
M075	Chemical oxidation only
M076	Wet air oxidation
M077	Chemical precipitation
M078	Other aqueous inorganic treatment: e.g., ion exchange, reverse osmosis, etc. (Specify in Comments)
M079	Aqueous inorganic treatment - type unknown
	AQUEOUS ORGANIC TREATMENT
M081	Biological treatment
M082	Carbon adsorption
M083	Air/steam stripping
M084	Wet air oxidation
M085	Other aqueous organic treatment (Specify in Comments)
M089	Aqueous organic treatment - type unknown
	AQUEOUS ORGANIC AND INORGANIC TREATMENT
M091	Chemical precipitation in combination with biological treatment
M092	Chemical precipitation in combination with carbon adsorption
M093	Wet air oxidation
M094	Other organic/inorganic treatment (Specify in Comments)
M099	Aqueous organic and inorganic treatment - type unknown
	SLUDGE TREATMENT
M101	Sludge dewatering
M102	Addition of excess lime
M103	Absorption/adsorption
M104	Solvent extraction
M109	Sludge treatment - type unknown

SYSTEM TYPE CODES

Code	System Type
STABILIZATION	
M111	Stabilization/Chemical fixation using cementitious and/or pozzolanic materials
M112	Other stabilization (Specify in Comments)
M119	Stabilization - type unknown
OTHER TREATMENT	
M121	Neutralization only
M122	Evaporation only
M123	Settling/clarification only
M124	Phase separation (e.g., emulsion breaking, filtration) only
M125	Other treatment (Specify in Comments)
M129	Other treatment - type unknown
DISPOSAL	
M131	Land treatment/application/farming
M132	Landfill
M133	Surface impoundment (to be closed as a landfill)
M134	Deepwell/underground injection
M135	Direct discharge to sewer/POTW (no prior treatment)
M136	Direct discharge to surface water under NPDES (no prior treatment)
M137	Other disposal (Specify in Comments)
TRANSFER FACILITY STORAGE	
M141	Transfer facility storage, waste was shipped off site with no on-site TDR activity

Attachment E-2

RCRA Biennial Report System

QUANTITY CONVERSION AND NORMALIZATION

Biennial report quantities are reported and stored as a numeric quantity value with associated unit of measure information. When the unit of measure is volumetric (gallons, liters, or cubic yards) a density value and density unit of measure (pounds per gallon or specific gravity) are also stored.

Prior to performing arithmetic operations such as addition, reported quantities must be converted to a common unit of measure. This process is called quantity normalization. Most biennial report analysis uses English short tons as the common unit of measure. A short ton is equal to 2000 pounds.

The quantity normalization process used for non-volumetric quantities (pounds, short tons, kilograms or metric tons) is different than the process used to normalize volumetric quantities. Both processes are described below.

Quantities with non-volumetric units of measure (pounds, short tons, kilograms or metric tons) are normalized to short tons by multiplying the reported quantity value by a conversion factor. The conversion factors are determined by the unit of measure reported with the quantity and are provided in Table I below.

SOURCE: U.S. EPA, Office of Solid Waste, *Instruction Manual for the Biennial Reporting System (BRS) NTIS Data Tape*, April 1995.

Table I Short Tons Conversion Table. A Short Ton is equal to 2000 pounds.

When Unit of Measure is		Where: **Qv** = Quantity Value & **Sg** = Specific Gravity **The Short Tons (2000lb) Conversion formula is**
Pounds	(1)	Short Tons = **Qv** X 0.0005
Short Tons	(2)	Short Tons = **Qv** X 1
Kilograms	(3)	Short Tons = **Qv** X 0.001102499366063
Metric Tons	(4)	Short Tons = **Qv** X 1.102535832415
Gallons	(5)	Short Tons = **Qv** X **Sg** X 0.004170141784821
Liters	(6)	Short Tons = **Qv** X **Sg** X 0.001102499366063
Cubic Yards	(7)	Short Tons = **Qv** X **Sg** X 0.84

Reporters may report quantities using a variety of units of measure. Before performing arithmetic operations, quantities must be converted to a common unit of measure. EPA uses English Tons as the common unit of measure because the quantities of wastes reported total over in the hundreds of millions of tons.

