EPA United States Environmental Protection Agency

Economic Impact Analysis for the Proposed Review of New Sources and Modifications in Indian Country

Based upon our evaluation of current Tribal emission inventories and the application of updated growth rates, we have determined that the analysis has not changed significantly to date; therefore, the May 2003 analysis for the period 2004–2010 remains valid for the EIA and the associated ICR supporting statement. This analysis will be updated for the final rulemaking.

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Economic Impact Analysis for the Proposed Review of New Sources and Modifications in Indian Country

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ACRONYMS AND ABBREVIATIONS

AIA	American Indian Area
AI/AN	American Indian/Alaskan Native
CTG	Control Techniques Guidelines
EIA	Economic Impact Analysis
EPA	Environmental Protection Agency
FIP	Federal Implementation Plan
ICI	Industrial, commercial and institutional (boilers)
MMNSR	Major and Minor New Source Review
MSCT	Minor Source Control Technology
NAICS	North American Industrial Classification System
NSPS	New Source Performance Standards
OAQPS	Office of Air Quality Planning and Standards
OMB	Office of Management and Budget
RFA	Regulatory Flexibility Act
SBA	Small Business Administration
SBREFA	Small Business Regulatory Enforcement Fairness Act
SIC	Standard Industrial Classification
SISNOSE	Significant Impact to a Substantial Number of Small Entities (small businesses, small organizations, and small governments)
TGA	Tribal Geographic Area
TIP	Tribal Implementation Plan

EXECUTIVE SUMMARY

ES.1 Introduction

In this document, the U.S. Environmental Protection Agency (EPA) analyzes the potential economic impacts of the proposed Review of New Sources and Modifications in Indian Country, hereafter referred to as the proposed rule. The proposed rule potentially affects new minor sources, modified minor sources, minor modifications to existing major sources, and sources accepting emissions limitations to become synthetic minor sources. In addition, the proposed rule establishes nonattainment New Source Review for major sources and major modifications to major sources in Indian Country. Because the rule affects sources that have not yet been created, EPA does not have data on what sources or companies will actually be affected. Instead, EPA estimated the number of each source type that would be affected over the analysis period (2004 through 2010). EPA's analysis relies on assumptions that future facilities will resemble existing facilities, and future parent companies will resemble existing parent companies. Overall, EPA estimates that the total annualized costs of compliance for industry affected by the proposed rule will be approximately $6 million per year. These costs do not account for possible cost savings to firms choosing to limit emissions and become synthetic minors; this flexibility is available under the proposed rule and would reduce the regulatory compliance costs of such facilities. Similarly, the analysis does not attempt to quantify or value any potential benefits to human health or the environment although EPA believes that there will be such benefits.

ES.2 Methods for Estimating Impacts on New Sources and Modifications in Indian Country

Because the proposed rule affects new and modified sources, EPA must first estimate the number of affected new and modified sources in Indian Country over a period after promulgation. EPA analyzes the impacts of the proposed rule over the period 2004 (the year of promulgation) through 2010. Typically, New Source Performance Standards (NSPS) are analyzed over a period of 3 to 5 years after promulgation. EPA chose a longer time horizon for the analysis to provide a slightly longer period over which new sources may be planned, and impacts analyzed. To coincide with publicly available projections that could be used in the analysis, EPA chose 2010 as the end point for the analysis. Thus, the projection of new minor sources is for the period 2004 to 2010.

ES.2.1 Data Sources

Section 2 describes the process of estimating the number of new and modified minor and major source facilities that would be created in Indian Country in the absence of the rule. EPA has no information on planned construction of new sources in Indian Country, and thus must estimate this number using the best data available. Unfortunately, data on minor sources on Indian Country are limited to fewer than a dozen Tribal emissions inventories. EPA examined numerous possible sources of information about minor sources, including EPA databases and data compiled by EPA regions. In addition to encouraging Tribes to be involved in the rulemaking process, EPA asked if Tribes were aware of any data on minor sources. The most reliable data found were 11 Tribal emissions inventories maintained by EPA/OAQPS. EPA used these data to identify the types of minor sources most likely to be affected, and then used publicly available Census data to estimate how many existing minor sources of each type are located in Indian Country. To characterize major sources, EPA used the list of existing sources in Indian Country that have Part 71 permits as indicative of the types of major sources that would be affected by the rule. EPA then used publicly available projections of Tribal population growth over the period 2004 to 2010 to project how many new minor and major sources of each type would be created over the period in the absence of the proposed rule. EPA also used census data to estimate how many large and small parent companies would own the new and modified sources. Finally, EPA computed an administrative burden cost and compared it to data for several representative Tribes to assess whether the costs of administering the program would be significant for Tribes that choose delegation.

ES.2.2 Projecting the Number of Affected Sources

EPA has only very limited data on existing minor sources in Indian Country. Because minor sources are not currently regulated, no minor source data are collected in EPA databases. EPA searched EPA databases and EPA regional information, and concluded that the only reliable characterization of the types of minor sources currently operating in Indian Country was data compiled in 11 Tribal inventories maintained by EPA's Office of Air Quality Planning and Standards. EPA identified the industries associated with each type of minor source, and collected state data from the Economic Census (1997) on the number of facilities in each industry. EPA used Tribal share of state income to estimate the number of existing establishments in Indian Country, then used the rate of growth of Tribal populations to estimate the number of new sources in Indian Country from 2004 through 2010. EPA estimates there are 3,169 existing minor sources in Indian Country (see Table

ES-1), and that 288 new minor sources would be created in Indian Country over the study period (see Table ES-2).

Table ES-1. Estimated Number of Existing Minor Sources in Indian Country, 1997: Estimated number of existing sources, allocated based on Tribal share of state income or population

	Allocation Based on Income				
Sector	East	East Central	West Central	West	Grand Total
Sand and gravel processing	0	2	28	3	33
Lumber saw mill	1	3	19	9	32
Printing operation (lithographic)	2	11	140	18	171
Asphalt hot mix plant	0	1	13	0	14
Natural gas compressor station	0	2	71	2	74
Solid waste landfill	0	1	18	2	20
Concrete batching plant	0	2	22	3	27
Grain elevator	0	4	112	12	129
Gasoline bulk plant	1	7	111	13	132
Gasoline station (storage tanks, refueling)	15	88	1,588	122	1,814
Dry cleaner	3	14	222	22	261
Automobile refinishing shop	4	23	311	40	377
Stone quarrying and processing	0	1	26	0	27
Surface coating operations	0	2	29	2	33
Industrial, commercial and institutional boiler: natural gas	0	12	12	0	24
Industrial, commercial and institutional boiler: oil-fired	0	0	0	0	1
Total existing sources	28	172	2,721	248	3,169

Note: Totals may not equal sum of sectors due to rounding.

Similarly, EPA assumed that 10 percent of existing sources would make a modification each year, but only 5 percent of those would result in emissions greater than *de minimus*. Thus, EPA projects that 112 modified minor sources would incur permitting costs due to the rule and that half of those sources would also be required to implement emissions controls.

Table ES-2. Projected Number of New Minor Sources in Indian Country, Based on Tribal Population Growth Rate

Sector	East	East Central	West Central	West	Grand Total
Sand and gravel processing	0	0	2	0	2
Lumber saw mill	0	0	2	1	3
Printing operation (lithographic)	0	1	12	2	15
Asphalt hot mix plant	0	0	1	0	1
Natural gas compressor station	0	0	6	0	6
Solid waste landfill	0	0	2	0	2
Concrete batching plant	0	0	2	0	2
Grain elevator	0	0	11	2	13
Gasoline bulk plant	0	0	10	3	13
Gasoline station (storage tanks, refueling)	1	7	139	20	167
Dry cleaner	0	1	19	2	22
Automobile refinishing shop	0	2	28	5	35
Stone quarrying and processing	0	0	2	0	2
Surface coating operations	0	0	3	0	3
Industrial, commercial or institutional boiler: natural gas fired	0	1	1	0	2
Industrial, commercial or institutional boiler: oil fired	0	0	0	0	0
Total projected new minor sources	1	12	240	35	288

Based on data for 83 existing major source facilities in Indian Country, EPA projects that seven major sources will make minor modifications over the period, one new major source will be sited in a nonattainment area in Indian Country, and one existing major source in a nonattainment area will make a major modification during the period. Existing major sources may also choose to accept Federally enforceable emissions limits to become "synthetic minor sources" under the provisions of the proposed rule; EPA believes sources would make this choice only if this decision would result in cost savings for them. EPA has not projected the number of major sources that might choose to become synthetic minors.

ES.2.3 Characterizing Affected Companies

EPA has no information on companies planning to invest in new minor sources on Tribal land; thus, EPA characterized the companies owning projected new and modified minor source facilities based on typical statistics for existing companies in each industry, gathered from financial databases. EPA used the small business criteria defined by the Small Business Administration to define "small business" for each affected industry. Based on these data, EPA estimated that 164 new minor sources would be owned by 143 small businesses and 62 modified minor sources in Indian Country would be owned by 51 small businesses. EPA also gathered data from financial databases to characterize companies owning existing major sources in Indian Country; because these sources can be identified, the data collected were for the actual companies that own them. EPA estimates that there are 35 major source facilities owned by 23 small companies in Indian Country. EPA does not know which of the existing major sources may choose to make a minor modification over the period of analysis; thus, the assessment of impacts is again based on typical companies in each affected sector.

Because of the uncertainties involved in these estimates, EPA reports results aggregated to the level of large multistate quadrants. EPA believes that the projected number of new minor sources in Indian Country is reasonable and the best estimate available given the existing data. Nevertheless, it is not sufficiently precise to report estimates for specific Tribes. Thus, EPA divided the country into four quadrants and computed and reports numbers of new sources by sector for each quadrant.

ES.3 Estimated Costs of Complying with the Proposed Rule

Since there are no detailed emissions inventories that are universally available for Tribes, the Agency determined that typical source types would be used to estimate costs on a geographic basis. These typical source types are considered to have the greatest potential to be new minor sources located in Indian Country. Costs resulting from the rule are expected for affected sources, which will incur both capital and MRR costs, and tribal agencies, which will be charged with administrative tasks associated with the proposed rule.

Section 3 profiles the emissions and controls associated with the typical source type categories, and the costs of controlling them under the proposed rule. The air pollutants of concern associated with the selected source types include carbon monoxide (CO), nitrous oxide (NO_x), particulate matter (PM), sulfur dioxide (SO_2), and volatile organic compounds (VOC). These pollutants can be controlled using a variety of techniques, including process

modification, material substitution, recovery or recycling, work practices and add-on controls.

To develop the costs associated with controlling these emissions, EPA developed an approach that estimates compliance costs for a typical facility for each source category. Process throughput or operating capacities are needed to size and cost air pollution controls and to estimate emissions. These values were selected to reflect typical minor source sizes for the source category. These assumptions create uncertainty in the cost analysis.

EPA prepared estimates of the costs to implement Minor Source Control Technology (MSCT) for each type of affected source. These estimated costs include capital costs and annualized MSCT costs. Among the affected source categories, printing operations have the lowest annualized MSCT cost, while largest capital costs are borne by the stone quarrying and processing facilities. Gas stations have the highest nationwide total annual compliance costs. Since the agency does not expect any new oil-fired boilers over the analysis period, it is estimated that this source category will have nationwide total annual compliance costs equal to $0. Across all 288 new minor sources, the estimated total nationwide annual compliance cost is $4.9 million. In addition, EPA estimated costs for modifications to existing minor sources, totaling $1.5 million. Finally, EPA estimated costs for minor modifications to existing major sources, totaling $0.02 million.

Because the proposed rule results in an administrative change but no change in compliance requirements for new and modifying major sources, EPA estimates that the costs for these source types will be zero. In fact, because the proposed rule establishes a permitting procedure for these sources that may be more predictable than the source-specific FIPs required at baseline, the rule may reduce the costs for new majors and major modifications. Finally, because choosing to become a synthetic minor is entirely optional, EPA believes that companies would only make this choice if it reduced costs. EPA has not attempted to estimate how many existing major sources might become synthetic minors, and has not quantified their cost savings.

ES.4 Estimated Impacts on New and Modified Minor and Major Sources in Indian Country

In Section 4, EPA presents its analysis of impacts on new and modified sources in Indian Country. EPA analyzed potential impacts on new minor sources and minor modifications to existing major and minor sources based on a qualitative assessment augmented by a quantitative screening comparison of the magnitude of costs for typical minor source facilities in each sector to typical facility and company sales and profits. The

qualitative analysis indicated that the costs associated with the proposed rule have the potential to reduce investment in new minor source facilities or minor modifications to existing minor or major sources over the period. However, because the costs are generally small compared to facility and company sales and profits, EPA estimates that the slowing of investment will be slight. Companies considering siting new major source facilities or making major modifications to existing major sources are projected to incur no incremental costs or impacts, and may experience cost savings and reduced uncertainty as a result of the rule. Companies owning major source facilities that choose to accept Federally enforceable emissions limits are expected to experience cost savings. Thus, overall impacts of the proposed rule are projected to be relatively small. New minor sources and existing sources making minor modifications are projected to incur (relatively small) costs and impacts, while facilities becoming synthetic minors are expected to experience cost savings. Depending on the number of facilities choosing to become synthetic minors, and magnitude of the cost savings synthetic minors realize (not quantified due to lack of data), the proposed rule may on balance result in cost savings for industry.

EPA's assessment of the administrative burden on tribes choosing to administer the program is based on data for several representative tribes currently developing their own air programs. If Tribes choosing to administer the program are similar to these Tribes, the costs of the program will be less than $1 per tribal member per year. Overall, therefore, EPA does not expect that the proposed rule will impose significant burdens to Tribes choosing to accept delegation of the program.

EPA also examined, as presented in Section 5, potential impacts on small entities, in this case small businesses. Looking only at those source types projected to incur costs (new minor sources and minor modifications), EPA estimates that 143 small businesses will incur $2.6 million due to construction of new minor sources, 51 small businesses will incur $0.97 million due to modifying minor sources, and 3 small businesses will incur $0.02 million due to making minor modifications to major sources. Overall, therefore, EPA estimates that the rule will result in $3.6 million in costs for small businesses in Indian Country. For most sectors, the estimated costs represent less than 1 percent of small company sales, and thus will not pose a significant burden to small businesses. For two sectors, solid waste landfills and natural gas compressor stations, costs exceed 1 percent of typical small company sales. However, only one new facility of each type owned by a small business is projected over the analysis period. In addition, three automobile refinishing shops projected to make minor modifications may incur costs close to 1 percent (0.97 percent) of small parent company sales. For several sectors, because large companies typically own a large number of

facilities, projected cost-to-sales ratios (CSRs) for large companies exceed those for small companies, indicating that small companies are not disproportionately burdened by the rule compared to large companies. Overall, therefore, EPA does not believe that the proposed rule will impose a significant economic impact on a substantial number of small entities.

ES.5 Conclusions

EPA's proposed rule potentially affects several types of facilities in Indian Country: new minor sources, minor modifications to existing minor and major sources, new major sources in nonattainment areas, major modifications to major sources in nonattainment areas, and sources choosing to become synthetic minors. EPA analyzed costs and impacts on new minor sources and minor modifications using limited minor source data and assuming that new minor sources would resemble existing ones. New minor sources and minor modifications are projected to result in administrative and emissions control costs totaling approximately $6 million, of which approximately $3.6 will be borne by small businesses. New major sources and major modifications in nonattainment areas in Indian Country are projected to incur no incremental costs or impacts because the rule results in an administrative change that my in fact reduce uncertainty and encourage investment. Major sources are assumed to choose to become synthetic minors only if the choice results in cost savings. Tribes choosing to accept delegation and administer the program are estimated to incur approximately $3,100 per year in costs per source; which is estimated to be less than $1 per affected Tribal member. An assessment of potential impacts on small businesses indicates that small businesses are not disproportionately affected by the rule compared to large businesses, and that a very small number will incur costs exceeding 1 percent of parent company sales. Thus, EPA certifies that the proposed rule will not result in a significant economic impact to a substantial number of small entities.

SECTION 1
INTRODUCTION

The proposed Review of New Sources and Modifications in Indian Country (hereafter referred to as the proposed rule) establishes nationally applicable regulations to implement a permitting program to regulate the construction and modification of stationary sources of air pollution, and to allow certain new and existing stationary sources to voluntarily accept federally enforceable emission limits in order to avoid major source regulations. The proposed rule establishes procedures and terms under which the Administrator will issue permits for new minor source facilities (new plants that are minor sources, minor modifications to existing sources, and creation of synthetic minor sources by voluntarily accepting emissions limitations). In addition, the proposed rule establishes procedures for permitting new major sources and major modifications in nonattainment areas in Indian Country. EPA currently issues preconstruction permits in Indian Country for major sources and major modifications in attainment and unclassifiable areas under the Prevention of Significant Deterioration (PSD) regulations at 40 CFR Part 52.21. EPA has also issued preconstruction permits in Indian Country for major sources and major modifications in nonattainment areas under 40 CFR Part 51, Appendix S. Thus, the rule does not impose any incremental emissions control requirements on new major sources. It does, however, establish a regulatory mechanism for permitting new major sources (new facilities and major modifications at existing facilities) in nonattainment areas in Indian Country. Existing operations at existing minor and major source facilities in Indian Country will not be affected by the proposed rule.

1.1 Definitions of Major Source and Minor Source

To clarify the applicability of the proposed rule, EPA provides the following definitions:

Major Stationary Source means any stationary source that is subject to regulation as a major stationary source under 40 CFR part 52.10 or 52.21, or under applicable regulations approved pursuant to 40 CFR part 51 Subpart 1. These include any stationary source that emits or has the potential to emit 250 tons per year or more of any air pollutant subject to regulation under the Clean Air Act (CAA), or any of a list of selected source types (in 40 CFR 52, §52.21(b)(1)) that emits or has the potential to emit 100 tons per year or more of any pollutant subject to regulation under the CAA.

Major modification means any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the CAA.

Minor stationary source means any stationary source that is not a major stationary source and emits or has the potential to emit any pollutant above de minimus levels.

Minor modification means any modification to a stationary source that is not a major modification.

Major source of hazardous air pollutants is any stationary source or group of contiguous sources under common control that emits or has the potential to emit considering control, in the aggregate, 10 tons per year or more of any hazardous air pollutant (Sec. 112(b)(1) of the CAA) or 25 tons per year or more of any combination of hazardous air pollutants.

Area source of hazardous air pollutants is any stationary source or group of contiguous sources that is not a major source of hazardous air pollutants and emits or has the potential to emit any hazardous air pollutant or combination of hazardous air pollutants above the *de minimus* level.

1.2 Organization of the Economic Impact Analysis Report

This section describes the organization of the analysis to follow.

Section 2 provides a profile of the baseline conditions for the analysis. Baseline conditions are defined as the expected conditions in the absence of the rule. Characterizing the baseline requires collecting data on current conditions in Indian Country and using those data to project conditions after the rule is promulgated (2004 through 2010). Data needed include per capita income and population of Indian Country, types and numbers of minor sources existing today in Indian Country, and projected numbers of new sources that would be created in Indian Country in the absence of the proposed rule.

Because the proposed rule affects new sources and modifications that do not yet exist, EPA must project future conditions in the absence of the rule. The characterization of baseline conditions required compiling demographic and economic data on Tribes. In addition, in order to project the number of new minor sources in Indian Country between the period of 2004 and 2010, EPA examined several possible sources of data. Data on existing minor sources in Indian Country are limited. After exploring the availability of data in EPA databases, from EPA regions, from the Bureau of Indian Affairs, and from the Small Business Administration, and asking Tribes whether they were aware of any such data, EPA concluded that the best source of data on minor sources in Indian Country consist of 11

Tribal emissions inventories maintained by EPA/OAQPS. These inventories were used to identify the types of minor sources expected to be created, and data from the Census of Population (2000) and the Economic Census (1997) were used to estimate the number of existing and new minor sources throughout Indian Country. Insufficient data at the Tribal level prevented a Tribe-specific analysis for the proposed rule. Therefore, EPA relied on a limited yet consistent set of alternative data sources, although this increased the uncertainty of the analysis. Due to these uncertainties, results will be presented at the multi-state quadrant level. These Quadrants are defined as: East, East Central, West Central, and West. Quadrant level reporting is designed to mitigate some of the uncertainty about projections for smaller geographic areas.