Quantities with volumetric units of measure are normalized to short tons in a three step process. The first step of the process normalizes density to a common unit measure (specific gravity - sg). Density is normalized by multiplying the reported density value by a conversion factor. The conversion factor is determined by the density unit of measure reported with the density value. When the density unit of measure is pounds per gallon, the density value is multiplied by 0.1199040767386. When the density unit of measure is specific gravity, there is no conversion necessary. See Table II, below.

SOURCE: U.S. EPA, Office of Solid Waste, *Instruction Manual for the Biennial Reporting System (BRS) NTIS Data Tape*, April 1995.

Table II Density Conversion Table. A specific gravity of 1.0 equals 8.34 pounds per gallon.

When Density Unit of Measure is	Where:**Dv** = Density Value & **Sg** = Specific Gravity **The Specific Gravity Conversion formula is**
Pounds/Gallon (1)	**Sg** = **Dv** X 0.1199040767386
Specific Gravity(2)	**Sg** = **Dv** X 1

Reporters are allowed to report density in either pounds per gallon or specific gravity. Before performing aggregations of quantities, all densities should be converted to a common density measure.

The second step applies a range restriction to density. When the reported density is not within a range considered plausible, a density of water(1sg) is assigned. The plausible range includes solvents (0.40sg) at the lower and mercury (15.0sg) at the upper boundary. This step is optional, but should be applied when there is a desire to match EPA's calculations. See Table III, below.

Table III Density Adjustment Table. The specific gravity water is 1.0.

When Specific Gravity is	Where:**Dv** = Density Value & **Sg** = Specific Gravity **The Specific Gravity Adjustment formula is**
Sg < = 0.40 (Density < Solvents)	**Sg** = 1
Sg > = 15.0 (Density > Mercury)	**Sg** = 1

Density adjustment assigns the density of water to wastes having a reported density that is outside of a range considered plausible.

The third step multiplies the quantity value, normalized density and a short tons conversion factor to produce the short ton equivalent. Again, the conversion factor is determined by the quantity unit of measure reported with the quantity value. The conversion factors are provided in Table I, above.

SOURCE: U.S. EPA, Office of Solid Waste, *Instruction Manual for the Biennial Reporting System (BRS) NTIS Data Tape*, April 1995.

APPENDIX F

Verification of Assembly Plant Location Coordinates

Latitude and longitude coordinates ("lat/longs") reported by assembly plants as part of their TRI submissions were used to locate plants. EPA has developed a review process for lat/long coordinates which results in selection of "preferred" lat/longs where the submitted coordinates appear to be in error.[1] For this project, we conducted a further review of the preferred lat/longs for each assembly plant, which resulted in further adjustments for some plants. Based on the results of this review, EPA is planning to revise its method for developing preferred lat/longs for facilities with large-area sites. This appendix describes the method used by the Project Team to review the preferred lat/longs.

U.S. Geological Survey (USGS) maps (1:24,000-scale) were used to identify the approximate location of each assembly plant, based on its street address. These maps each encompass a 7.5 x 7.5 minute area (approximately 60 square miles). Then, a local party (fire department, police department, zoning board, planning commission or city hall) was contacted by phone and asked to describe the precise location of the assembly plant. For 41 of the 56 plants, the actual factory building(s) were displayed on the maps. The remaining 15 plants were not shown directly, perhaps because the plants had been constructed after the most recent map update by USGS. In each of these 15 cases, a second local contact was made to ensure that we had accurately identified the plant's location.

Once the plant locations on the maps were verified, lat/longs were plotted using a coordinate plotting tool. New, corrected lat/longs were substituted for EPA's preferred lat/longs only where the preferred lat/longs were (1) more than 200 meters from the plant, (2) were not on plant property, or (3) (in one case) were not available from the EPA preferred coordinates list to begin with. The resulting lat/longs used in this report are therefore those provided by EPA (where the preferred values were retained) or corrected coordinates representing the approximate center of the plant site. These adjustments were reviewed by Loren Hall, the EPA contact for the lat/long verification process.