An evaluation of baseline conditions indicates the tremendous diversity that exists among Tribal areas within and across Quadrant boundaries. The West Central quadrant accounts for a large majority of existing minor sources (86 percent) and estimates of projected new minor sources between 2004 and 2010 indicate a continuation of this trend.

In Section 3 the Agency estimates the costs and burdens that would typically result from implementation of the proposed rule. Since there were not detailed emission inventories available for each Tribe, EPA decided that typical source types would be used to estimate costs on a geographic basis. These would be the source types that are considered to have the greatest potential to be new minor sources located in Indian Country. Selection of these typical minor source types was based on available tribal emission inventories (i.e., in EPA Regions 8 and 10) and other information gathered from EPA Regional contacts and other publicly available sources (such as the various Tribal related websites).

After identifying the most common types of emission sources likely to be affected by the rule, EPA developed an approach that estimates compliance costs for a typical facility for each source category. Process throughput or operating capacities were selected to reflect typical minor source sizes for the source category. In some cases they are based on a national average value; others are based on existing size categories where the lower end values were selected to characterize minor sources; and in some cases, the values were based on information contained in the available tribal emission inventories. With the information discussed above, EPA has what could be considered the minimum information to complete cost estimates for emission controls for minor source NSR in Indian Country. The resulting uncertainties are discussed in greater detail in Section 3.

Following the description of the baseline in Section 2 and the expected control costs for Tribal entities and new facilities in Indian Country in Section 3, Section 4 gives an

evaluation of how firms and people may react to changes in market conditions. Typically, EPA analyzes these responses by developing models that simulate behavioral changes in response to the rule. In this instance, however, EPA limited its analysis to a qualitative examination of responses to the rule, supplemented by a quantitative screening of the costs of the rule in the context of facility and company sales and profits. Section 4 describes the methods and results of the analysis. In addition, Section 4 examines the possible impacts of the administrative costs of the program on Tribes choosing to administer the NSR program on their lands. Overall, EPA's assessment indicated that for typical facilities and companies, the costs will be relatively low compared to facility and company sales and profits; thus, EPA estimates that for typical companies and new minor source facilities, the costs of complying with the proposed rule will not result in significant delays in investment in new facilities. Similarly, EPA's analysis shows that the administrative burden costs of the rule, when computed on a per-Tribal member basis and compared to Tribes' per capita income, are extremely low and should not present an impediment to Tribes wishing to administer the NSR program.

Section 5 describes the underlying assumptions and computations U.S. Environmental Protection Agency (EPA) made in estimating the number of affected small entities (in this case, small businesses), and examines the proposed rule's possible impact on these entities. EPA estimates that 143 small businesses investing in 164 new minor source facilities over the period 2004 through 2010 will incur approximately $2.6 million per year to comply with the proposed rule. In addition, 51 small businesses owning 62 existing minor sources are projected to make minor modifications to their facilities during the period. These small businesses are estimated to incur approximately $0.97 million in costs. Finally, as three small businesses owning existing major facilities are projected to make minor modifications, incurring approximately $0.02 million. Overall, small businesses are projected to incur $3.6 million due to the proposed rule. EPA conducted a screening analysis comparing the typical costs per small business in each sector with the typical small business sales in each sector, and finds that the proposed rule will not impose significant economic impacts on a substantial number of small businesses.

SECTION 2

PROFILE OF BASELINE CONDITIONS

Promulgation of the proposed Review of New Sources and Modifications in Indian Country (hereafter referred to as the proposed rule) will result in regulation of air emissions from new minor sources, minor modifications to existing major sources, and sources accepting emissions limitations to become synthetic minor sources. In addition, the proposed rule establishes nonattainment New Source Review for major sources and major modifications to minor sources in Indian Country. To analyze the impacts of the proposed rule, EPA will compare projected conditions with the rule in place to projected baseline conditions (projected conditions without the proposed rule). The proposed rule will not affect existing operations, only new or modified operations. This section provides a profile of the baseline conditions in each quadrant and describes the underlying assumptions and computations that were made in support of the analysis.

2.1 Data Availability and Uncertainties

A first step in analyzing the impacts of the proposed rule is characterizing the baseline conditions in the absence of the rule. Characterizing the baseline requires collecting data on current conditions in Indian Country and using those data to project conditions after the rule is promulgated (2004 through 2010). Data needed include per capita income and population of Indian Country, types and numbers of minor and major sources existing today in Indian Country, and projected numbers of new sources that would be created in Indian Country in the absence of the proposed rule.

2.1.1 Demographic Data Sources

To characterize baseline conditions, EPA needed demographic data on Tribes. However, consistent and reliable income and population data for Tribal entities were not available from the Tribes themselves. Therefore, the Census of Population and Housing (2000) was selected as the primary source of demographic data for this analysis. Census reports data for American Indian Areas (AIAs), which are geographic units that include federal American Indian reservations and off-reservation trust land, Oklahoma tribal statistical areas, and Tribal-designated statistical areas. These data represent all inhabitants of the AIA, Tribal members and nonmembers alike. For the analysis, it was deemed

appropriate to include all those residing on AIAs (rather than the subset of American Indians) to best capture the overall level of economic activity on the AIA. In limited instances, incomplete census data were supplemented with information from the publication "American Indian reservations and Indian Trust Areas" (U.S. Department of Commerce, 1996) also known as the "Tiller's Guide." This source provides brief profiles of each Indian Reservation in the United States, including demographic data, tribal land holdings, culture, economic infrastructure, and business enterprises. Because of inconsistent coverage for various data elements, this source was not selected as the primary source of demographic data for the analysis.

Although there is generally a one-to-one correspondence between Tribal entity and the Census data, several Tribes inhabit multiple parcels of land. In these instances, the Census reports data for each AIA independently. Thus, although there are currently 328 federally recognized tribes in the United States (excluding Alaska and Hawaii), the Census provides data for the 351 geographic areas that are considered AIAs. For the purposes of this analysis, data were analyzed for each of the distinct AIAs.

2.1.2 Economic Data Sources

Data on existing number of major sources in Indian Country were available from the EPA database of existing sources with Title V permits. Currently, 83 major sources are reported in Indian Country, of which eight are located in nonattainment areas. To determine the number of existing minor sources in Indian Country, EPA examined several potential sources of data, including

- EPA and other government databases, such as Toxic Release Inventory (TRI) and NET;
- information from EPA regional offices: even regions that have inventories (Regions 8 and 10) do not have complete listings of minor sources;
- Small Business Administration (SBA): EPA searched its database for businesses listed as Native American-owned, and cross-referenced zip codes to see if zip codes matched Tribal zip codes; if it matched, we assumed that the business was located on Tribal land. The limitations of this approach are as follows: (1) small businesses are not required to submit data to the SBA; therefore, the database is incomplete; (2) zip code boundaries do not coincide with Tribal land boundaries, so even if the zip codes match, the business may or may not be located on Tribal land; and (3) we have very limited information on what the businesses are or what they do; and
- existing EPA/OAQPS inventories for 11 tribes.

As RTI explored the EPA databases for minor sources, it became evident that, because minor sources are not currently regulated, data on minor sources are not routinely collected. National databases have only very limited information about minor sources in Indian Country. There are 11 completed tribal inventories that the Tribes and regions believe to be reliable. In addition, EPA Region 10 has information about some minor sources in its Tribal database. However, the database does not include a complete inventory of minor sources; for example, it does not list any gas stations or body shops. Region 8 also has a Tribal database, but it includes all businesses within a 5-mile radius of Indian Country; therefore, we cannot be sure whether the sources listed are in Indian Country. After evaluating the available sources of information, EPA concluded that the best characterization of types of existing minor sources was the data in the Tribal inventories for 11 tribes. In the absence of Tribe-specific data, these sources are the most reliable and consistent information available.

2.1.3 Projection Data Sources

To project the number of new minor and major sources in Indian Country between 2004 and 2010, EPA examined several potential growth rates. These included American Indian/Alaskan Native (AI/AN) population growth rates, total state population growth rates, and industry-based growth rates. It was determined that state-level AI/AN population growth rates were the appropriate variable to use because they best reflect the special conditions in Indian Country and are most likely to estimate the number of affected new minor and major sources over this time period.

2.2 Definition of Quadrants

Insufficient data at the Tribal level presented considerable obstacles to performing a Tribe-specific analysis for the proposed rule. Therefore, EPA relied on a limited yet consistent set of alternative data sources, although this increased the uncertainty of the analysis. Because of these uncertainties, projections could not be reliably made for individual AIAs; instead, results are presented at the multistate quadrant level. These quadrants are defined as East, East Central, West Central, and West.

Determining the quadrant boundaries was a multistage process in which several factors and various geographic configurations were proposed. Originally, state or EPA regional boundaries were suggested. However, state or EPA regional boundaries were considered undesirable because applying federal government designations to Tribal analysis

is potentially sensitive. Additionally, numerous tribes cross state and EPA regional borders, complicating the analysis. As a result, it was determined that larger, multistate quadrants should be constructed. The current quadrant configuration facilitates analysis in several ways. The existing boundaries minimize the occurrence of multiquadrant tribes. Also, the quadrants are reasonably uniform in terms of their resource endowments, economic activity, and potential existing minor sources. For example, saw mills and other logging-related sources are primarily in the West Quadrant, and natural gas compressor stations are primarily located in the West Central region. Figure 2-1 presents the multistate quadrants and AIAs contained within each.

Despite these considerations, several Tribes' lands cross quadrant boundaries. For Tribes with the vast majority of population and economic activity in one quadrant, the Tribe was assigned to that quadrant. Four Tribes have significant population and economic activity in more than one quadrant.[1] Their data were distributed proportionally to the quadrants in which their lands are located. Appendix A provides a list of the states and AIAs in each quadrant, including those four AIAs that cross quadrant boundaries.

2.2.1 Baseline Conditions in East Quadrant

Of the four quadrants, the East Quadrant has the smallest number of tribes: 30 (see Table 2-1). These tribes are located across eight states, with New York and Florida each having nine tribes. Together, these two states contain 60 percent of the federally recognized AIAs in the East Quadrant. Maine is home to six tribes, or 20 percent of the quadrant's total. There are two tribes in Connecticut and Massachusetts; North Carolina, Rhode Island, and South Carolina each have one Tribal area. Figure 2-2 shows the boundaries of the East Quadrant and the location of individual AIAs.

Table 2-2 provides the socioeconomic conditions of the tribes in the East Quadrant vary considerably. Summary statistics for per capita income (PCI) of Tribes in the East Quadrant. The average PCI for Tribes in the quadrant is $11,959. The highest PCI for a tribe in the quadrant is $40,667, while the lowest is $0. In fact, the average PCI of the poorest 10 percent of AIAs in the East Quadrant is $0, while the average PCI for the wealthiest 10 percent of AIAs in the quadrant is $31,462.

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[1]These tribes are the Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California; Fort Mojave Indian Tribe of Arizona, California and Nevada; Quechan Tribe of the Fort Yuma Indian Reservation, Arizona and California; and Confederated Tribes of the Goshute Reservation, Nevada and Utah.

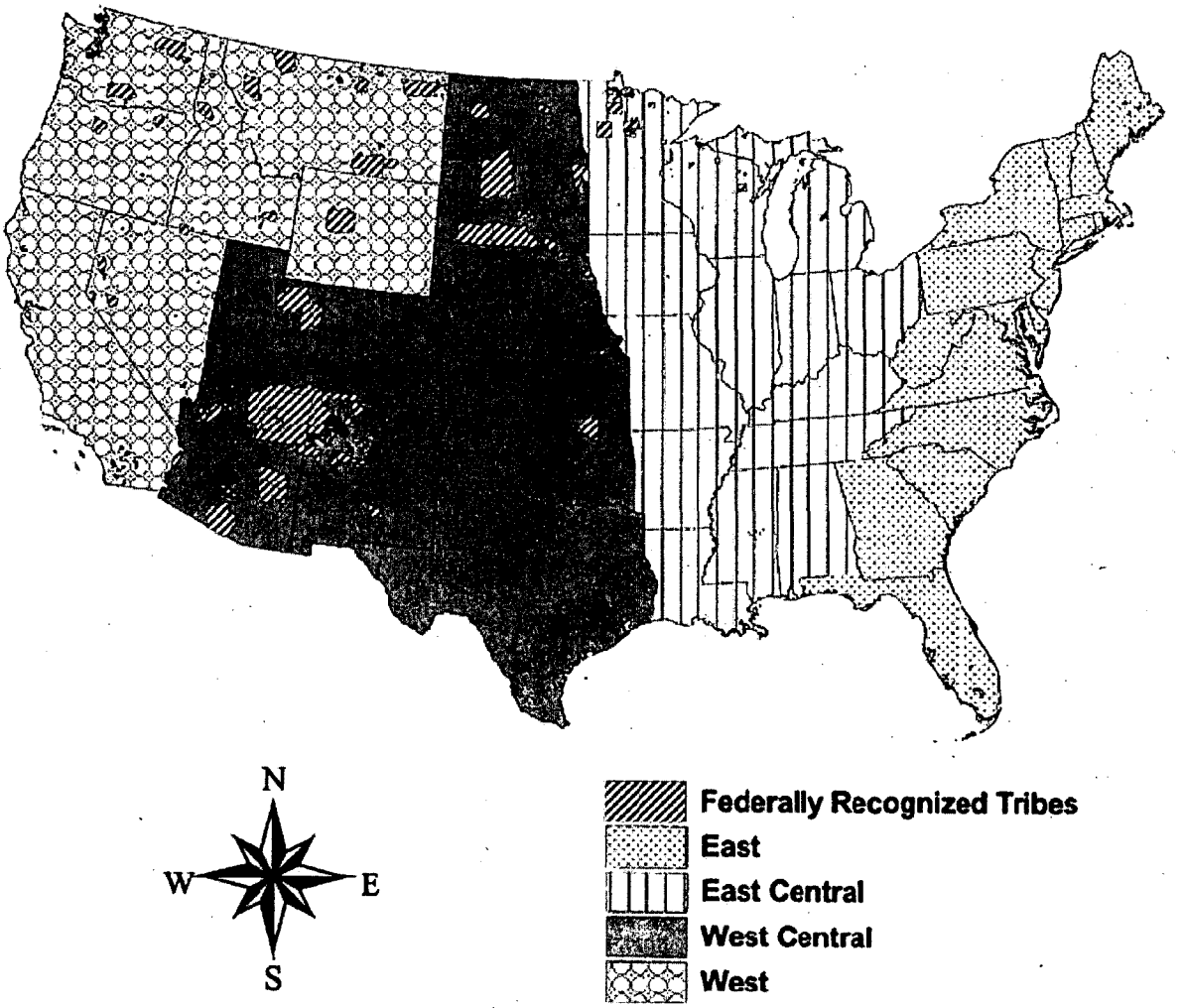

Figure 2-1. Geographic Quadrants Used in the Analysis

In terms of population, the East is the smallest of the four quadrants. As shown in Table 2-3, approximately 49,000 people live in the AIAs of the East Quadrant. Cayuga Nation in New York has the largest population in the quadrant, with 10,706 people. The average population of the largest 10 percent of AIAs in the quadrant is 9,313. Five AIAs, three in Florida and two in Maine, report populations of zero according to the U.S. Census.

Table 2-1. Tribal Geographic Distribution: East Quadrant

State	Number of Tribal Geographic Areas
Connecticut	2
Florida	9
Massachusetts	1
Maine	6
North Carolina	1
New York	9
Rhode Island	1
South Carolina	1
Total	30

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

Economic activity in the East Quadrant is mixed. The Mashantucket Pequot Tribe of Connecticut runs the Foxwoods Casino, a very large and lucrative resort. Tourism and outdoor recreation are important sources of revenue for other tribes, such as the Wampanoag Tribe of Tribe. Primary crops include bell peppers, strawberries, and lemon and grapefruit groves (U.S. Department of Commerce, 1996). Development of gaming facilities in Indian Country in the quadrant has facilitated other business growth, such as smokeshops, gas stations, and other small businesses that cater to tourists.

2.2.2 Baseline Conditions in East Central Quadrant

The East Central Quadrant includes Tribes in Alabama, Iowa, Louisiana, Michigan, Minnesota, Mississippi, and Wisconsin. Figure 2-3 shows the boundaries of the East Central Quadrant and the location of the AIAs within it. Major geographic features in the region include the Great Lakes, the Mississippi River, and the Missouri River. The East Central Quadrant contains 44 AIAs. Eighty-four percent are concentrated in three states: Michigan, Minnesota, and Wisconsin. Michigan and Wisconsin each contain 12 AIAs, and Minnesota has 13. Louisiana has four AIAs, and Alabama, Iowa, and Mississippi have one each. Table 2-4 provides the distribution of AIAs among states in the quadrant.

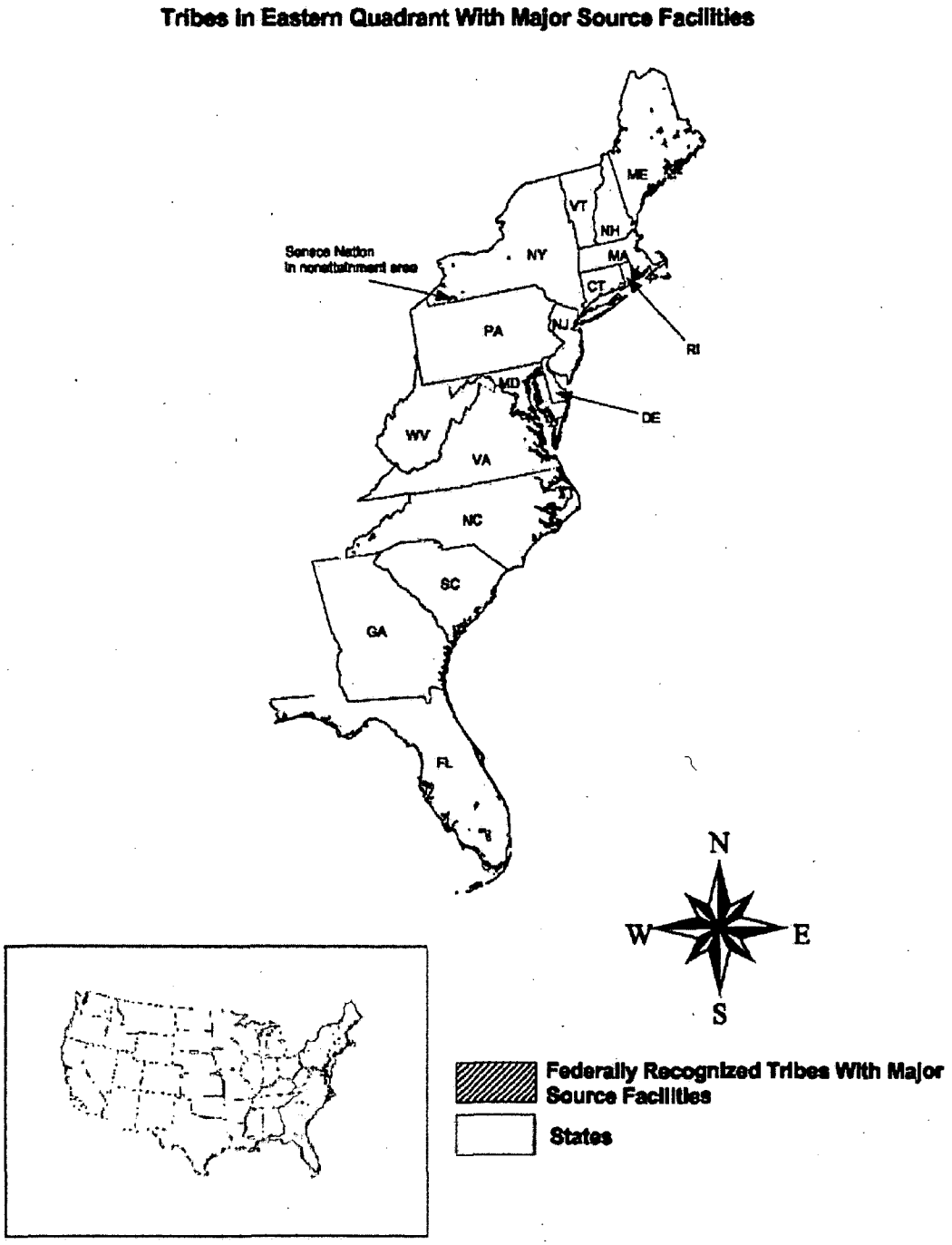

Figure 2-2. States and Tribes of the East Quadrant

Table 2-2. Summary Statistics on Tribal Socioeconomic Status: East Quadrant ($1999)

Average per capita income	$11,959
Maximum per capita income	$40,667
Per capita income of wealthiest 10% of Tribes	$31,462
Minimum per capita income	$0
Per capita income of poorest 10% of Tribes	$0

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

Table 2-3. Summary Statistics on Tribal Populations: East Quadrant

Total population, all AIAs	49,310
Average population, per AIA	1,644
Maximum AIA population	10,706
Minimum AIA population	0
Population of largest 10% of Tribes	9,313
Population of smallest 10% of Tribes	0

Note: AIAs = American Indian Areas.

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

There are large disparities in the reported socioeconomic status among Tribes in the East Central Quadrant. Table 2-5 shows the summary statistics for PCI of AIAs in the quadrant. The average PCI for people in Indian Country in the quadrant is $14,298. One Tribe in the quadrant has an extremely high level of income. The Shakopee Mdewakanton Sioux Community of Minnesota (Prior Lake) has an average PCI of $84,517. The average PCI of the wealthiest 10 percent of AIAs is $37,782, while the average PCI of the poorest 10 percent of AIAs is $2,627. Two AIAs in the quadrant are reported to have a PCI of $0.

The total population in Indian Country in the East Central Quadrant is 207,530. Table 2-6 provides a summary of the population statistics for the quadrant. In terms of population, the Jena Band of Choctaw Indians in Louisiana is the largest AIA in the quadrant, with 59,992 residents. The average population of the top decile in the quadrant is 30,521, while the smallest 10 percent of AIAs have an average population of 41. Two AIAs report zero population.

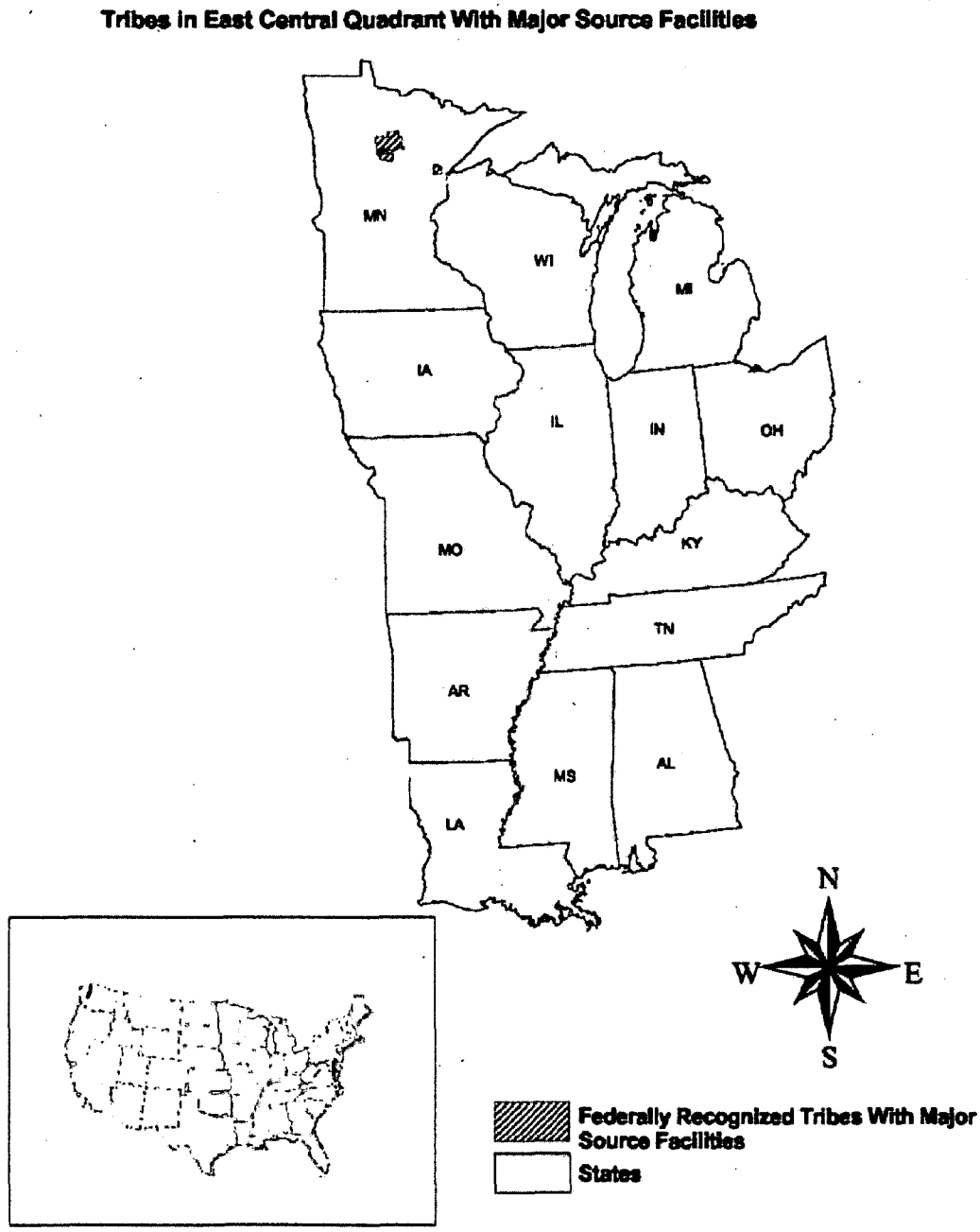

Figure 2-3. States and Tribes of the East Central Quadrant

Table 2-4. Tribal Geographic Distribution: East Central Quadrant

State	Number of Tribal Geographic Areas
Alabama	1
Iowa	1
Louisiana	4
Michigan	12
Minnesota	13
Mississippi	1
Wisconsin	12
Total	44

Note: Certain AIAs cross state boundaries. In order to avoid double counting in these instances, tribes were assigned to only one state based on land area distribution or population distribution

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

Table 2-5. Summary Statistics on Tribal Socioeconomic Status: East Central Quadrant ($1999)

Average per capita income	$14,928
Maximum per capita income	$84,517
Per capita income of wealthiest 10% of Tribes	$37,782
Minimum per capita income	$0
Per capita income of poorest 10% of Tribes	$2,627

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

Table 2-6. Summary Statistics on Tribal Populations: East Central Quadrant

Total population, all AIAs	207,530
Average population, per AIA	4,826
Maximum AIA population	59,992
Minimum AIA population	0
Population of largest 10% of Tribes	30,521
Population of smallest 10% of Tribes	41

Note: AIA = American Indian Area.

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

The AIAs in the East Central Quadrant have a diverse economy. For instance, the Iowa Tribe's economy is primarily agriculturally based. The Tribe owns and operates a farm and a dairy herd. The Tribally owned Winne Vegas Casino is by far the single largest source of employment for Tribal members on the Winnebago Reservation. On the Chitimacha Reservation in Louisiana, the Tribally affiliated Chitimacha Seafood Plant processes primarily crawfish and crab (U.S. Department of Commerce, 1996). Forestry is common in Indian Country in the Great Lakes region. Agriculture, tourism, gaming, and natural resource development are all important elements of economic activity for Indian Country in the quadrant.

2.2.3 Baseline Conditions in West Central Quadrant

Of the four quadrants, the West Central is home to the most AIAs. Many of the Tribes in the quadrant are extremely large. The quadrant includes AIAs in the Dakotas, Nebraska, Kansas, Oklahoma, Texas, Utah, Colorado, New Mexico, and Arizona. Figure 2-4 shows the boundaries of the quadrant and the location of AIAs within it. As the figure shows, there are large concentrations of Indian Country in New Mexico, Arizona, and South Dakota. Oklahoma has the largest number of AIAs, with 30 out of the 101 AIAs in the quadrant. New Mexico and Arizona follow with 23 and 20 distinct AIAs, respectively. Colorado, Kansas, North Dakota, Nebraska, South Dakota, Texas, and Utah all have fewer than 10 AIAs. Table 2-7 shows the distribution of AIAs by state in the quadrant.

Summary population statistics for the West Central Quadrant are given in Table 2-8. The total population of AIAs in the quadrant is 2,734,638, the largest of the four quadrants. Seven AIAs report populations over 100,000, the Creek Tribal area in Oklahoma being the largest with a population of 704,703. The average population of the largest 10 percent of Tribes in the quadrant is 232,895. The quadrant also includes a number of small AIAs. Four AIAs report a population of zero, and the average population of the smallest 10 percent of tribes is 95. The average population for AIAs in the quadrant is 27,346.

Like the other three quadrants, socioeconomic conditions in Indian Country in the quadrant vary widely. The West Central Quadrant has the lowest PCI of the four quadrants with an average of $11,048. Four AIAs (the same four reporting a population of zero) report a PCI of zero. Thirty-seven of the 101 AIAs in the quadrant have PCI less than $10,000. The average PCI of the poorest 10 percent of Tribes is $3,109. The Peoria Tribe of Indians

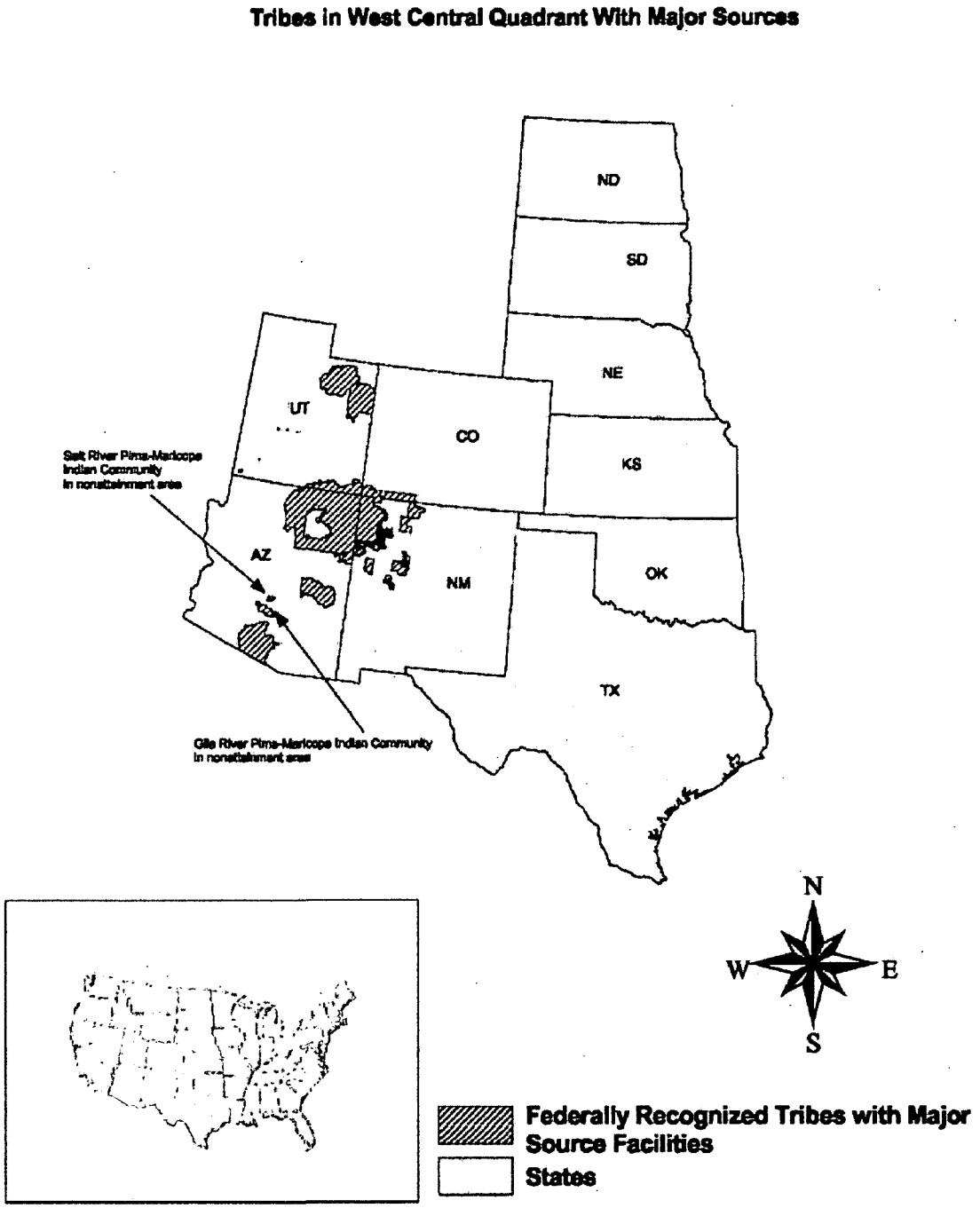

Figure 2-4. States and Tribes of the West Central Quadrant

Table 2-7. Tribal Geographic Distribution: West Central Quadrant

State	Number of Tribal Geographic Areas
Arizona	20
Colorado	2
Kansas	5
North Dakota	3
Nebraska	4
New Mexico	23
Oklahoma	30
South Dakota	7
Texas	3
Utah	4
Total	101

Note: Certain AIAs cross state boundaries. To avoid double-counting in these instances, Tribes were assigned to only one state based on land area distribution or population distribution.

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

Table 2-8. Summary Statistics on Tribal Populations: West Central Quadrant

Total population, all AIAs	2,734,638
Average population, per AIA	27,346
Maximum AIA population	704,703
Minimum AIA population	0
Population of largest 10% of Tribes	232,895
Population of smallest 10% of Tribes	95

Note: AIA = American Indian area.

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

of Oklahoma is the wealthiest Tribe in the quadrant with an average PCI of $20,614. The average PCI of the wealthiest 10 percent of Tribes in the quadrant is $18,177. Table 2-9 presents summary statistics for PCI in the West Central Quadrant.

Economic activity in the West Central Quadrant is diverse but more dependant on natural resources than in the other three quadrants. Important sources of income for AIAs in the quadrant include mining, tourism, gaming, and agriculture. Coal deposits are important

Table 2-9. Summary Statistics on Tribal Socioeconomic Status: West Central Quadrant ($1999)

Average per capita income	$11,048
Maximum per capita income	$20,614
Per capita income of wealthiest 10% of Tribes	$18,177
Minimum per capita income	$0
Per capita income of poorest 10% of Tribes	$3,109

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

to the Cheyenne River Sioux in South Dakota. Coal mining, plus oil and natural gas activities, generate royalties for the Navajo government. The Isleta Pueblo in New Mexico operates the Isleta Gaming Palace, one of the largest casinos in New Mexico. Livestock production, forestry, mining, gaming, and manufacturing are all important components of the diverse economy of the Cherokee Nation in Oklahoma (U.S. Department of Commerce, 1996). Many of the Tribes in this quadrant have very large land bases and consequently, depend on the land for income opportunity. Tourist development for recreation and gaming has encouraged the growth of many small businesses providing services in Indian Country in the West Central Quadrant.

2.2.4 Baseline Conditions in West Quadrant

The West Quadrant contains approximately half of all federally recognized AIAs in the United States. Figure 2-5 depicts the geographic boundaries of this quadrant and identifies the location of AIAs. Over 50 percent of all AIAs are located in California, while Nevada and Washington each contain approximately 15 percent. The other four states in this quadrant contain the remaining 15 percent of AIAs (see Table 2-10). The West Quadrant, California in particular, is unique from other parts of the country in that it contains a large number of rancherias and colonias, which are small parcels of land with limited populations.

There is a large degree of diversity among the AIAs in the West Quadrant, in terms of population size and socioeconomic status. Tables 2-11 and 2-12 provide summary descriptive statistics of the AIAs. As indicated by Table 2-11, the average population of AIAs is approximately 2,000, although there is a wide variation. Population size ranges from a maximum of 41,400 residents on the Puyallup Reservation in Washington to a minimum of zero reported for several AIAs in California. The largest 10 percent of Tribes have an

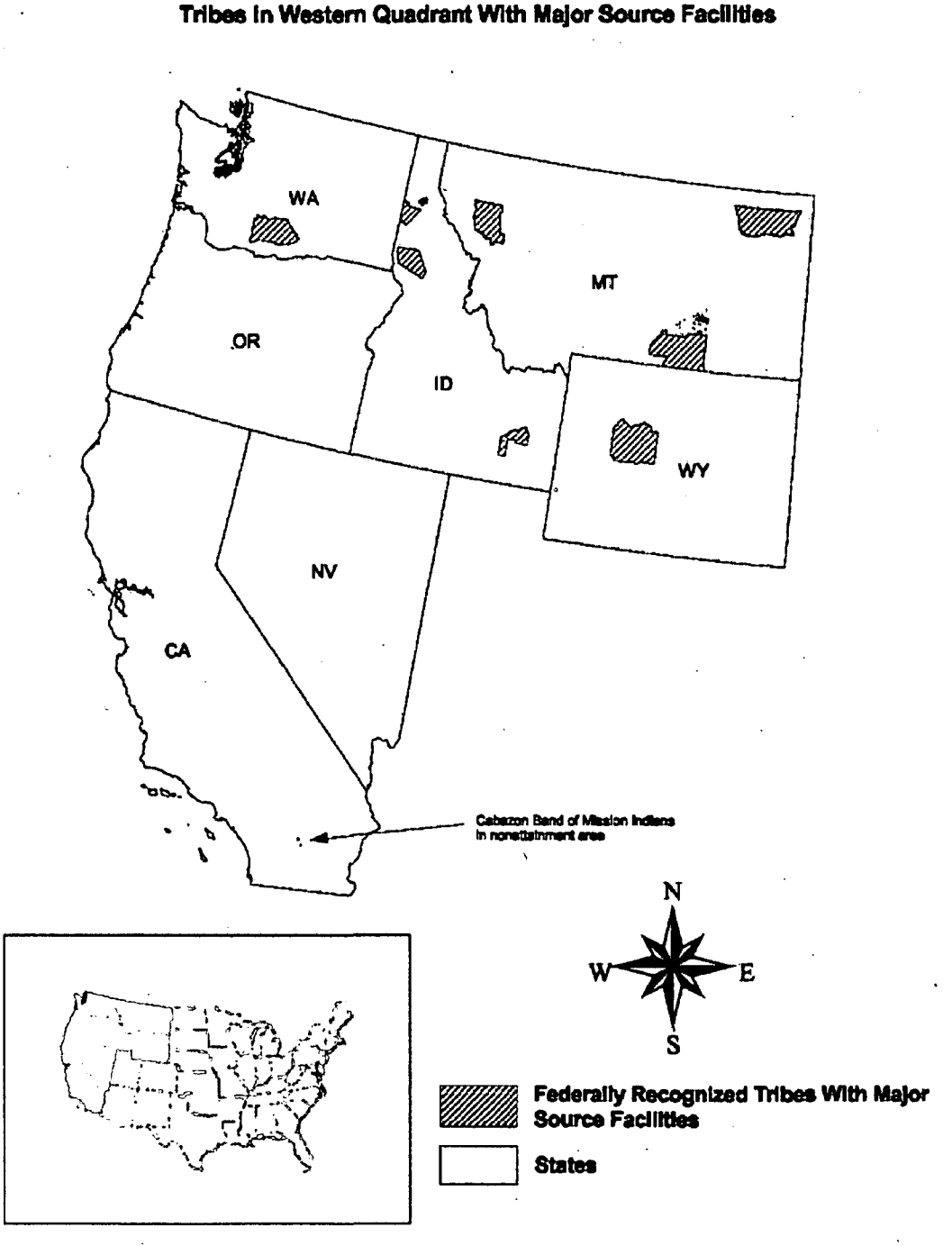

Figure 2-5. States and Tribes of the West Quadrant

Table 2-10. Tribal Geographic Distribution: West Quadrant

State	Number of Tribal Geographic Areas
California	100
Idaho	4
Montana	8
Nevada	25
Oregon	10
Washington	27
Wyoming	2
Total	176

Note: Certain AIAs cross state boundaries. To avoid double-counting in these instances, Tribes were assigned to only one state based on land area distribution or population distribution.