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[1] *Updated TRI Location Data Quality Assurance and Release Notes for 1987-1993 GIS Coverages*, prepared for U.S. EPA Office of Pollution Prevention and Toxics by ViGYAN Inc., July 19, 1995

The preferred coordinates were retained for 29 of the 56 plants, 26 plants were assigned a corrected lat/long, and one plant without a preferred lat/long to begin with was assigned a lat/long. Comparison of the preferred and corrected lat/longs for the 26 plants indicates that ten of the corrected lat/longs were within 0.5 miles of the preferred lat/longs, four were within 0.51-1.0 miles, seven were within 1.01-2.0 miles, and five were adjusted by more than 2.0 miles. The attached table presents the results of this review.

Reported lat/longs may be in error for a number of reasons, including transcription errors, rounding (e.g., not reporting seconds or decimals), or use of inaccurate maps. There is error inherent in any map-derived lat/longs, even after the review described here.[2] Users of this document should be aware that even the corrected lat/longs are accurate only within a range of feet or meters. Furthermore, especially for large-area sites like assembly plants, different lat/long coordinates might be preferred for different purposes. For example, coordinates may differ for the plant gate, the "flagpole" (center of the plant property) and various emissions sources within the plant. Calculations of demographic and environmental data for areas centered around plant lat/long coordinates should therefore be viewed as approximations.

[2] More accurate methods of determining coordinates requires use of the satellite-based Geographic Positioning System (GPS) with post-processing to correct for "selective availability" (errors deliberately introduced for military security reasons.) This level of effort was beyond the scope of this project.