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

Table 2-11. Summary Statistics on Tribal Populations: West Quadrant

Total population, all AIAs	365,129
Average population, per AIA	2,075
Maximum AIA population	41,402
Minimum AIA population	0
Population of largest 10% of Tribes	16,256
Population of smallest 10% of Tribes	3

Note: AIA = American Indian Area.

Source: U.S. Department of Commerce, Bureau of the Census. 2000. *Census of Population and Housing.* Washington, DC: U.S. Department of Commerce.

Table 2-12. Summary Statistics on Tribal Socioeconomic Status: West Quadrant

Average per capita income	$11,899
Maximum per capita income	$146,000
Per capita income of wealthiest 10% of tribes	$33,863
Minimum per capita income	$0
Per capita income of poorest 10% of tribes	$1,212

Note: All figures in $1999.

Source: U.S. Census. 2000.

average population of nearly 16,200 people. These Tribes are geographically dispersed throughout the West Quadrant. The smallest Tribal populations are concentrated in California, which reflects the large number of rancherias that exist in the state. The West Quadrant contains over 10 percent of the total population on AIAs across the United States. The average population in Indian Country in this quadrant is less than one-quarter of the national average.

The diversity that exists between AIAs is also apparent in socioeconomic well-being. Table 2-12 provides summary statistics of individual income on AIAs in the West Quadrant. The average PCI is approximately $11,900, although there is significant variation in this figure.[2] The maximum PCI is $146,000 at the Table Mountain Rancheria in California, while the average PCI among the wealthiest 10 percent of Tribes is $33,863. Among the poorest decile, the average PCI is $1,212. This figure includes several AIAs that report zero dollars in PCI. The average PCI in the West Quadrant is within 1 percent of the national average in Indian Country.

The level of economic activity in Indian Country varies substantially within states and across the quadrant. Access to natural resources has encouraged some of the larger Tribes in California, Oregon, and Washington to invest in resource extraction. This includes small-scale logging and milling operations as well as sand and gravel mining and processing. Such endeavors have facilitated the establishment of related businesses such as construction. Some Tribes have elected to develop tourist-oriented economies that center around gaming or recreational opportunities. The proliferation of high-stakes casinos, bingo parlors, resorts, and conference facilities reflects this trend. Such development supports additional businesses including grocery stores, gas stations, and smokeshops that are associated with tourism. Although some Tribes have undertaken extensive economic development as a means of attracting outside visitors and enhancing their economic opportunities, this pattern has not occurred uniformly across all AIAs. The vast majority of Tribes continue to be small, relatively independent economies that rely primarily on agriculture and small-scale recreation activities for revenue.

2.3 Baseline Conditions for Affected Minor Source Industries

The following sections provide an analysis of the industries potentially affected under the proposed rule. Included is an identification of the affected industries, an estimation of

[2]PCI is measured in $1999.

existing facilities in Indian Country, and an estimation of the baseline number of new sources in Indian Country. The analysis of the existing and projected number of new minor sources is presented first, followed by the analysis of major sources.

2.3.1 Identification of Affected Industries

The first task in the analysis involved identifying and characterizing the existing minor sources subject to the proposed rule. Thus, EPA looked for all available data on minor sources in Indian Country and baseline economic conditions for each Tribe in the United States, excluding Alaska and Hawaii. This procedure is described in detail in Section 2.1.2. EPA concluded that the best characterization of types of existing minor sources was the data in the Tribal inventories for eight tribes. The small number of Tribal inventories creates uncertainty regarding the representativeness of these data. Aside from the inventories, EPA has little Tribe-specific information about economic activity in Indian Country to use in estimating the number of minor sources associated with other Tribes. Nevertheless, EPA must estimate the total number of minor sources in Indian Country nationwide to use as a basis for projecting the number of new minor sources in Indian Country. In the absence of Tribal data, EPA used data from the 2000 Census of Population and the 1997 Economic Census to estimate these numbers. Resulting estimates of the number of existing minor sources at the Tribal level are uncertain. Thus, EPA has conducted the analysis at a more aggregated level and reports the results of its analysis for large multistate regions.

Using the data from the inventories, augmented by information from EPA regions, EPA identified 12 existing industries containing minor sources most likely to be affected by the rule:

- dry cleaners;
- gasoline bulk plant;
- gasoline station storage tanks;
- gasoline station refueling;
- industrial, commercial, and institutional boiler, natural gas;
- industrial, commercial, and institutional boiler, oil fired;
- natural gas compressor station;
- asphalt hot mix plant;
- concrete batching plant;

- sand and gravel processing;
- stone quarrying and processing;
- grain elevator;
- solid waste landfill;
- lumber sawmill;
- automobile refinishing shop;
- surface coating operations; and
- printing operations.

2.3.2 Estimation of Existing Facilities in Indian Country

To estimate the number of existing minor sources in Indian Country, EPA first mapped the 15 source categories to an industrial sector using the North American Industrial Classification System (NAICS) codes (see Table 2-13). Next, we collected establishment data for each sector and state from the most recent version of the U.S. Census Bureau's Economic Census (1997). For the remaining two source categories (industrial boilers), we collected data from EPA's database of Commercial and Industrial Boilers (ICCR Database, 1997). These data provided information on the number of existing sources in each category in each state in 1997, based on the assumption that each establishment represents one minor source.

The next step in the process is to estimate what share of existing minor sources in each state are located in Indian Country. EPA has very limited Tribe-specific data, including data about economic activities in Indian Country in each state. In the absence of Tribe-specific data, EPA used Census information on PCI for Tribal geographic areas within each state and the state as a whole to estimate the share of economic activity in each sector that occurs in Indian Country within the state. EPA collected data on PCI for residents of Tribal land in each state and for the state as a whole. Because income is closely associated with levels of economic activity, EPA believes that the allocation of existing minor sources based on Tribes' share of state income is probably an accurate estimate of the number of existing minor sources in each economic sector in Indian Country. Therefore, EPA then created a scaling ratio for each state that compared income of Indian Country residents to income of state residents. To compute income, EPA multiplied PCI times population. Thus, Tribal income in state j is the product of income per capita (Y_i/P_i) times Tribal population:

Table 2-13. Industries Expected to be Affected by the Proposed Rule: NAICS Codes for Minor Source Types Identified from Tribal Inventories

SIC	NAICS	Description
1422	212312	Stone quarrying and processing
1423	212313	Stone quarrying and processing
1442	212321	Sand and gravel processing
2295	31332	Surface coating operations
2396	323113	Surface coating operations
2421	321113	Lumber saw mill
2752	323110	Printing operation
2951	324121	Asphalt hot mix plant
3411	332431	Surface coating operations
3479	332812	Surface coating operations
4922	486210	Natural gas compressor
4953	562212	Solid waste landfill
5032	421320	Concrete batching plant
5153	422510	Grain elevator
5171	422710	Gasoline bulk pant
5541	4471	Gasoline station storage tanks and refueling
7216	812320	Dry cleaner
7532	811121	Automobile refinishing shop
—		Boilers (natural gas)
—		Boilers (oil)

$$Y_i = (Y_i/P_i)^* P_i \quad (2.1)$$

For each industry in each state, we calculated the number of establishments on Tribal land ($N_{i,j}$) within state j by assuming the number was proportional to the share of state income (Y_j) that was in Indian Country: (Y_i). In Eq. (2.2), the number of establishments in a sector on Tribal land in state j is the product of the Tribes' share of the state's income times the number of sources in the sector in the state.

$$N_{i,j} = \frac{P_i}{P_j} \cdot N_j \quad (2.2)$$

The individual estimates of existing minor sources in Indian Country in each state were then aggregated to larger multistate levels. The results of the computations are shown in Table 2-14. Using this method, EPA estimates that 3,169 existing minor sources are located in Indian Country. The West Central Quadrant is estimated to have the largest number of existing sources, approximately 86 percent of the total number of estimated minor sources in Indian Country. The West and East Central Quadrants have 8 percent and 5 percent, respectively, of existing minor sources. Industries with a relatively large share of sources include gas stations (57 percent), dry cleaning (8.2 percent), automobile body refinishing (12 percent), and printing operations (5 percent). Other sectors, such as Asphalt Hot Mix plants, are estimated to have fewer than 50 minor sources in Indian Country throughout the United States.

2.3.3 Estimation of Baseline Number of New Minor Sources in Indian Country

To project conditions in the absence of the proposed rule, EPA next needed to estimate how many new sources would be created during the period 2004 through 2010. To make this computation, EPA assumed that growth in new minor sources was proportional to the growth in AI/AN population, which is available from the Census of Population. For this analysis, we computed the rate of growth in state AI/AN population. The formula used for growth rates compounded over discrete time is

$$Y_t = Y_0 \bullet (1 + r)^t$$

where Y_t = value of the population variable in year t,

Y_0 = value of the variable in year 0,

r = computed growth rate based on population or output, and

t = year, from 0 through 13 (1997 through 2010).

EPA used this growth rate formula first to solve for the growth rate r embodied in the population projections. To compute the growth rates, EPA substituted year t's population for Y_t, the base year's population for Y_0, and solved for the growth rate, r between the base year and year t.

Table 2-14. Estimated Number of Existing Minor Sources in Indian Country: Estimated Number of Existing Sources, Allocated based on Tribal Share of State Income

	Allocation Based on Income				
Sector	East	East Central	West Central	West	Grand Total
Sand and gravel processing	0	2	28	3	33
Lumber saw mill	1	3	19	9	32
Printing operation (lithographic)	2	11	140	18	171
Asphalt hot mix plant	0	1	13	0	14
Natural gas compressor station	0	2	71	2	74
Solid waste landfill	0	1	18	2	21
Concrete batching plant	0	2	22	3	27
Grain elevator	0	4	112	12	129
Gasoline bulk plant	1	7	111	13	132
Gasoline station (storage tanks, refueling)	15	88	1,588	122	1,814
Dry cleaner	3	14	222	22	261
Automobile refinishing shop	4	23	311	40	377
Stone quarrying and processing	0	1	26	0	27
Surface coating operations	0	2	29	2	33
Industrial, commercial and institutional boiler: natural gas	0	12	12	0	24
Industrial, commercial and institutional boiler: oil-fired	0	0	0	0	1
Total Existing Sources	**28**	**172**	**2,721**	**248**	**3,169**

Then, EPA inserted the computed growth rates in the same formula to project the number of new minor sources. EPA inserted the base year estimate of existing minor sources in each industry as Y_0 in the formula, the computed growth rate r, and solved for Y_t, the projected number of new sources in the industry in year t. EPA used 1997 data for existing minor sources and projected the number of minor sources through the year 2010. Because the rule is expected to be promulgated in 2004, minor sources estimated to be created between 2004 and 2010 are considered new minor sources subject to the rule. The EPA projections are shown in Table 2-15.

Table 2-15. New Minor Sources Projected Based on Tribal Population Growth Rate

Sector	East	East Central	West Central	West	Grand Total
Sand and gravel processing	0	0	2	0	2
Lumber sawmill	0	0	2	1	3
Printing operation (lithographic)	0	1	12	2	15
Asphalt hot mix plant	0	0	1	0	1
Natural gas compressor station	0	0	6	0	6
Solid waste landfill	0	0	2	0	2
Concrete batching plant	0	0	2	0	2
Grain elevator	0	0	11	2	13
Gasoline bulk plant	0	0	10	3	13
Gasoline station (storage tanks, refueling)	1	7	139	20	167
Dry cleaner	0	1	19	2	22
Automobile refinishing shop	0	2	28	5	35
Stone quarrying and processing	0	0	2	0	2
Surface coating operations	0	0	3	0	3
Industrial, commercial, or institutional boiler: natural gas fired	0	1	1	0	2
Industrial, commercial, or institutional boiler: oil fired	0	0	0	0	0
Total	**1**	**12**	**240**	**35**	**288**

Table 2-15 projects a total of 288 new minor sources in Indian Country between 2004 and 2010. This is the projected number of new minor sources in the absence of the proposed rule. As the table illustrates, the majority of new minor sources (83 percent) are estimated to occur in the West Central Quadrant. The West and East Central Quadrants are estimated to account for small shares of the total number of new minor sources (12 percent and 4 percent, respectively). The East Quadrant is estimated to account for less than 1 percent of all new minor sources during this period. Industries with relatively large shares of sources include gasoline stations, automobile refinishing shops, and dry cleaners (58 percent, 12 percent, and

7.6 percent, respectively.) Because of a lack of Tribe-specific data, EPA believes that Table 2-15 is the most reasonable estimate of the number of affected new minor sources in Indian Country. Thus, these data will be the basis for the analysis of new minor sources.

2.3.4 Estimated Baseline Number of Minor Modifications to Existing Minor Sources

EPA has estimated that Indian Country includes 3,169 existing minor sources. To estimate the number of minor modifications to these sources subject to the proposed rule, EPA assumes that 10 percent of existing minor sources would choose to make changes to their facilities each year, a total of 317 facilities making changes. However, it is anticipated that of these minor source process/operational modifications only 5 percent will result in greater than *de minimus* emissions increases. This group (16 facilities per year) will be required to get a minor source NSR permit. As EPA noted in their memorandum on "New Source Review Year 2000 Adjustments," September 6, 2000, "...industry has been able to build major new plants or make physical and operational changes at major existing sources without exceeding the major source and major modification thresholds." The same situation holds for minor sources. Sources are expected to avoid the minor NSR thresholds for the same three reasons as EPA noted for major sources: (1) installation of state-of-the-art control technologies; (2) replacement or better control of old, more polluting processes, and (3) engaging in effective pollution prevention efforts. All of these actions result in significant reductions in air emissions beyond the baseline case. Therefore, EPA projects there will be 112 minor sources requiring permits as a result of minor modifications over the period 2004 through 2010. The distribution of these minor modifications across existing minor source types by quadrant is shown in Table 2-16. Of these minor source facilities undergoing a minor modification, it is estimated that half (8 per year or 56 total over the 7-year period) will incur control device costs.

2.4 Baseline Conditions for Major Source Industries

The proposed rule affects new major source facilities sited in nonattainment areas in Indian Country. In addition, it affects major modifications to existing major sources in nonattainment areas in Indian Country and minor modifications to major sources in Indian Country. To assess the impact of the proposed rule, EPA first characterized existing sources throughout Indian Country and in nonattainment areas in Indian Country. The following section identifies the location of existing major sources and presents an analysis of the projected number of new major sources, and modifications to existing major sources, between 2004 and 2010, in the absence of the proposed rule.

Table 2-16. Estimated Total Number of Minor Modifications to Existing Minor Sources in Indian Country

Sector	East	East Central	West Central	West	Grand Total
Sand and gravel processing	0	0	1	0	1
Lumber saw mill	0	0	1	0	1
Printing operation (lithographic)	0	0	5	1	6
Asphalt hot mix plant	0	0	0	0	0
Natural gas compressor station	0	0	3	0	3
Solid waste landfill	0	0	1	0	1
Concrete batching plant	0	0	1	0	1
Grain elevator	0	0	4	0	5
Gasoline bulk plant	0	0	4	0	5
Gasoline station (storage tanks, refueling)	1	3	56	4	64
Dry cleaner	0	0	8	1	9
Automobile refinishing shop	0	1	11	1	13
Stone quarrying and processing	0	0	1	0	1
Surface coating operations	0	0	1	0	1
Industrial, commercial, and institutional boiler: oil fired	0	0	0	0	0
Total Minor Modification to Existing Minor Sources	**1**	**6**	**96**	**9**	**112**

Note: Column total may not equal sum of row total due to rounding.

2.4.1 Identification of Existing Major Source Facilities in Indian Country

EPA identified 83 existing major source facilities located in Indian Country, of which eight (9.64 percent) are in nonattainment areas. Although only those new major source facilities sited in nonattainment areas will be affected by the proposed rule, we examined the entire list of existing facilities to characterize the types of major source facilities that might locate in nonattainment areas in Indian Country. Table 2-17 shows the distribution of existing major source facilities by type and geographic quadrant. The tables in Appendix B identify each major source facility, location, and corresponding NAICS and Standard Industrial Classification (SIC) code.

Table 2-17. Estimated Number of Existing Major Sources in Indian Country

Sector	East	East Central	West Central	West	Grand Total
Lumber manufacture support	0	0	0	1	1
Coal mining	0	0	1	0	1
Sand and gravel production	0	0	1	0	1
Furniture manufacture	1	0	0	0	1
Medical waste incinerator	0	0	1	0	1
Repellent and fertilizer applications	0	0	0	1	1
Natural gas plant	0	0	5	1	6
Oil and gas production	0	0	1	0	1
Fractionation of natural gas liquids	0	0	1	0	1
Copper mining and processing	0	0	1	0	1
Power plant (coal-fired)	0	0	3	0	3
Power plant (biomass-fired)	0	0	0	1	1
Power plant (natural gas-fired)	0	0	1	0	1
Natural gas pipeline and collection	0	0	3	0	3
Lumber sawmill	0	0	1	4	5
Window and door molding manufacturer	0	0	0	1	1
Elemental phosphorus plant	0	0	0	1	1
Sulfuric acid plant	0	0	0	1	1
Secondary aluminum production and extrusion	0	0	1	0	1
Cobalt and tungsten recycling	0	0	1	0	1
Crude oil storage and distribution	1	0	0	0	1
Natural gas compressor station	0	2	42	2	46
Landfill	0	0	3	0	3
Total Existing Sources	**2**	**2**	**66**	**13**	**83**

Natural gas compression stations comprise over half of the facilities currently recognized as major sources. Natural gas plants, sawmills, coal-fired power plants, and landfills comprise an additional 20 percent of all major sources. Each of the remaining major source categories is represented by two or fewer facilities. Figures 2-6 through 2-9 identify, by quadrant, the location of each of the major sources. Existing major sources are concentrated in the West Central Quadrant, which contains 80 percent of the total major sources. The West Quadrant has the second largest number of major sources (16 percent). The East and East Central Quadrants each contain less than 1 percent of the total existing major sources in Indian Country.