	NAME	STATE, CITY	TRI PREFERRED LATITUDE (degrees N)	TRI PREFERRED LONGITUDE (degrees W)	PROJECT CORRECTED LATITUDE (degrees N)	PROJECT CORRECTED LONGITUDE (degrees W)	DISTANCE FROM PREFERRED (miles)
1	NUMMI	CA, Fremont	37 30' 37"	121 59' 20"	37 29' 5"	121 56' 30"	2.5
2	Chrysler Corp.	DE, Newark	39 40' 0"	75 45' 30"	--	--	
3	General Motors	DE, Wilmington	39 43' 29"	75 36' 32"	--	--	
4	General Motors	GA, Doraville	33 54' 15"	84 17' 15"	--	--	
5	Ford Motor Co.	GA, Hapeville	33 39' 24"	84 24' 48"	33 39' 6"	84 24' 9"	0.8
6	Chrysler Corp.	IL, Belvidere	42 14' 19"	88 51' 6"	42 14' 11"	88 51' 55"	0.8
7	Ford Motor Co.	IL, Chicago	41 39' 58"	87 33' 32"	--	--	
8	Diamond Star	IL, Normal	40 31' 35"	89 3' 37"	40 31' 18"	89 3' 33"	0.4
9	General Motors	IN, Fort Wayne	40 57' 37"	85 17' 42"	40 58' 6"	85 17' 56"	0.6
10	Subaru-Isuzu	IN, Lafayette	40 22' 41"	86 49' 2"	40 22' 53"	86 47' 30"	1.3
11	General Motors	KS, Kansas City	39 9' 15"	94 36' 12"	--	--	
12	General Motors	KY, Bowling Green	37 0' 33"	86 22' 25"	--	--	
13	Toyota Motor M	KY, Georgetown	38 16' 1"	84 30' 21"	38 15' 0"	84 31' 30"	1.7
14	Ford Motor Co.	KY, Louisville	38 18' 16"	85 33' 24"	38 18' 16"	85 33' 53"	0.5
15	Ford Motor Co.	KY, Louisville	38 9' 26"	85 43' 55"	--	--	
16	General Motors	LA, Shreveport	32 29' 27"	93 46' 16"	32 25' 40"	93 55' 0"	8.0
17	General Motors	MD, Baltimore	39 15' 58"	76 32' 36"	--	--	
18	Ford Motor Co.	MI, Dearborn	42 18' 30"	83 9' 23"	--	--	
19	Chrysler Corp.	MI, Detroit	42 22' 25"	82 57' 36"	--	--	
20	General Motors	MI, Detroit	42 22' 9"	83 3' 53"	42 22' 22"	83 3' 45"	0.3
21	General Motors	MI, Detroit	42 24' 23"	83 2' 42"	42 22' 51"	83 2' 30"	1.8
22	Auto Alliance Itl.	MI, Flat Rock	42 5' 36"	83 14' 45"	42 5' 55"	83 14' 45"	0.3
23	General Motors	MI, Flint	42 59' 15"	83 42' 49"	--	--	
24	General Motors	MI, Flint	43 2' 6"	83 41' 19"	--	--	
25	General Motors	MI, Lake Orion	42 43' 10"	83 15' 13"	--	--	
26	General Motors	MI, Lansing	42 44' 15"	84 34' 38"	--	--	
27	General Motors	MI, Lansing	42 43' 27"	84 33' 21"	--	--	
28	General Motors	MI, Pontiac	42 37' 17"	83 16' 52"	--	--	
29	Chrysler Corp.	MI, Sterling Heights	42 33' 57"	83 1' 47"	--	--	
30	Chrysler Corp.	MI, Warren	42 43' 56"	84 33' 17"	42 27' 21"	83 2' 30"	10+
31	Ford Motor Co.	MI, Wayne	42 16' 42"	83 24' 41"	--	--	
32	Ford Motor Co.	MI, Wayne	42 16' 41"	83 25' 1"	--	--	
33	Ford Motor Co.	MI, Wixom	42 29' 42"	83 32' 27"	42 30' 15"	83 32' 20"	0.8
34	Ford Motor Co.	MN, St. Paul	44 54' 50"	93 11' 45"	--	--	
35	Ford Motor Co.	MO, Claycomo	39 12' 7"	94 29' 30"	39 12' 7"	94 28' 45"	1.3
36	Chrysler Corp.	MO, St. Louis	38 32' 38"	90 27' 56"	38 32' 50"	90 27' 45"	0.3
37	Ford Motor Co.	MO, St. Louis	38 46' 23"	90 21' 42"	38 46' 15"	90 21' 30"	0.2
38	General Motors	MO, Wentzville	38 48' 30"	90 48' 13"	38 49' 9"	90 49' 26"	1.3
39	Ford Motor Co.	NJ, Edison	40 30' 39"	74 24' 31"	40 31' 5"	74 22' 20"	1.8
40	General Motors	NJ, Linden	40 37' 2"	74 15' 8"	--	--	
41	General Motors	NY, N. Tarrytown	41 5' 0"	73 52' 0"	41 5' 0"	73 52' 15"	0.3
42	Ford Motor Co.	OH, Avon Lake	41 29' 7"	82 3' 39"	41 29' 7"	82 3' 50"	0.1
43	Honda	OH, E. Liberty	40 19' 41"	83 34' 22"	--	--	
44	Ford Motor Co.	OH, Lorain	41 25' 30"	82 16' 51"	--	--	
45	General Motors	OH, Lordstown	41 8' 34"	80 50' 24"	41 8' 15"	80 52' 40"	2.3
46	Honda	OH, Marysville	40 17' 7"	83 31' 35"	--	--	
47	General Motors	OH, Moraine	39 41' 49"	84 13' 2"	--	--	
48	Chrysler Corp.	OH, #1 Toledo	41 40' 34"	83 34' 30"	41 40' 52"	83 33' 56"	0.5
49	Chrysler Corp.	OH, #2 Toledo	41 40' 49"	83 33' 44"	--	--	
50	General Motors	OK, Oklahoma City	35 37' 0"	97 34' 5"	35 23' 40"	97 23' 50"	8.0
51	BMW*	SC, Greer			34 53' 54"	82 9' 33"	
52	Nissan Motor MFG.	TN, Smyrna	35 57' 47"	86 29' 43"	--	--	
53	General Motors	TN, Spring Hill	35 44' 38"	86 56' 27"	35 43' 15"	86 58' 15"	1.3
54	General Motors	TX, Arlington	32 44' 6"	97 3' 56"	--	--	
55	Ford Motor Co.	VA, Norfolk	36 49' 59"	76 15' 5"	36 50' 0"	76 14' 55"	0.3
56	General Motors	WI, Janesville	42 39' 55"	89 1' 9"	--	--	