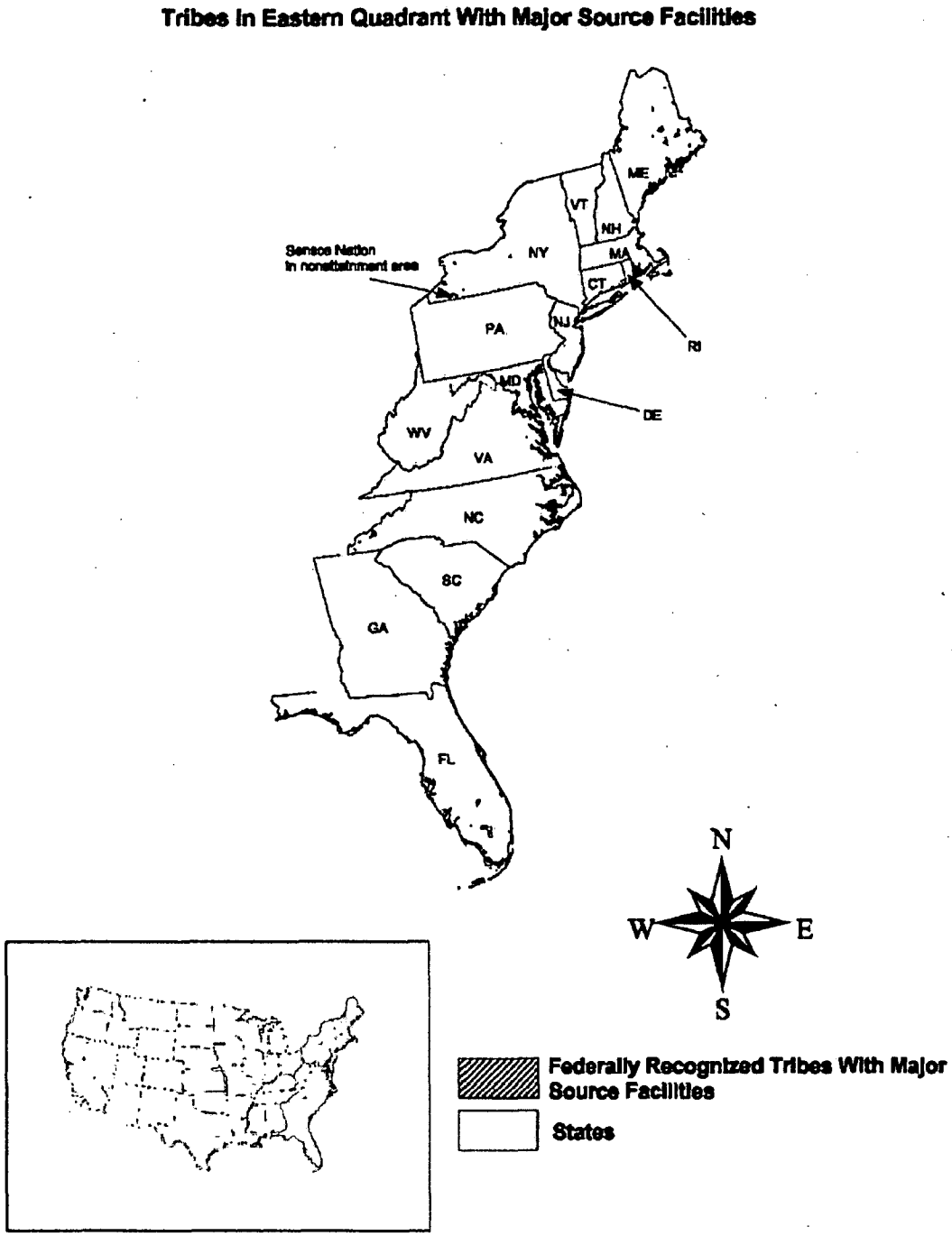

Figure 2-6. Tribes in Eastern Quadrant with Major Source Facilities

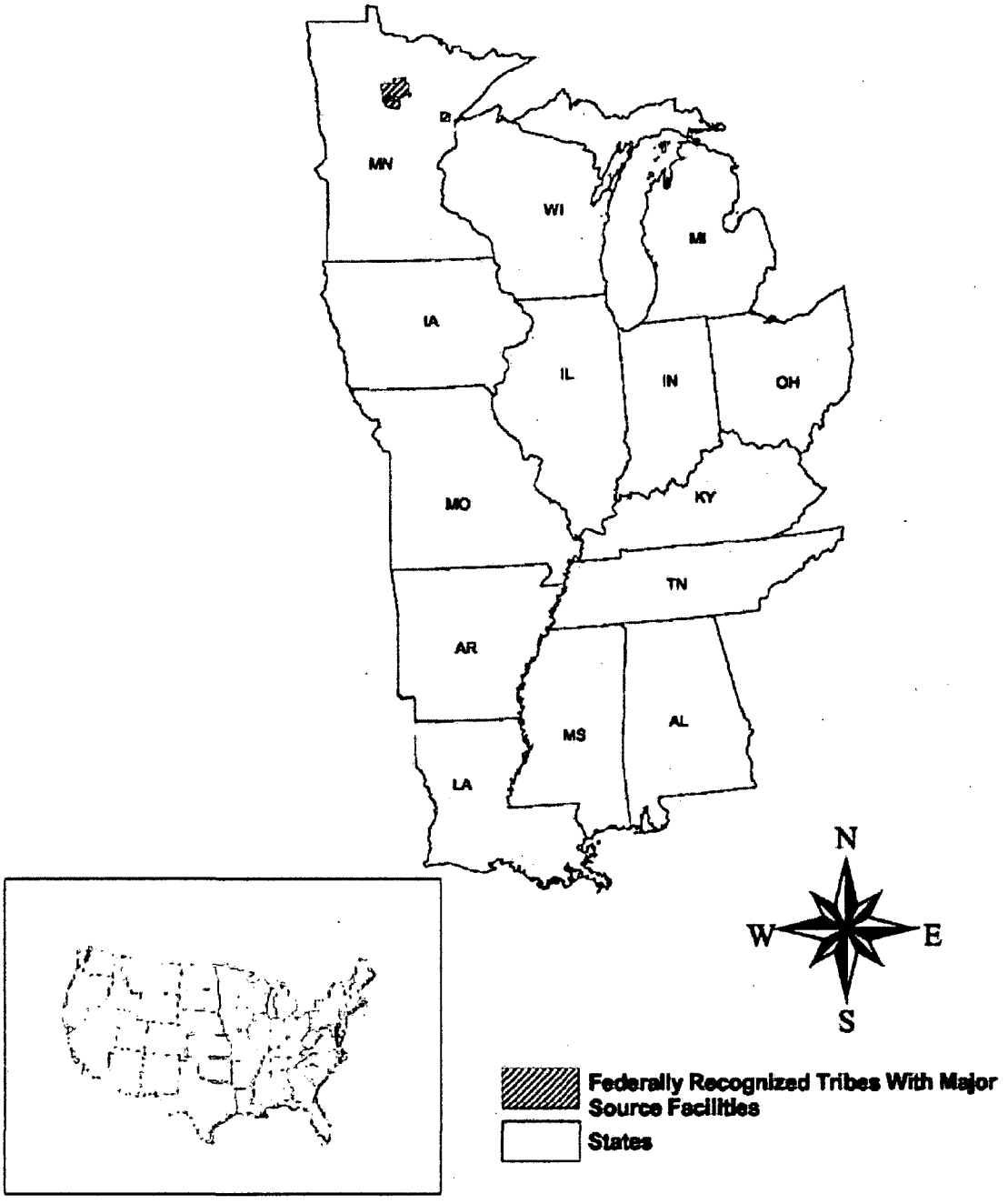

Figure 2-7. Tribes in East Central Quadrant with Major Source Facilities

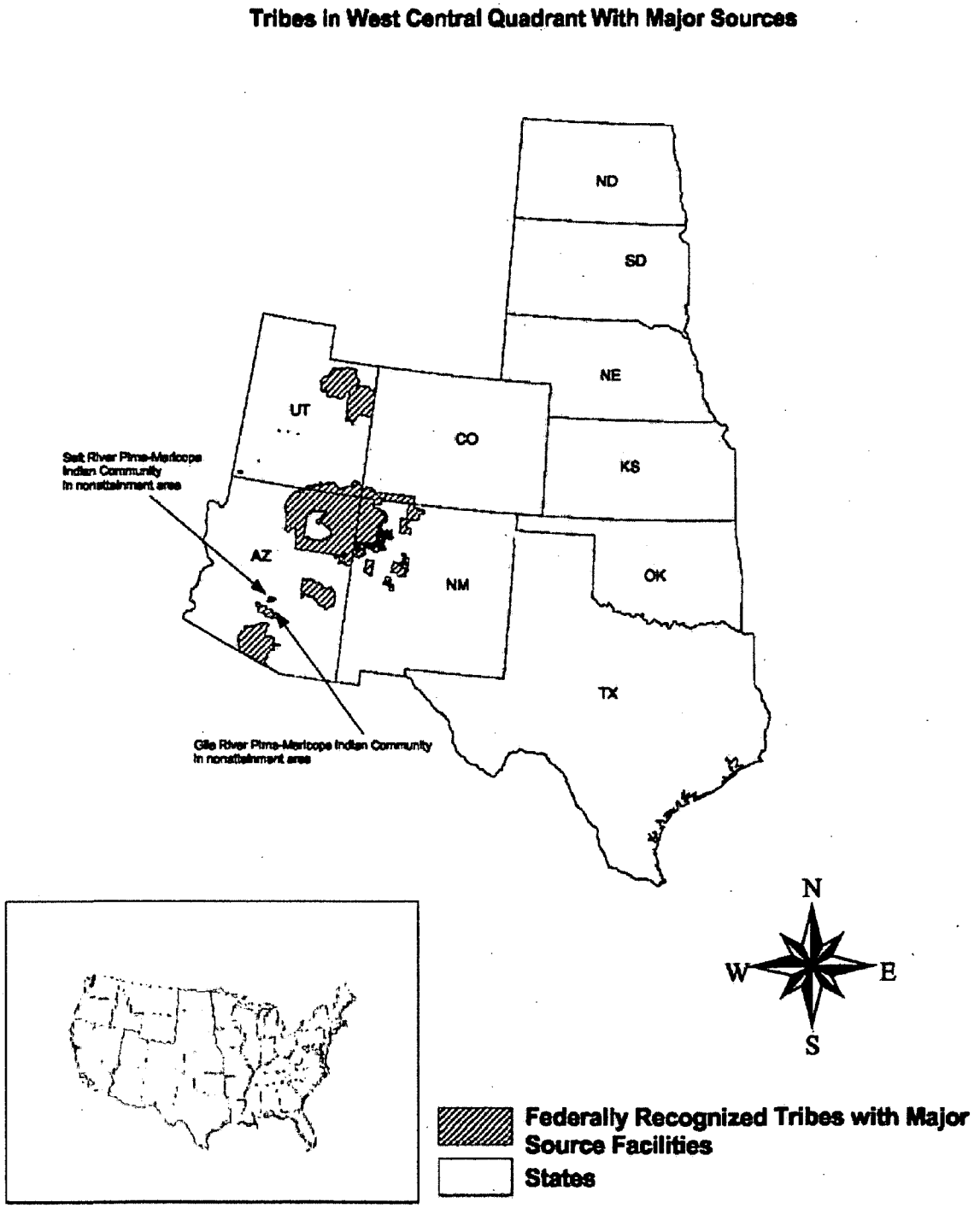

Figure 2-8. Tribes in West Central Quadrant with Major Sources

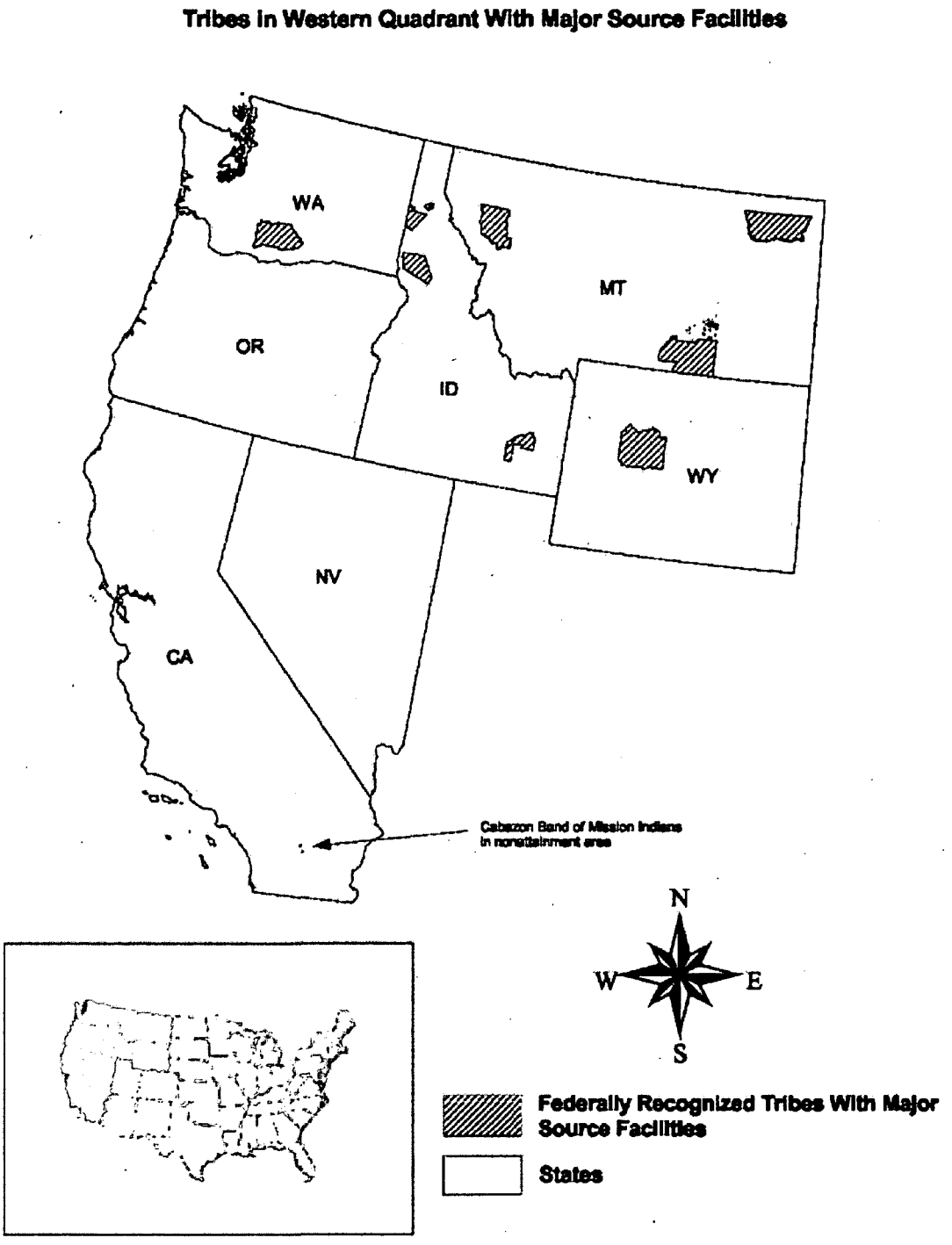

Figure 2-9. Tribes in Western Quadrant with Major Source Facilities

2.4.2 Characterization of Tribes with Major Sources in Nonattainment Areas

The eight existing major sources in nonattainment areas in Indian Country are located on four reservations. The eight sources and their location are shown below:

- Philadelphia furniture, Seneca Nation, Salamanca, NY
- Colmac Energy, Inc., Mecca Plan, Cabazon Band of Mission Indians, Mecca, CA
- Pimalco, Gila River Indian Community, Chandler, AZ
- Salt River Landfill; Salt River Pima-Maricopa Indian Community, Scottsdale, AZ
- Salt River Project; Salt River Pima-Maricopa Indian Community, Scottsdale, AZ
- Tri-Cities Landfill, Salt River Pima-Maricopa Indian Community, Scottsdale, AZ
- Salt River Project Landfill; Salt River Pima-Maricopa Indian Community, Scottsdale, AZ
- Salt River Sand and Rock; Salt River Pima-Maricopa Indian Community, Scottsdale, AZ

The Seneca Nation of Salamanca, New York, is among the largest Tribes in the Northeast. The Tribe is engaged in a number of economic activities including agriculture, forestry, mining, gaming, and tribal administration. Approximately 20 privately owned Seneca enterprises on the reservation sell motor fuel, cigarettes, food, and Indian crafts or are involved in professional services or vocational trades. In addition, the Tribe owns a number of recreational facilities that are open to the public. These businesses, as well as a large bingo facility, are critical sources of income for the Tribe.

The Cabazon Band of Mission Indians of Mecca, California, inhabits 1,706 acres of flat, dry land near Palm Springs. The Tribe has invested in limited agriculture and agribusiness, associated primarily with sesame crops. Many Tribal members are employed by local produce-packing plants in the nearby cities of Indio and Coachella. Gaming, industrial development, and tourism are the other major sectors of the Tribe's economy. The Cabazon Band of Mission Indians was the first of the Tribes to establish high-stakes bingo in California. In addition to its bingo hall, the Tribe also runs the Desert Oasis Casino. The reservation also hosts a grocery store and a bar and restaurant complex. As in many Tribal economies, the service industry represents an important source of individual income, and many Tribal members are employed in Palm Springs hotels. More recently, the Tribe has expanded its participation in the tourism and recreation sectors.

The Gila River Indian Community located in Chandler, Arizona, comprises approximately 372,000 acres of land that incorporates a diverse range of economic activities. The community maintains several industrial parks, considered to be among the most successful Indian industrial parks in the nation. In the future, the community plans to develop additional projects, including sports complexes, industry, office buildings, a cargo airport with related warehousing, and light industry. Agriculture continues to play an important economic role for the Gila River Reservation. Tourism is also a major part of the Tribe's economy, which includes museums, jewelry and pottery shops, restaurants, and a marina complex.

The Salt-River Pima-Maricopa Indian Community is located in south-central Arizona. Agriculture, tourism, gaming, mining, and the Tribal government are all significant employers of Tribal members. Twenty-three percent of the reservation comprises farmland in cultivation. The reservation includes several sand and gravel mining operations operated by the Tribal-owned Salt River Sand and Gravel Company. The Tribe has three different areas zoned for industrial purposes and several additional areas zoned for commercial use.

2.4.3 Estimation of Baseline Number of New Major Sources in Indian Country

To project conditions in the absence of the proposed Rule, EPA next needed to estimate how many new sources would be created during the period 2004 through 2010 throughout Indian Country. To make this computation, EPA assumed that growth in new major sources was proportional to the growth in AI/AN population. We computed the rate of growth in AI/AN population by the same method outlined in Section 2.3.3. The growth rate was then applied to the existing (baseline) number of facilities to project the total number of new major sources in Indian Country. EPA projected that 23 new major source facilities would be sited in Indian Country between 2004 and 2010. Because this proposed rule will only affect new major sources in nonattainment areas, the figure was scaled, based on the proportion (9.64 percent) of existing major sources in nonattainment areas. Based on this methodology, EPA projects one new major source will be created in a nonattainment area in Indian Country between 2004 and 2010. The majority of existing major sources are natural gas compressor stations, which do not typically occur in nonattainment areas. Thus, the projection of one new major source in a nonattainment area represents an upper-bound estimate.

As part of a sensitivity analysis, EPA also applied economic growth projections to estimate the number of new sources in the absence of the proposed MMNSR. Economic

sectors are projected to grow slightly faster than AI/AN population over the period, and this method resulted in a projection of 24 new major source facilities in Indian Country. Scaling by a factor of 9.64 percent to project the share of these facilities that would be located in nonattainment areas, the sensitivity analysis also resulted in a projection of one new major source facility in nonattainment areas in Indian Country during this period. Because of a lack of Tribe-specific data, EPA believes that applying AI/AN population growth rates is the acceptable method for estimating the number of affected new major sources in Indian Country.

2.4.4 Modifications to Existing Major Sources

The proposed Rule also affects major modifications to existing major sources in nonattainment areas in Indian Country and minor modifications to existing major sources throughout Indian Country. EPA estimates that at most one of the eight existing major sources in a nonattainment area in Indian Country will choose to make a major modification during the period 2004 through 2010. In addition, EPA projects one major facility per year (seven total during the period 2004 through 2010) will choose to make a minor modification. Table 2-18 shows the distribution of these minor modifications to existing major sources across industries and quadrants.

2.4.5 Synthetic Minor Sources

The minor NSR permitting rule will also sallow new and existing stationary sources in Indian Country to accept federally enforceable limits on their potential to emit any regulated air pollutant. These enforceable permit limits will enable sources to avoid regulation as new major stationary sources, and instead to be regulated under this proposed rule, and other applicable rules, as minor sources or minor modifications. Sources that voluntarily accept enforceable emission limits to avoid major NSR regulations are often referred to as "synthetic minor" sources. EPA believes that facilities could choose to do this to avoid Title V permitting or avoid being classified as a major source under the NSR or MACT (NESHAP) programs; thus, only the existing 83 major sources would be candidates. Because this action is completely optional, EPA believes a facility would only choose to do it if it resulted in cost savings. Thus, EPA estimates no costs for this type of affected source but instead expects them to incur a cost savings. EPA has not estimated the number of existing major stationary sources that would choose to become "synthetic minor" sources under the proposed rule.

Table 2-18. Estimated Total Number of Minor Modifications to Existing Minor Sources in Indian Country

Sector	East	East Central	West Central	West
Lumber manufacture support	0	0	0	0
Coal mining	0	0	0	0
Sand and gravel production	0	0	0	0
Furniture manufacture	0	0	0	0
Medical waste incinerator	0	0	0	0
Repellent and fertilizer applications	0	0	1	0
Oil and gas production	0	0	0	0
Fractionation of natural gas liquids	0	0	0	0
Copper mining and processing	0	0	0	0
Power plant (coal-fired)	0	0	0	0
Power plant (biomass-fired)	0	0	0	0
Power plant (natural gas-fired)	0	0	0	0
Natural gas pipeline and collection	0	0	0	0
Lumber saw mill	0	0	0	0
Window and door molding manufacturer	0	0	0	0
Elemental phosphorus plant	0	0	0	0
Sulfuric acid plant	0	0	0	0
Secondary aluminum production and extrusion	0	0	0	0
Cobalt and tungsten recycling	0	0	0	0
Crude oil storage and distribution	0	0	0	0
Natural gas compression station	0	0	4	0
Landfill	0	0	0	0
Total Minor Modification to Existing Minor Sources	**0**	**0**	**6**	**1**

Note: Column total may not equal sum of row total due to rounding.

2.5 Conclusion

This section provides a profile of the baseline conditions in each quadrant and describes the underlying assumptions and computations made in support of the analysis of the proposed Rule. Characterizing the baseline requires collecting data on current conditions in Indian Country and using those data to project conditions in the absence of the proposed rule. Because of a lack of Tribe-specific data, EPA relied on alternative data sources in its computations. This created uncertainty in the analysis. Quadrant-level reporting is designed to mitigate some of this uncertainty. An evaluation of baseline conditions indicates the tremendous diversity that exists among AIAs within and across quadrant boundaries. The West Central Quadrant accounts for a large majority of existing minor sources (86 percent). Estimates of projected new minor sources between 2004 and 2010 indicate a continuation of this trend, with the West Central region accounting for a similar proportion of the new minor sources over the projection period. The number of existing major sources in nonattainment areas is also concentrated in the West Central Quadrant (80 percent). One new major source and one major modification to an existing major source are projected in nonattainment areas in Indian Country between the period 2004 and 2010. Seven existing major sources throughout Indian Country are projected to perform minor modifications to their facilities during the period. In addition, 288 new minor source facilities are projected to be sited in Indian Country during the period, and 112 existing minor sources in Indian County are projected to perform minor modifications during the period. Section 3 describes the estimated costs and cost savings incurred by these sources as a result of the proposed rule.

SECTION 3
COST ANALYSIS

The proposed rule will address new minor sources of air pollution, modifications to existing minor sources, synthetic minor sources, minor modifications to existing major sources, new major sources in nonattainment areas and major modifications to existing major sources in nonattainment areas. Minor sources could be either new businesses or existing businesses that are making changes in equipment or operations that would result in small increases in emissions. Collectively, these may be a significant source of air quality problems in Indian Country. In this section the Agency estimates the costs and burdens that would typically result from implementation of the proposed rule.

Minor sources are not currently regulated and as a result, data for minor sources are not routinely collected. However, the Agency has identified those most likely to be affected using a data from existing inventories of minor sources on Indian Country for eight tribes (see Section 2.1.2). Source types identified are those considered to have the greatest potential to be new minor sources or make modifications to existing minor sources. The selection of source types was based on available tribal emission inventories and other information gathered from EPA regional contacts and other publicly available sources.

As shown in Table 2-6, EPA estimates that there will be 288 new minor sources on Indian Country between 2004 and 2010 in the absence of the proposed rule. In addition, the Agency estimates that there 3,169 existing minor sources in Indian Country. As shown in Table 2-16, the Agency expects that approximately 112 of these facilities will make minor modifications to their operations that will result in greater than *de minimus* emissions increases. Of these 112 minor sources requiring permits, it is estimated that half will incur control costs.

The proposed rule also has the potential to affect major sources in Indian Country. EPA estimates that there are currently a total of 83 major sources located throughout Indian Country, and 7 of these sources would choose to make minor modifications over the study period. In addition, EPA data show that there are eight existing major sources in nonattainment areas in Indian Country and EPA projects at most one major modification in a nonattainment area in Indian Country during the analysis period (i.e., 2004 - 2010). The Agency also expects that at most one new major source will locate in a nonattainment area in

Indian Country during the analysis period. As noted in Section 2.4, EPA does not anticipate synthetic minor sources, new major sources in nonattainment areas or existing major sources in nonattainment areas to incur costs as a result of the proposed rule.

This section describes the costs incurred by major and minor sources affected by the proposed rule and the costs borne by agencies charged with administering the proposed rule. Section 3.1 provides an overview describing the Agency's approach to estimating compliance costs for each source type. Section 3.2 presents a description of emissions and emission controls associated with the typical minor source types. This is followed by Section 3.3, which describes the control costs for new minor sources and modifications to existing minor sources. Section 3.4 presents the cost estimates for major sources. Section 3.5 presents a description of the administrative costs borne by the affected sources and by tribal agencies that choose to administer the proposed rule. Finally, Section 3.6 provides a summary of the cost estimates.

3.1 General Approach for Estimating Compliance Costs

EPA estimated compliance costs associated with new minor sources, modifications to existing minor sources and minor modifications to existing major sources. As noted above and in Section 2, EPA does not expect costs to result from the proposed rule for new major sources in nonattainment areas, major modifications to existing sources in nonattainment areas or synthetic minor sources.

Detailed emission inventories for minor sources were not available for each Tribe. Consequently, EPA decided that typical source types would be used to estimate costs for new minor sources and modifications to existing minor sources on a geographic basis. These would be the minor source types that are considered to have the greatest potential to make modifications or to be new minor sources located in Indian Country. Selection of these typical minor source types was based on available tribal emission inventories (i.e., in EPA Regions 8 and 10) and other information gathered from EPA Regional contacts and other publicly available sources (such as the various Tribal related websites).

After identifying the most common types of minor sources likely to be affected by the proposed rule, EPA developed an approach that estimates compliance costs for a typical new facility for each source category. Process throughput or operating capacities are needed to size and cost air pollution controls and to estimate emissions. These values are selected to reflect typical minor source sizes for the source category. In some cases they are based on a national average value; others are based on existing size categories where the lower end

values are selected to characterize minor sources; and in some cases, the values are based on information contained in the available tribal emission inventories. EPA uses this information to develop estimates of compliance costs for typical new facilities in each minor source category.

In addition to new minor sources, EPA expects some facilities to incur costs as a result of modifications to existing minor sources. The EPA estimates that there are 3,169 existing minor sources in Indian Country. Assuming that a minor source makes a modification every 10 years, each year there would be an estimated 317 facilities making modifications to their operations. However, it is anticipated that of these minor source process/operational modifications only 5 percent will result in greater than *de minimus* emissions increases. This group (16 facilities per year) will be required to get a minor source NSR permit. Of these minor source facilities undergoing a minor modification, it is estimated that half will incur control device costs.

There are currently a total of 83 major sources located throughout Indian Country, and a portion of these sources would choose to make minor modifications over the study period. EPA assumes that each major source does a process or operational modification every 10 years. However, it is anticipated that of these major source process/operational modifications only 10 percent will result in greater than *de minimus* emissions increases. This group (one facility per year) will be required to get a minor source NSR permit. This would result in an estimated one minor modification to a major source in Indian Country per year or seven total over the 7-year study period. The burden costs and impacts are based on sources incurring costs for both one-time capital costs and annual administrative costs.

With the information discussed above, EPA has what could be considered the minimum information to complete cost estimates for emission controls. However, due to a lack of data on existing sources in Indian Country, and the uncertainties associated with projecting the number of new facilities and modifications to existing facilities in the future, the current data will provide estimates that may have error bounds larger than the typical plus or minus 30 percent used in the EPA Control Cost Manual (EPA, 2001).

3.2 Overview of Emissions and Emission Controls for Typical Minor Sources

This section presents a profile of the various source categories selected as those that have the greatest potential to incur costs from modification of existing minor sources or the creation of new minor sources in Indian Country. Table 3-1 provides a summary of the emissions and controls associated with each minor source category. The air pollutants of

Table 3-1. Air Emission Control Approaches for Typical Minor Sources

Source Category	Air Pollutant Emissions		Air Emission Control Approaches				
	Criteria Air Pollutants	Hazardous Air Pollutants	Process Modification	Material Substitution	Recovery/ Recycling	Work Practices	Add-on Controls
Asphalt hot mix plants	CO, NO_x, PM, SO_2, VOC	Organic HAPs, e.g., PAHs	√			√	√
Dry cleaners	VOC	Perchloroethylene			√	√	√
Gasoline bulk plant	VOC	Benzene					√
Gasoline stations	VOC	Benzene					√
Industrial, commercial and institutional boilers	NO_x, PM, SO_2	Mercury	√	√			√
Natural gas compressor stations	CO, NO_x, VOC	PICs	√			√	√
Grain elevators	PM						√
Lumber saw mills	PM					√	√
Solid waste landfills	VOC				√		√
Nonmetallic mineral processing	PM	Metal HAP				√	√
Painting and coating operations	VOC	MEK, toluene, xylenes		√	√		√

Note: CO = Carbon monoxide
PM = Particulate matter
SO_2 = Sulfur dioxide
PICs = Products of incomplete combustion
NO_x = Nitrogen oxides
VOC = Volatile organic compounds
PAH = Polycyclic aromatic hydrocarbon
MEK = Methyl ethyl ketone

concern associated with the selected source types include carbon monoxide (CO), nitrous oxide (NO_x), particulate matter (PM), sulfur dioxide (SO_2), and volatile organic compounds (VOC). These pollutants can be controlled using a variety of techniques, including process modification, material substitution, recovery or recycling, work practices and add-on controls.

3.2.1 Asphalt Hot Mix Plants

Asphalt hot mix plants produce paving materials by mixing size-graded aggregate with heated liquid asphalt cement in measured quantities. The most significant ducted source of emissions from asphalt hot mix plants is the rotary drum dryer. Emissions from the drum consist of PM, NO_x, CO, and small amounts of VOC. Other potential process sources include the hot-side conveying, classifying, and mixing equipment.

Fugitive dust sources include vehicular traffic generating fugitive dust on paved and unpaved roads, aggregate material handling, and other aggregate processing operations. Organic vapor and its associated aerosol also are emitted directly to the atmosphere as process fugitives during truck load-out, from the bed of the truck itself during transport to the job site, and from the asphalt storage tank.

Process modifications such as burner design, operation, and maintenance can be used to minimize emissions of NO_x, CO, and organic compounds from the rotary drum dryers. Fugitive dust emissions are controlled by implementing work practice controls. Work practice control techniques used include suppressant application, paving, covering conveyors, and wet suppression, windbreaks, enclosure, soil stabilizers, and various methods to reduce freefall distances (e. g., telescopic chutes, stone ladders, and hinged boom stacker conveyors).

Practically all plants use primary dust collection equipment such as cyclones, skimmers, or settling chambers to control PM emissions. For secondary emissions control of PM, the primary collector is ducted to either a fabric filter or a venturi scrubber. Attempts to use electrostatic precipitators (ESPs) have met with little success.

Organic vapors from heated asphalt cement storage tanks can be reduced by condensing the vapors with air-cooled vent pipes. In some cases, tank emissions may be routed back to combustion units. Organic emissions from heated asphalt storage tanks may also be controlled with carbon canisters on the vents.

3.2.2 Dry Cleaning

Dry cleaning involves the cleaning of fabrics with non-aqueous organic solvents. Two general types of cleaning fluids are in use, petroleum solvents and synthetic solvents. Perchloroethyene (perc) and trichlorotrifluoroethane are the two synthetic dry cleaning solvents presently in use. Commercial operations such as small neighborhood or franchise dry cleaning shops clean soiled apparel for the consumer; industrial cleaners are larger dry cleaning plants which supply rental service of uniforms, mats, etc. to businesses.

VOC and HAP emissions from the solvent itself are the principal sources of pollution from dry cleaning operations. Solvent is given off by the washer, dryer, solvent still, as well as by leaky pipes, flanges, and pumps.

Solvent recovery is necessary in "perc" plants due to the higher cost of the solvent; recovery is effected through use of condensers, water/solvent separators, and carbon adsorption units. Some emission control can be obtained by maintaining all equipment (e.g., preventing lint accumulation, solvent leakage, etc.) and by using good operating practices (e.g., not overloading machinery).

Both carbon adsorption and incineration appear to be technically feasible controls for petroleum plants, but costs are high. Refrigeration systems are used on new dry to dry machines to recover washer/dryer exhaust gases. "Perc" plants use condensers, water/solvent separators, and carbon adsorption units for control.

3.2.3 Gasoline Stations

The marketing of petroleum liquids involves a number of distinct operations, each of which represents a potential source of evaporation loss. VOC and HAP are the major sources of concern.

A significant source of evaporative emissions at service stations is the filling of underground gasoline storage tanks. Gasoline is usually delivered to service stations in 8,000-gal tanks trucks or smaller account trucks. Emissions are generated when gasoline vapors in the underground storage tank are displaced to the atmosphere by the gasoline being loaded into the tanks. As with other loading losses, the quantity of loss in service station tanks depends on several variables, including the method and rate of filling, tank configuration, and the gasoline temperature, vapor pressure and composition. A second

source of vapor emissions from service stations is underground tank breathing that occur daily and are attributable to gasoline evaporation and barometric pressure changes.

Service station vehicle refueling activity also produces evaporative emissions. Vehicle refueling emissions come from vapors displaced from the automobile tank by dispensed gasoline and from spillage. The quantity of displaced vapors depend on gasoline temperature, auto tank temperature, gasoline vapor pressure, and dispensing rate. Spillage loss is made up of contributions from prefill nozzle drip and from spit-back and overflow from the vehicles' fuel tank filler pipe during filling. The amount of spillage loss can depend on several variables, including service station business characteristics, tank configuration, and operator techniques.

Emissions from underground tank filling operations at service stations can be reduced by the use of a vapor balance system that employs a hose that returns vapors displaced from the underground tank to the tank truck cargo compartments being emptied. Control methods for vehicle refueling emissions are based on conveying the vapors displaced from the vehicle fuel tank to the underground storage tank vapor space through the use of a special hose and nozzle. In "balance" vapor control systems, the vapors are conveyed by natural pressure differentials established during refueling. In "vacuum assist" systems, the conveyance of vapors from the auto fuel tank to the underground storage tank is assisted by a vacuum pump.

3.2.4 Industrial, Commercial and Institutional Boilers

Industrial, commercial, and institutional (ICI) boilers are used in a variety of applications, ranging from commercial space heating to process steam generation. Industrial boilers are used to produce process steam in the paper products, chemical, food, and the petroleum industries. Boilers with smaller heat input capacities are generally classified as commercial or institutional units. These boilers are used in a wide array of applications (e.g. office buildings, hotels, restaurants, hospitals, schools, museums, government buildings, airports) primarily to provide steam and hot water for space heating. Fossil fuels (coal, oil, or natural gas) are the primary fuels burned in ICI boilers and are the primary sources of emissions associated with boilers. Some industrial boilers burn industrial, municipal, or agricultural waste fuels.

Retrofit combustion controls for ICI boilers have targeted principally the replacement of the original burner with a low-NO_x design to lower NO_x emissions. Switching the fuel burned in a boiler will lower emissions in some cases. For example, converting a boiler from

oil-firing to natural gas firing (by replacing the burners) will reduce PM and, to a lesser extent, NO_x, emissions from the boiler. Switching to burning a lower sulfur content coal will lower SO_2 emissions from a coal-fired boiler. In addition, it is possible to retrofit ICI boilers with burners designed to decrease NO_x emissions.

Add-on controls can be used on larger size industrial boilers. However, some boiler designs are not adaptable to combustion controls to reduce NO_x. For these units, NO_x control involves the injection of a chemical reducing agent such as ammonia into the flue gas. Fabric filers or electrostatic precipitators (ESPs) generally are used for PM control. Wet particle scrubbers can also be used. The most common systems used to reduce SO_2 emissions include wet scrubbers and spray dryer absorbers.

3.2.5 Natural Gas Compressor Stations

At pipeline compressor stations in the natural gas industry, reciprocating engines are used to provide mechanical shaft power for compressors and pumps that move compressed natural gas in the pipeline. The formation of nitrogen oxides is exponentially related to combustion temperature in the natural gas-fired engine cylinder. The other pollutants (CO, VOC, & HAP) are primarily the result of incomplete combustion. Particulate matter including trace amounts of metals, noncombustible inorganic material, and condensable semivolatile organics result from volatilized lubricating oil, engine wear, or from products of incomplete combustion.

Potential controls include process modifications that employ advanced engine designs, parametric controls (timing and operating at a leaner air-to-fuel ratio), and postcombustion catalytic controls.

3.2.6 Nonmetallic Mineral Processing

This source category includes facilities involved in the processing of sand, gravel, or crushed rock as well as stone quarrying and processing. These operations involve the use of different combinations of washers, screens, and classifiers to segregate particle sizes; crushers to reduce oversized material; and storage and loading facilities.

Emissions from nonmetallic mineral processing consist primarily of particulate matter (PM) and particulate matter less than 10 micrometers (PM-10) in aerodynamic diameter. PM are emitted by many operations at mineral processing plants, such as conveying, screening, crushing, and storing operations. Most of these emissions are in the form of fugitive dust. If

the product is dried, emissions from dryers include PM and combustion products CO and NO_x. Dryers also may be sources of volatile organic compounds (VOC) or sulfur dioxide (SO_2) emissions, depending on the type of fuel used to fire the dryer.

Fugitive dust emissions are controlled by implementing work practice controls. Some successful work practice control techniques used for haul roads are dust suppressant application, paving, route modifications, and soil stabilization; for conveyors, covering and wet suppression; for storage piles, wet suppression, windbreaks, enclosure, and soil stabilizers; for conveyor and batch transfer points, wet suppression and various methods to reduce freefall distances (e.g., telescopic chutes, stone ladders, and hinged boom stacker conveyors); and for screening and other size classification, covering and wet suppression.

Some facilities use add-on control devices to reduce emissions of PM and PM-10 from nonmetallic mineral processing operations which can be partially or fully enclosed. Controls in use include cyclones, wet scrubbers, venturi scrubbers, and fabric filters. These types of controls are rarely used at construction sand and gravel plants, but are more common at industrial sand and gravel processing facilities.