* The BMW plant has not yet submitted TRI reports and therefore did not have "TRI preferred" location coordinates.

APPENDIX G

Description of Corrections

Project Team members from General Motors, Ford and Chrysler reviewed a draft of the data in this report and compared the data with their records to check for accuracy. This review was a substantial help in identifying errors and revealing areas where there might be confusion about the data. This appendix describes the results of that review.

A number of differences were identified between the TRI data in the report and the data in the companies' records. Investigation of these differences revealed two primary reasons (other than errors in transcription) for the discrepancies. First, in some cases there had been revisions submitted by the companies since the data were pulled from the national TRI database. Because the TRI database is continually updated, data pulled at different times may be inconsistent. Where this was the case, the data in this report were updated to the most current values. Second, some apparent discrepancies were due to use of different sections of the TRI database. Companies in some cases used Section 8 data to compare with the report data, which are based on Sections 5 and 6 of the TRI Form R. The report retains the Section 5 and 6 data, for consistency. However, this comparison illustrated the substantial confusion that can arise due to the presence of similar data categories in two parts of the TRI data that are defined differently. Confusion could be reduced if TRI reports and databases accessible to the public were clearly annotated to show which section of the Form R specific data are drawn from.

Chrysler made changes to the VOC and NOx emissions data that had been obtained from state contacts. These changes were incorporated in the report. Discussion of the discrepancies with state contacts revealed that emissions data can differ for a variety of reasons, including delays in updating state data, different decisions about what parts of a complex facility should be included as the assembly plant, and state revisions to the data (such as Delaware's practice of increasing emissions estimates by a standard 15 percent to reflect "rule effectiveness").

The companies suggested a number of changes to the latitude and longitude coordinates, generally to be consistent with the coordinates they originally submitted with their TRI Form Rs. This report retains the "preferred" or "corrected" coordinates developed as described in Appendix F. Review of the suggested corrections showed that in most cases the two alternatives were very close (e.g., at different points within the plant boundary). The review also illustrated the ambiguity involved in picking a single location point for large sites such as assembly plants. As noted in Appendix F, users of the data compiled for areas around plants should be aware that use of different but equally valid coordinates might show different results (e.g., for population density or number of area TRI reporters.)

APPENDIX H

Attainment Status Classifications

Air Quality Control Regions (AQCRs) are classified according to their status with respect to each of the criteria pollutants for which ambient air quality standards have been established. The following general classifications are used. Standards for each pollutant are shown below.

- **Attainment:** Any area (other than an area identified as a nonattainment area, as defined below) that meets the national primary or secondary ambient air quality standard for the pollutant.

- **Maintenance:** An area that has gone from a nonattainment designation to an attainment designation. These areas have approved maintenance plans in place which include measures to maintain air quality above the national standard and contingency measures to implement if an area's air quality fails to meet the standard.