3.2.7 Painting and Coating Operations

Surface coating is used widely in a number of production and service industries. There are many different types of coatings that are used in these industries such as paints, varnishes, printing inks, polishes, sealers, etc. Surface coating may be performed in a spray booth or in an open environment. Some previously open operations have been enclosed and the exhaust vented through a stack. Surface coatings may be applied manually or with automatic devices such as spray guns. Automobile refinishing is usually a nonmanufacturing category or surface coating and involves the painting of damaged or worn vehicles. Refinishing operations may be performed in enclosed, partially enclosed, or open areas.

The majority of emissions that occur during surface coating are volatile organic compounds that evaporate from the solvents contained in the coatings. The most common solvents are organic compounds such as ketones, esters, aromatics, and alcohols. Other ingredients of the coatings, such as metals and particulates, may also be emitted during operations. Emissions from surface coating operations may be vented directly to the atmosphere, released as uncaptured emissions, or routed to an air pollution control device or pollution prevention system.

Material substitution such as low VOC coatings, such as high-solids and waterborne coatings, are commonly used to minimize emissions from surface coating operations. Solvent recovery is a pollution prevention technique that can be used to reduce painting and coating emissions. Condensation is one such technique capable of recovering a reusable solvent. Carbon adsorption is another type of solvent recovery technology often used in this industry.

Capture systems may be used to collect the evaporated VOC emissions by vacuum or other exhaust mechanism and direct them to a control device. Both carbon adsorption and both thermal and catalytic incineration are technically feasible controls for coating operations. PM emissions from spray booths can be controlled with dry filters that capture particulates before entering the exhaust air. PM emissions from spray booths can also be controlled with a water curtain or waterwash filtration system. Painting or coating exhaust air is passed through a water "wall" that traps coating overspray that leads to PM emissions.

3.2.8 Grain Elevators and Processors

Grain elevators are facilities at which grains are received, stored, and then distributed for direct use, process manufacturing, or export. They can be classified as either "country" or "terminal" elevators, with terminal elevators further categorized as inland or export types. Operations other than storage, such as cleaning, drying, and blending, often are performed at elevators. The principal grains and oilseeds handled include wheat, corn, oats, rice, soybeans, and sorghum.

The same basic operations take place at country elevators as at terminal elevators, only on a smaller scale and with a slower rate of grain movement. Country elevators (those most likely to be located on Indian Country) are generally smaller elevators that receive grain by truck directly from farms during the harvest season. These elevators sometimes clean or dry grain before it is transported to terminal elevators or processors. Terminal elevators dry, clean, blend, and store grain before shipment to other terminals or processors, or for export. These elevators may receive grain by truck, rail, or barge, and generally have greater grain handling and storage capacities than do country elevators. Export elevators are terminal elevators that load grain primarily onto ships for export.

Country and terminal elevators built in recent years have moved away from the design of the traditional elevators. The basic operations performed at the elevators are the same; only the elevator design has changed. They employ a more open structural design,

which includes locating some equipment such as legs, conveyors, cleaners, and scales, outside of an enclosed structure. In some cases, cleaners and screeners may be located in separate buildings. The grain is moved from the unloading area using enclosed belt or drag conveyors and, if feasible, the movable tripper has been replaced with enclosed distributors or turn-heads for direct spouting into storage bins and tanks.

The main pollutant of concern in grain storage, handling, and processing facilities is particulate matter (PM). Also, direct fired grain drying operations and product dryers in grain processing plants may emit small quantities of VOC's and other combustion products; no data are currently available to quantify the emission of these pollutants.

Emission factors for various grain elevator operations are readily available. In trying to characterize emissions and evaluate control alternatives, potential PM emissions sources can be classified into three groups. The first group includes external emission sources (grain receiving and grain shipping), which are characterized by direct release of PM from the operations to the atmosphere. These operations are typically conducted outside elevator enclosures or within partial enclosures, and emissions are quickly dispersed by wind currents around the elevator. The second group of sources are process emission sources that may or may not be vented to the atmosphere and include grain cleaning and headhouse and internal handling operations (e.g., garner and scale bins, elevator legs, and transfer points such as the distributor and gallery and tunnel belts). These operations are typically located inside the elevator structure. Dust may be released directly from these operations to the internal elevator environment, or aspiration systems may be used to collect dust generated from these operations to improve internal housekeeping. If aspiration systems are used, dust is typically collected in a cyclone or fabric filter before the air stream is discharged to the atmosphere. Dust emitted to the internal environment may settle on internal elevator surfaces, but some of the finer particles may be emitted to the environment through doors and windows. For operations not equipped with aspiration systems the quantity of PM emitted to the atmosphere depends on the tightness of the enclosures around the operation and internal elevator housekeeping practices. The third group of sources includes those process that emit PM to the atmosphere in a well-defined exhaust stream (grain drying and storage bin vents).

The two principal factors that contribute to dust generation during bulk unloading are wind currents and dust generated when a falling stream of grain strikes the receiving pit. Grain unloading is an intermittent source of dust occurring only when a truck or car is unloaded. The three general types of measures that are available to reduce emissions from

grain handling and processing operations are process modifications designed to prevent or inhibit emissions, capture/collection systems, and oil suppression systems that inhibit release of dust from the grain streams.

The primary preventive measures that facilities have used are construction and sealing practices that limit the effect of air currents and minimizing grain free fall distances and grain velocities during handling and transfer. While the preventive measures described above can minimize emissions, most facilities also require ventilation, or capture/collection, systems to reduce emissions to acceptable levels. Almost all grain handling and processing facilities, except relatively small grain elevators, use capture/collection on the receiving pits, cleaning operations, and elevator legs. Generally, milling and pelletizing operations at processing plants are ventilated, and some facilities use hooding systems on all handling and transfer operations. Grain elevators that rely primarily on aspiration typically duct many of the individual dust sources to a common dust collector system, particularly for dust sources in the headhouse.

The control devices typically used in the grain handling and processing industry are cyclones (or mechanical collectors) and fabric filters. Cyclones are generally used only on country elevators and small processing plants located in sparsely populated areas. Terminal elevators and processing plants located in densely populated areas, as well as some country elevators and small processing plants, normally use fabric filters for control. Both of these systems can achieve acceptable levels of control for many grain handling and processing sources.

3.2.9 Solid Waste Landfills

A solid waste landfill unit is a discrete area of land or an excavation that receives municipal (or household) solid waste, and that is not a land application unit, surface impoundment, injection well, or waste pile. A solid waste landfill unit may also receive other types of wastes, such as commercial solid waste, nonhazardous sludge, and industrial solid waste.

There are three major designs for municipal and commercial landfills. These are the area, trench, and ramp methods. All of these methods utilize a three step process, which includes spreading the waste, compacting the waste, and covering the waste with soil. Modern landfill design often incorporates liners constructed of soil (i.e., recompacted clay),

or synthetics (i.e., high density polyethylene), or both to provide and impermeable barrier to leachate (i.e., water that has passed through the landfill) and gas migration from the landfill.

Methane (CH_4) and CO_2 are the primary constituents of landfill gas (LFG), and are produced by microorganisms within the landfill under anaerobic conditions. Transformations of CH_4 and CO_2 are mediated by microbial populations that are adapted to the cycling of materials in anaerobic environments. Typically, LFG also contains a small amount of non-methane organic compounds (NMOC). This NMOC fraction often contains various organic hazardous air pollutants (HAP), greenhouse gases (GHG), and compounds associated with stratospheric ozone depletion. The NMOC fraction also contains volatile organic compounds. PM emissions can also be generated in the form of fugitive dust created by mobile sources (i.e., garbage trucks) traveling along paved and unpaved surfaces.

The rate of emissions from a landfill is governed by gas production and transport mechanisms. Production mechanisms involve the production of the emission constituent in its vapor phase through vaporization, biological decomposition, or chemical reaction. Transport mechanisms involve the transportation of a volatile constituent in its vapor phase to the surface of the landfill, through the air boundary layer above the landfill, and into the atmosphere. The three major transport mechanisms that enable transport of a volatile constituent in its vapor phase are diffusion, convection, and displacement.

Emissions from landfills are typically controlled by installing a gas collection system, and combusting the collected gas through the use of internal combustion engines, flares, or turbines. Gas collection systems are not 100 percent efficient in collecting landfill gas, so emissions of CH_4 and NMOC at a landfill with a gas recovery system still occur. Reported collection efficiencies typically range from 60 percent to 85 percent, with an average of 75 percent most commonly assumed.

Landfill gas collection systems are either active or passive systems. Active collection systems provide a pressure gradient in order to extract LFG by use of mechanical blowers or compressors. Passive systems allow the natural pressure gradient created by the increase in pressure created by LFG generation within the landfill to mobilize the gas for collection.

LFG control and treatment options include (1) combustion of the LFG, and (2) purification of the LFG. Combustion techniques include techniques that do not recover energy (i.e., flares and thermal incinerators), and techniques that recover energy (i.e., gas turbines and internal combustion engines) and generate electricity from the combustion of the

LFG. Boilers can also be employed to recover energy from LFG in the form of steam. Flares involve an open combustion process that requires oxygen for combustion, and can be open or enclosed. Thermal incinerators heat an organic chemical to a high enough temperature in the presence of sufficient oxygen to oxidize the chemical to carbon dioxide (CO_2) and water. Purification techniques can also be used to process raw landfill gas to pipeline quality natural gas by using adsorption, absorption, and membranes.

Controlled emission estimates also need to taken into account the control efficiency of the control device. Control efficiencies based on test data for the combustion of CH_4, NMOC, and some speciated organics with differing control devices. Emissions from the control devices need to be added to the uncollected emissions to estimate total controlled emissions.

3.2.10 Concrete Batching Plants

Concrete is composed essentially of water, cement, sand (fine aggregate) and coarse aggregate. Coarse aggregate may consist of gravel, crushed stone or iron blast furnace slag. Approximately 75 percent of the U.S. concrete manufactured is produced at plants that store, convey, measure and discharge these constituents into trucks for transport to a job site. At most of these plants, sand, aggregate, cement and water are all gravity fed from the weigh hopper into the mixer trucks. The concrete is mixed on the way to the site where the concrete is poured. At some of these plants, the concrete may also be manufactured in a central mix drum and transferred to a transport truck. Most of the remaining concrete manufactured are products cast in a factory setting.

The raw materials for concrete can be delivered to a plant by rail, truck or barge. The cement is transferred to elevated storage silos pneumatically or by bucket elevator. The sand and coarse aggregate are transferred to elevated bins by front end loader, clam shell crane, belt conveyor, or bucket elevator. From these elevated bins, the constituents are fed by gravity or screw conveyor to weigh hoppers, which combine the proper amounts of each material.

Particulate matter, consisting primarily of cement dust but including some aggregate and sand dust emissions, is the primary pollutant of concern. In addition, there are emissions of metals that are associated with this particulate matter. All but one of the emission points are fugitive in nature. The only point sources are the transfer of cement (and pozzolan) material to storage silos, and these are usually vented to a fabric filter or "sock." Fugitive

sources include the transfer of sand and aggregate, truck loading, mixer loading, vehicle traffic, and wind erosion from sand and aggregate storage piles. The amount of fugitive emissions generated during the transfer of sand and aggregate depends primarily on the surface moisture content of these materials. Types of controls used to reduce fugitive dust emissions include water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, and the like. A major source of potential emissions, the movement of heavy trucks over unpaved or dusty surfaces in and around the plant, can be controlled by good maintenance and wetting of the road surface.

3.2.11 Gasoline Bulk Plants

Motor gasoline produced at petroleum refineries is transferred primarily by pipeline, ship, or barge to intermediate storage at bulk gasoline terminals. Various grades of gasoline are dispensed through loading racks into tank trucks at bulk gasoline terminals. The gasoline is then transferred by truck from bulk terminals to intermediate storage facilities, known as bulk gasoline plants or delivered directly to service stations. The gasoline delivered to bulk plants is again transferred into tank trucks and delivered to service stations and private accounts, such as farmers.

Emissions from bulk plants occur when gasoline being loaded displaces the vapors displaced in the tank truck or storage tank and forces the vapors to the atmosphere (commonly called "working losses"). Temperature induced pressure differentials can expel vapor-laden air or induce fresh air into storage tanks (breathing losses) and result in air pollutant emissions. Liquid transfers in and out of storage tanks create loading and draining losses which combined are called "working losses."

Control technology utilized to minimize emissions during tank truck and storage tank loading at bulk plants includes: (1) switching from top splash loading to submerged loading, (2) collecting displaced vapors from the loading of storage tanks and balancing the vapors back to the truck being unloaded, and (3) collecting displaced vapors from trucks being loaded and balancing the vapors back to the bulk plant's storage tank. Converting the loading equipment from top splash to submerged loading will reduce emissions by approximately 60 percent. Vapor balancing tank truck and storage tank transfers can reduce working loss emissions by 90 percent to 95 percent. A good maintenance and annual testing program can reduce leakage from vapor collection equipment on tank trucks to 10 percent.

The EPA issued Control Techniques Guidelines (CTG) in 1977 and 1978 to control emissions from bulk plants and leakage from gasoline tank trucks and vapor collection systems, respectively. The bulk plant CTG recommends installation of vapor balance equipment for incoming and outgoing tank truck transfers. However, it does address that plants below 15,000 liters (about 4,000 gallons) per day of gasoline throughput may not be cost-effective in some situations.

3.2.12 Lumber Saw Mills

At sawmills, cut logs are either stored in a log pond or stacked on the ground. If logs are too long to easily handle, they are cut to smaller lengths. This process is called bucking. The next process is debarking. There are five types of machine used for this: two of the barkers are dry processes; the other three use water. After debarking the logs are cut to required lengths and then cut lengthwise into standard sizes. After cutting, the lumber is dried either by air or in a kiln. After drying, the lumber is transferred to storage or shipped off-site. At plants processing cut lumber, the lumber may be stacked and air dried or loaded onto carts and fed into a kiln. The natural moisture is about 60 percent to 70 percent and kiln drying reduces it to 5 percent to 8 percent. This is necessary in order to prevent warping or shrinking of furniture.

Sources of fugitive emissions at the sawmill are generally debarking, sawing, and sawdust handling operations. Log handling and bucking are negligible sources of fugitive emissions. Most processes such as planing, sanding, and sawing within sawmills that have secondary processing plants are normally controlled by hoods and various other vacuum pick-up devices which are ducted to cyclones and/or fabric filters. Emissions which escape these hoods and pick-up devices are minimal. Insignificant amounts are emitted through the ventilation system. As a result, fugitive emissions from individual processes are essentially negligible.

Fugitive particulate emissions from sawmills consists primarily of broken bark particulate and sawdust from sawing. Dirt and dust that are embedded in the bark also become airborne when the bark is broken and also during unloading, dragging, debarking, and storage operations. Very limited data are available concerning the characterization of fugitive emissions generated during these operations.

Emission factors for saw mills are only presented as potential uncontrolled emission rates; therefore, the site-specific level of control must be considered for application to a

specific sawmill or furniture manufacturing plant when estimating emissions. Fugitive emission factors are based solely on best engineering judgment and material balance information. Thus, available emission factors are at best order of magnitude estimates.

Control technology options for sawmills and lumber production sources (except plant roads) include specific dust control systems for the various handling operations. Since drum debarkers, bag barkers, and hydraulic barkers are all wet process, they are in themselves a good method for reducing fugitive emissions during the debarking process. If logs can be kept in wet storage prior to debarking, fugitive emissions will be minimal during this process. If wet storage is not possible, enclosure of the debarking operation or fixed hoods with ventilation to baghouses or cyclones is an alternative.

Fugitive emissions from sawing can be controlled in several ways. Thinner saw blades will reduce the amount of fugitive emissions generated. This also has an economical benefit since it results in a more efficient use of lumber. Fixed hoods or building evacuation to fabric filters will also help control fugitive emissions. Fugitive emissions from sawdust storage piles can be controlled by wet suppression. However, when it is possible, trucking the waste away as soon as possible can substantially reduce the fugitive emissions generated at these storage piles. Additional fugitive control can be attained by directly blowing sawdust into a boiler or to a particulate board facility.

The wood waste storage bin vent is usually partially controlled by a screen. If this screen is replaced by a fabric filter, the amount of fugitive emission released can be significantly reduced. The use of telescopic tubes during loadout from the storage bin to trucks will reduce freefall distance and thus the amount of fugitive emissions generated. This coupled with a canvas covered truck and use of side curtains will give additional control efficiency. Other means of control would be enclosure of the loadout area with the possibility of also venting to a baghouse or cyclone.

3.2.13 Printing Operations

The major printing processes are lithography, rotogravure, flexography and screen printing. Minor printing processes include letter press which is declining in market share and various modern plateless printing processes based on inkjet and photocopy technology. Lithographic printing is the largest printing sector, both in terms of the value of the output and the number of facilities. Lithography can be broken down into web heatset, web nonheatset, sheet-fed, and newspaper. Web operations are large and capital intensive and are

unlikely to be located on Indian reservations. There are probably a number of "small town" newspapers printed on reservations. These are very likely to be printed by lithography. There are about 9,000 newspapers in the United States, and at least 90 percent of them are printed by lithography. Some of these are likely to be located on reservations.

The largest segment of the printing industry is commercial lithographic printing. This includes stationery, advertising, pamphlets, business forms, flyers, newsletters, books, circulars, and a small amount of packaging. There are about 25,000 print shops in the U.S. that do commercial lithography. A large city might have as many as 100 print shops. A small town might have one or two print shops. There will definitely be commercial lithographic printers on reservations.

The EPA's offset lithographic CTG address air emissions from printing operations. The printing plants most likely to represent printing facilities on reservations are small and very small newspapers, and small and very small nonheatset sheet-fed printers. The emission rates and applicable control technologies are described in the CTG.

Sources of VOC emissions from offset lithographic printing operations are the inks (heatset), fountain solution, and cleaning solutions used as raw materials in the printing process. Baseline emission of VOC's from inks for printing plants are calculated from the amount of ink used, the percent VOC in the ink, and the estimated percent VOC from the ink retained by the print and substrate. In heatset printing, VOC's from the ink are emitted from the hot air dryer exhaust. Because VOC's are retained by the substrate, VOC emissions within the facility limits are much lower from nonheatset inks than from heatset inks. VOC emissions from the ink in heatset printing operations can be controlled by add-on devices that destroy or collect the VOC-released from the dryer. Four technologies available to the lithographic printing industry for controlling VOC's from inks: thermal incinerators, catalytic incinerators, condenser filters, and condenser filters with carbon. The control efficiency for thermal and catalytic incinerators was estimated at 95 percent to 100 percent, with 98 percent control a reasonable estimate of performance. Control efficiency was estimated at 90 percent for condenser filters and at 95 percent for condenser filters with carbon.

Isopropyl alcohol is added to offset lithographic fountain solution to decrease the surface tension of the water used to wet the nonimage areas of the lithographic plate. Some offset facilities and most of the newspaper industry use nonalcohol additives (containing

VOC's) to reduce water surface tension. One method for controlling VOC emissions from the fountain solution is to reduce the concentration of alcohol in the fountain. Cleaning compounds used for offset lithographic printing are approximately 100 percent VOC. If the cleaner is all VOC, the emissions are equal to the amount of cleaning solution used. Lower VOC inks, fountain solutions and cleaning compounds are available that have VOC contents ranging from 0 percent to 30 percent (by weight), as used.

3.3 Control Costs for Typical Minor Sources

This section presents the costs associated with controlling pollution for the selected source categories. Control costs were estimated for both new minor sources and modifications to existing minor sources. As described above, the Agency used a typical facility approach to estimating compliance costs.

3.3.1 Control Costs for New Minor Sources

Table 3-2 presents the estimated compliance costs for typical new minor sources on Indian Country. For each source category, the table shows the estimated capital cost per source of the Minor Source Control Technology (MSCT), the annualized MSCT cost, and the number of new minor sources predicted to occur nationwide. This is followed by nationwide estimates of MSCT capital costs, total capital costs and annualized MSCT costs. Nationwide total capital costs include the MSCT costs plus the one-time monitoring, compliance testing, recordkeeping, and reporting (MRR) costs associated with the minor source NSR permit program. Finally the table presents an estimate of total annual compliance costs, which include annualized capital costs plus the annualized MRR costs associated with the program.