- **Nonattainment:** Any area that does not meet (or that contributes to ambient air in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

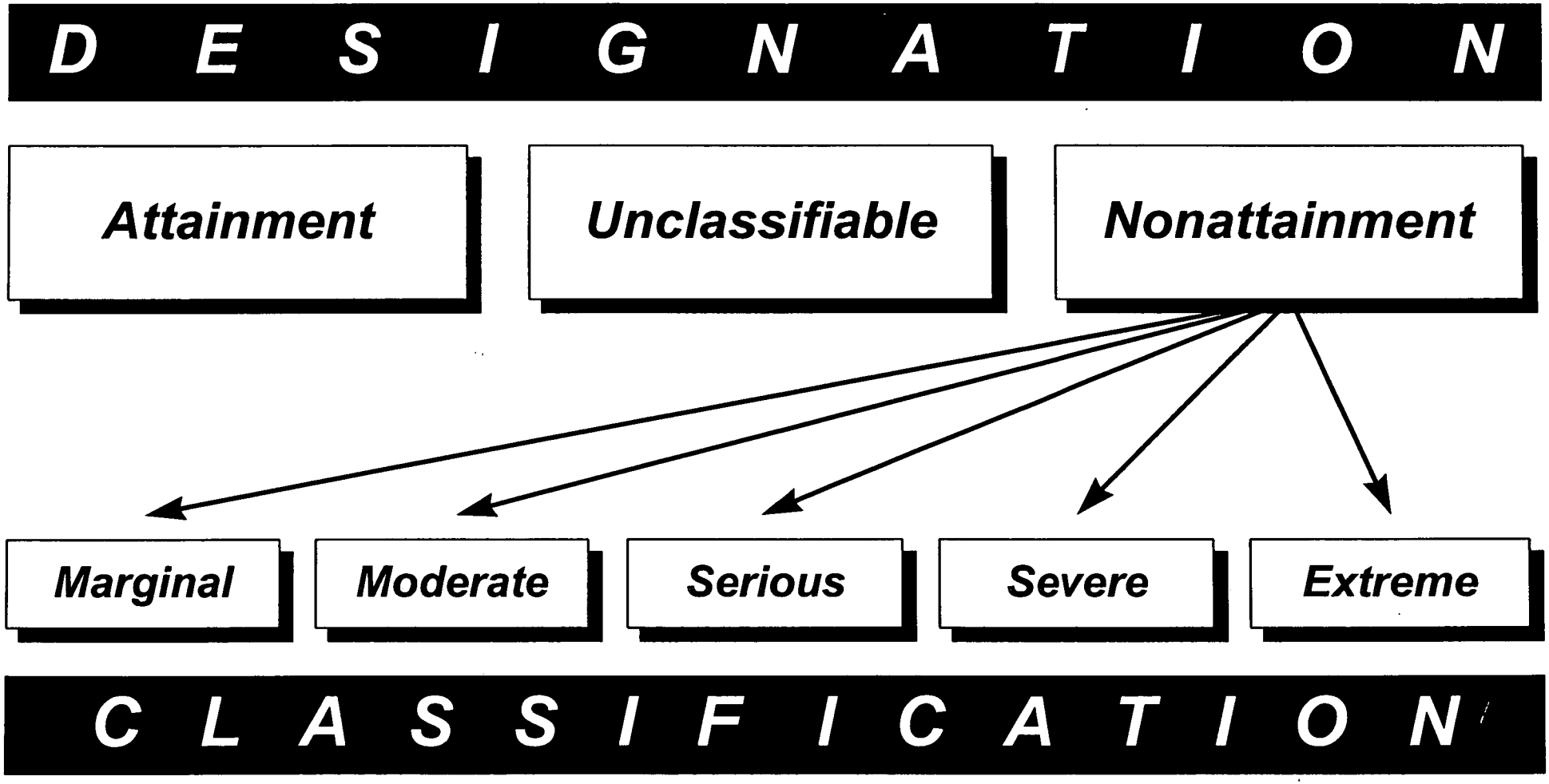
- **Unclassifiable:** Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

STANDARDS FOR CLASSIFICATION OF AREA AIR QUALITY ATTAINMENT STATUS BY CRITERIA POLLUTANT

CLASS	LEVEL (PPM)
OZONE	
Marginal	.121 up to .138
Moderate	.138 up to .160
Serious	.160 up to .180
Severe 1	.180 up to .190
Severe 2	.190 up to .280
Extreme	.280 and above
CARBON MONOXIDE	
Moderate	9.1 to 16.4
Serious	16.5 and above

For ozone and CO; adjustment possible based on 5% rule

Classification Process



APPENDIX I

Methodology for 3-Mile Radius Demographic Profiles

This appendix describes the methods used to compile two types of data for areas surrounding assembly plants: (1) demographic data taken from the Census of Population for various sized areas around plants (Census Blocks and circles of 0-1, 0-3, 1-3, and 3-5 mile radii around plants), and (2) 1994 TRI emissions data for sources located within a three-mile radius. Assembly plant locations were identified by the lat/long coordinates described in Appendix F. Geographic Information System (GIS) software was used by EPA Region IV staff to calculate sums for the areas of interest, as described below.

Demographic Data

All demographic data used were obtained from the 1990 U.S. Census of Population Summary Tape File version 3A. The Block Group summary level data were used to calculate populations in the vicinity of each assembly plant site. Summary levels 040 and 050 were used to extract comparative data for the states and counties. It was assumed that Census Block populations and their racial, income and educational attainment characteristics are uniformly distributed within the Census Block, which allowed estimating numbers of persons in various categories for pieces of Census Blocks that fall within the target circles around plants

The following are the sources and methods used for each data element:

- Total Persons was taken from STF Table P0010001

- Minority Population was calculated by subtracting the reported White Persons (STF Table P008001) from STF Table P0010001 (Total Persons).

- Educational Attainment for persons aged 18 and older is reported as percentage not completing high school. This percentage was calculated by summing the values for STF Tables P0600001 and P0600002, which represent, respectively, a count of persons who have less than a 9th grade education and a count of persons having achieved an education between 9th and 12th grades, inclusive, but not obtaining a diploma. Total educated persons aged 18 or older was calculated by summing STF Tables P0600001 through P0600007. The percentage was then calculated as:

$$100 * \frac{\{\text{\# educated persons without high school diploma}\}}{\{\text{Total \# educated persons}\}}$$

- Poverty Level was calculated using the national poverty level income of $12,500 per four-person household.[1] A household consists of either one person living alone or any group of related or unrelated persons living together in a single housing unit. The total number of households was calculated by summing STF Tables P0800001 through P0800025, and the number of households below the four-person household poverty level was calculated by summing Tables P0800001, P0800002 and P0800003. The percent of households below the poverty level was then calculated as:

$$100 * \frac{\{\text{\# households below poverty level income}\}}{\{\text{Total \# households}\}}$$

- Population densities were calculated based on land area only.

Toxics Release Inventory Data

To identify TRI reporters within three miles of each assembly plant, the facility lat/long was "buffered" with a three mile radius. This buffer was then used to clip from a TRI dataset the sites within three miles. The TRI coverage was obtained from the national TRI coverages available on the EPA internet web site.

TRI release data were downloaded from EPA's mainframe using a standard retrieval program. The fields obtained included TRI ID number, CAS codes, Chemical Name, and Release Type Codes (M codes). The data were then processed to ensure that only one CAS number/TRI number pair existed for each chemical released from a particular facility. The fields were then filled in by inserting values using the original chemical table and a subset table in a relational schema.

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[1] A more precise estimate of percentages of households below the poverty level would compare income for each household to the appropriate poverty level income for that size household. This more accurate calculation could not be performed because data on household income are not reported in sufficient detail for reasons of confidentiality. The approximation used may either over- or understate numbers of households below the poverty level, depending on the size distribution of households in a particular area.

APPENDIX J

Plants Closed or Converted 1991 - 1994

The following plants operated as assembly plants sometime during the period 1991 through 1994, but were not included in the universe for this report because they had closed or been converted to non-assembly operations by 1995.

- General Motors, Van Nuys (Los Angeles) CA: produced autos, ceased assembly after 1991.
- Chrysler, South St. Louis MO: operated in 1991, closed 1992-1994, reopened 1995.
- General Motors, Willow Run MI: produced autos, ceased assembly after 1993.
- General Motors, Pontiac West, Pontiac MI: produced trucks, ceased assembly after 1994.