As shown in Table 3-2, the largest capital costs are borne by the stone quarrying and processing facilities, which have annualized MSCT costs of $73,800 per source. Surface coating operations have an expected annualized cost of $66,000 per source. Gasoline stations have two sets of costs, one for storage tanks and one for refueling. The total annualized cost for gasoline stations incurring both sets of costs is $3,790. Printing operations have the lowest annualized MSCT cost with an estimated $2,200 per source. The natural gas industrial, commercial and institutional boilers to $61,365 per facility for oil fired boilers.

Table 3-2. Compliance Costs for Typical New Minor Sources in Indian Country

Source Category [SIC code]	Compliance Costs for Typical New Minor Sources in Indian Country						
	MSCT Capital Cost per Source (yr 2000 $) [a]	MSCT Annualized Cost per Source (yr 2000 $) [b]	Number of New Minor Sources [c]	Nationwide MSCT Capital Cost (yr 2000 $) [d]	Nationwide Total Capital Cost (yr 2000 $) [e]	Nationwide MSCT Annualized Cost (yr 2000 $) [f]	Nationwide Total Annual Compliance Cost (yr 2000 $) [g]
Dry cleaner [7216]	$23,550	$3,250	22	$518,100	$806,035	$71,500	$238,659
Gasoline bulk plant [5171]	$31,400	$3,530	13	$408,200	$578,344	$45,890	$144,666
Gasoline station *Storage tanks* [5541]	$1,870	$380	167	$312,290	$2,497,982	$63,460	$1,332,348
Gasoline station *Refueling* [5541]	$12,650	$3,410	167	$2,112,550	$2,112,550	$569,470	$569,470
Industrial, commercial and institutional boiler: *Natural gas*	$30,590	$6,151	2	$61,180	$87,356	$12,302	$27,498
Industrial, commercial and institutional boiler: *Oil-fired*	$361,211	$61,365	0	$0	$0	$0	$0
Natural gas compressor station [4922]	$140,200	$25,970	6	$841,200	$919,728	$155,820	$201,409
Asphalt hot mix plant [2951]	$160,800	$50,000	1	$160,800	$173,888	$50,000	$57,598
Concrete batching plant [5032]	$147,000	$48,400	2	$294,000	$320,176	$96,800	$111,996

(continued)

Table 3-2. Compliance Costs for Typical New Minor Sources in Indian Country (continued)

Source Category [SIC code]	Compliance Costs for Typical New Minor Sources in Indian Country						
	MSCT Capital Cost per Source (yr 2000 $) [a]	MSCT Annualized Cost per Source (yr 2000 $) [b]	Number of New Minor Sources [c]	Nationwide MSCT Capital Cost (yr 2000 $) [d]	Nationwide Total Capital Cost (yr 2000 $) [e]	Nationwide MSCT Annualized Cost (yr 2000 $) [f]	Nationwide Total Annual Compliance Cost (yr 2000 $) [g]
Sand and gravel processing [1442]	$174,700	$57,900	2	$349,400	$375,576	$115,800	$130,996
Stone quarrying and processing [1422 and 1423]	$210,700	$73,800	2	$421,400	$447,576	$147,600	$162,796
Grain elevator [5153]	$135,900	$47,100	13	$1,766,700	$1,936,844	$612,300	$711,076
Solid waste landfill [4953]	$145,000	$26,460	2	$290,000	$316,176	$52,920	$68,116
Lumber saw mill [2421]	$144,000	$48,100	3	$432,000	$471,1264	$144,300	$167,094
Automobile refinishing shop [7532]	$52,800 [carbon adsorption]	$11,000	35	$1,848,000	$2,306,079	$385,000	$650,935
Surface Coating operations [2396, 3411, and 3479]	$209,000	$66,000	3	$627,000	$666,264	$198,000	$220,794
Printing operation (lithographic) [2752]	NA	$2,200	15	$0	$196,320	$33,000	$146,792
Totals			288	$10,442,820	$14,212,157	$2,754,162	$4,942,424

(continued)

Table 3-2. Compliance Costs for Typical New Minor Sources in Indian Country (continued)

Notes: [a]—Capital costs (i.e., total capital investment) includes the purchased equipment cost (including conventional process monitors), direct installation cost, and indirect installation costs on a per unit or source basis.

[b]—Total annual cost is comprised of direct costs, indirect costs (including capital recovery), and any recovery credits.

[c]—Total number of new minor sources that are expected to commence operation in Indian Country that have authorization to implement the NSR minor source rule.

[d]—Nationwide MSCT capital cost are the capital costs for each source type multiplied by the number of new source types expected.

[e]—Nationwide total capital costs includes the MSCT capital costs plus the one-time monitoring, compliance testing, recordkeeping, and reporting costs associated with the minor source NSR permit program which averages $13,088 per affected source.

[f]—Nationwide MSCT annualized costs are MSCT annualized cost for each source type multiplied by the number of new source types expected.

[g]—Nationwide Total Annual Compliance Costs are the MSCT annualized cost plus the annualized costs of monitoring, testing, recordkeeping, and reporting associated with the minor source NSR permit program which averages $7,598 per year per affected source.

Nationwide total annual compliance costs are the MSCT annualized cost plus the annualized costs of monitoring, testing, recordkeeping, and reporting associated with the minor source NSR permit program which averages $7,598 per year per affected source. This estimate is discussed in further detail in Appendix C. With an estimated 167 new sources nationwide, gas stations have the highest nationwide total annual compliance costs. As shown in Table 3-2, oil-fired boilers are not expected to have any new sources, and consequently, have an estimated nationwide compliance cost of $0. Nationwide, among the remaining source categories, total annual compliance costs range from $27,498 for natural gas boilers to $711,076 for grain elevators. For a more complete explanation of how these cost estimates were developed, see Appendix C. Summing the total annual compliance costs for all 288 affected sources, the estimated total nationwide annual compliance cost is $4,942,424.

3.3.2 Control Costs for Minor Modifications to Existing Minor Sources

The EPA estimates that there are 3,169 existing minor sources in Indian Country. Assuming that a minor source makes a modification every 10 years, each year there would be an estimated 317 facilities making modifications to their operations. However, it is anticipated that of these minor source process/operational modifications only 5 percent will result in greater than *de minimus* emissions increases. This group (16 facilities per year) will be required to get a minor source NSR permit. Of these minor source facilities undergoing a minor modification, it is estimated that half will incur control device costs. Over the 7-year analysis period, the Agency estimates that 112 minor source facilities in Indian Country will make minor modifications that will require them to seek a permit under the proposed rule.

Table 3-3 presents cost estimates for existing minor sources that make minor modifications. This table includes eight fields that describe compliance cost estimates for each minor source category: the number of modifications that require permits, the MSCT capital cost per source, the annualized MSCT costs per source, the number of sources incurring control costs, the nationwide MSCT costs, the total nationwide capital costs, the nationwide annualized MSCT costs, and the total nationwide annual compliance costs.

The MSCT capital costs per source given in Table 3-3 are the same as those in Table 3-2 for new minor sources. The MSCT annualized costs per source are the same as well. However, as noted earlier, only half of the facilities seeking permits are estimated to actually incur these control costs. Consequently, the nationwide costs for minor modifications to minor sources are much lower than those for new minor sources.

Table 3-3. Compliance Costs for Minor Modifications to Existing Minor Sources in Indian Country

Source Category [SIC code]	Compliance Costs for Minor Modifications to Minor Sources in Indian Country							
	Number of Modifications to Minor Sources Requiring Permits [0]	MSCT Capital Cost per Source (yr 2000 $) [a]	MSCT Annualized Cost per Source (yr 2000 $) [b]	Number of Minor Sources Incurring Control Costs [c]	Nationwide MSCT Capital Cost (yr 2000 $) [d]	Nationwide Total Capital Cost (yr 2000 $) [e]	Nationwide MSCT Annualized Cost (yr 2000 $) [f]	Nationwide Total Annual Compliance Cost (yr 2000 $) [g]
Dry cleaner [7216]	9	$23,550	$3,250	4	$94,200	$211,992	$13,000	$81,383
Gasoline bulk plant [5171]	5	$31,400	$3,530	2	$62,800	$128,240	$7,060	$45,051
Gasoline station *storage tanks* [5541]	64	$1,870	$380	32	$59,840	$897,470	$12,160	$498,440
Gasoline station *refueling* [5541]	64	$12,650	$3,410	32	$404,800	$404,800	$109,120	$109,120
Industrial, commercial and institutional boiler: *natural gas*	1	$30,590	$6,151	0	$0	$13,088	$0	$7,598
Industrial, commercial and institutional boiler: *oil-fired*	0	$361,211	$61,365	0	$0	$0	$0	$0
Natural gas compressor station [4922]	3	$140,200	$25,970	1	$140,200	$179,464	$25,970	$48,764

(continued)

Table 3-3. Compliance Costs for Minor Modifications to Existing Minor Sources in Indian Country (continued)

Source Category [SIC code]	Compliance Costs for Minor Modifications to Minor Sources in Indian Country							
	Number of Modifications to Minor Sources Requiring Permits [0]	MSCT Capital Cost per Source (yr 2000 $) [a]	MSCT Annualized Cost per Source (yr 2000 $) [b]	Number of Minor Sources Incurring Control Costs [c]	Nationwide MSCT Capital Cost (yr 2000 $) [d]	Nationwide Total Capital Cost (yr 2000 $) [e]	Nationwide MSCT Annualized Cost (yr 2000 $) [f]	Nationwide Total Annual Compliance Cost (yr 2000 $) [g]
Asphalt hot mix plant [2951]	0	$160,800	$50,000	0	$0	$0	$0	$0
Concrete batching plant [5032]	1	$147,000	$48,400	1	$147,000	$160,088	$48,400	$55,998
Sand and gravel processing [1442]	1	$174,700	$57,900	1	$174,700	$187,788	$57,900	$65,498
Stone quarrying and processing [1422 and 1423]	1	$210,700	$73,800	1	$210,700	$223,788	$73,800	$81,398
Grain elevator [5153]	5	$135,900	$47,100	2	$271,800	$337,240	$94,200	$132,1901
Solid waste landfill [4953]	1	$145,000	$26,460	0	$0	$13,088	$0	$7,598
Lumber saw mill [2421]	1	$144,000	$48,100	1	$144,000	$157,088	$48,100	$55,698
Automobile refinishing shop [7532]	13	$52,800 [carbon adsorption]	$11,000	6	$316,800	$486,944	$66,000	$164,776

(continued)

Table 3-3. Compliance Costs for Minor Modifications to Existing Minor Sources in Indian Country (continued)

Source Category [SIC code]	Compliance Costs for Minor Modifications to Minor Sources in Indian Country							
	Number of Modifications to Minor Sources Requiring Permits [0]	MSCT Capital Cost per Source (yr 2000 $) [a]	MSCT Annualized Cost per Source (yr 2000 $) [b]	Number of Minor Sources Incurring Control Costs [c]	Nationwide MSCT Capital Cost (yr 2000 $) [d]	Nationwide Total Capital Cost (yr 2000 $) [e]	Nationwide MSCT Annualized Cost (yr 2000 $) [f]	Nationwide Total Annual Compliance Cost (yr 2000 $) [g]
Surface Coating operations [2396, 3411, and 3479]	1	$209,000	$66,000	1	$209,000	$222,088	$66,000	$73,598
Printing operation (lithographic) [2752]	6	NA	$2,200	3	$0	$78,528	$6,600	$52,189
Totals	112			55	$2,235,840	$3,701,693	$628,310	$1,479,301

Notes: [0]—Total number of modifications to existing minor sources expected to commence operation in Indian Country that will be required to obtain a minor NSR permit.

[a]—Capital costs (i.e., total capital investment) includes the purchased equipment cost (including conventional process monitors), direct installation cost, and indirect installation costs on a per unit or source basis.

[b]—Total annual cost is comprised of direct costs, indirect costs (including capital recovery), and any recovery credits.

[c]—Total number of minor sources undergoing modifications in Indian Country that will incur a control device cost to reduce emissions to MSCT levels.

[d]—Nationwide MSCT capital cost are the capital costs for each source type multiplied by the number of new source types expected to incur control device costs.

[e]—Nationwide total capital costs includes the MSCT capital costs plus the one-time monitoring, compliance testing, recordkeeping, and reporting costs associated with the minor source NSR permit program which averages $13,088 per affected source.

[f]—Nationwide MSCT annualized costs are MSCT annualized cost for each source type multiplied by the number of new source types expected to incur control costs.

[g]—Nationwide Total Annual Compliance Costs are the MSCT annualized cost plus the annualized costs of monitoring, testing, recordkeeping, and reporting associated with the minor source NSR permit program which averages $7,598 per year per affected source.

Total nationwide annual compliance costs include the MSCT annualized cost plus the annualized costs of monitoring, testing, recordkeeping, and reporting associated with the minor source NSR permit program which averages $7,598 per year per affected source. Gas stations are expected to incur the largest costs nationwide, with an estimated 32 facilities incurring total compliance costs of $498,440 for storage tanks and $109,120 for refueling. EPA estimates that there will be no minor modifications requiring permits for Oil-fired boilers and asphalt hot mix plant, and consequently, estimates that these source categories will have nationwide total annual costs equal to $0. In addition, although natural gas boilers and solid waste landfills are both expected to have one facility requiring a permit during the analysis period, neither category is anticipated to include facilities that will incur control costs.

EPA estimates that across all source categories, the total nationwide annual compliance cost for the modification of existing minor sources is $1,479,301.

3.4 Costs for Major Sources

The proposed rule establishes regulatory mechanisms for new major source facilities in nonattainment areas, for major modifications to existing major source facilities in nonattainment areas and for minor modifications to existing major sources. EPA does not expect that the rule will result in incremental capital or operating costs for new major sources or major modifications to existing sources in nonattainment areas, because the Clean Air Act Amendments of 1990 established nonattainment new source review for major sources. However, major sources in Indian Country that make minor modifications are expected to incur costs under the proposed rule. These costs include one-time capital costs associated with MRR and annual MRR expenditures due to labor costs. Major sources in Indian Country that make minor modifications are not anticipated to incur costs for installing emission control devices as a result of the proposed rule.

EPA estimates that there are currently 83 major sources located in Indian country. Some of these sources would choose to make minor modifications over the analysis period. The Agency assumes that each major source does a process or operational modification every 10 years. However, it is anticipated that of these major source process/operational modifications only 10 percent will result in greater than *de minimus* emissions increases. This group (one facility per year) will be required to get a minor source NSR permit. This would result in an estimated one minor modification to a major source in Indian Country per year or seven total over the 7-year analysis period.

Each of these seven facilities is expected to incur one-time capital costs associated with MRR of $13,088 per affected source. Nationwide, costs of this type are expected to be approximately $91,616. Over a period of 10 years at an interest rate of 7 percent, the annualized cost of these capital expenses is $1,863 per year per facility. Including annual labor costs, each facility making a minor modification requiring a permit will incur MRR costs of $7,598 per year, per affected source. The total nationwide annual compliance costs for these facilities is $53,186. The development of the estimates for MRR costs is discussed further in Section 3.5 and in Appendix C.

The proposed rule does provide an implementation mechanism for the nonattainment new source review in Indian Country. Prior to the proposed rule, new major sources wanting to locate in nonattainment areas in Indian Country would have to be incorporated into a TIP or a FIP–essentially establishing facility-specific requirements. The rule will establish a regulatory mechanism so that permits can be issued for new major source in nonattainment areas in Indian Country without the necessity of facility-specific requirements in a TIP or a FIP. This is expected to simplify the process of obtaining a permit and may actually reduce the costs of investing in a new major source facility. It is also likely to make the timing and requirements less uncertain than they are at baseline. Reduced cost and uncertainty for siting new major source facilities in nonattainment areas in Indian Country may result in increased investment in such facilities under the proposed rule.

3.5 Administrative Costs

This section describes the costs for respondents (affected minor and major sources) and tribal agencies in charge of administering the new source review program for minor sources on Indian Country. These costs include labor and capital expenditures associated with the administration of the program. A full description of the development of these cost estimates, along with the assumptions used for labor rates and capital outlays, is presented in Appendix C.

As described above, the average cost per affected source for MRR, for both major and minor sources, is $7,598 per year. This annualized figure is derived from the estimates of average capital and labor costs per facility. The average capital costs are $13,088 per affected source over the analysis period. Over a period of 10 years at an interest rate of 7 percent, the annualized cost of these capital expenses is $1,863 per year per facility. The remainder of costs per affected source are due to labor expenses associated with MRR

activities. Labor rates and associated costs are based on Bureau of Labor Statistics (BLS, 2002) data.

Under the proposed rule, tribal agencies have the option to administer the program themselves or allow EPA to implement the program. If they choose to administer the program themselves, tribal agencies will incur administrative costs. The average total tribal agency burden per affected source, includes labor for technical, management, legal, and clerical personnel. The average total annualized cost to the agency per affected source is calculated by determining the total labor cost for all the various respondent activities and annualizing those costs that are initial, one-time occurrences. The annualized costs and the costs for those activities that are recurring are then added to any associated costs (e.g., total travel expenses for tests attended) to get the average agency burden per facility. The average total annualized cost to the agency per affected source given in Attachment 2 of Appendix C, including the cost of labor, capital, operation, and maintenance, is $3,110 per year.

Nationwide, the Agency estimates that 288 (approximately 41 per year) new minor sources will locate on Indian Country during the analysis period. In addition, EPA estimates that 112 (16 per year) existing minor sources and 7 (1 per year) existing major sources will make minor modifications during the analysis period that require permitting under the proposed rule. In total, approximately 407 sources will require permits during the 7-year analysis period under the proposed rule. Consequently, EPA estimates that the total cost for agencies administering the proposed rule is $1,265,770 during the analysis period. The amount of this burden borne by tribal agencies depends on how many will administer the program themselves.

3.6 Summary

This section provides a description of emissions, controls and costs associated with the proposed rule. As a result of the proposed rule, the Agency expects new minor sources, minor sources making modifications and major sources making minor modifications to incur costs.

Since there are no detailed emission inventories for minor sources that are universally available for Tribes, the Agency determined that typical minor source types would be used to estimate costs on a geographic basis. These typical minor source types are considered those minor source types most likely to make modifications or to be new minor sources located in Indian Country.

The emissions and controls associated with the typical source type categories identified above are profiled in this section. The air pollutants of concern associated with the selected source types include carbon monoxide (CO), nitrous oxide (NO_x), particulate matter (PM), sulfur dioxide (SO_2), and volatile organic compounds (VOC). These pollutants can be controlled using a variety of techniques, including process modification, material substitution, recovery or recycling, work practices and add-on controls.

To develop the costs associated with controlling these emissions from minor sources, EPA developed an approach that estimates compliance costs for a typical facility for each minor source category. Estimates of process throughput or operating capacities are required to size and cost air pollution controls and to estimate emissions. These values are selected to reflect typical minor source sizes for the source category. These assumptions create uncertainty in the cost analysis. A thorough description of how facility level costs are estimated is presented in Appendix C.

Sections 3.3 and 3.4 describe typical control and administrative burden costs, for minor and major sources respectively. Table 3-4 summarizes the estimated costs to industry of compliance with the proposed rule. Across all 288 new minor sources, the estimated total nationwide annual compliance cost is $4,942,424. For the 112 facilities expected to make modifications at existing minor sources, the estimated total nationwide compliance cost is $1,479,309 per year. The Agency does not expect costs to result from the proposed rule for new major sources or major modifications to major sources in nonattainment areas. Synthetic minor sources are also not expected to incur costs. EPA estimates that approximately seven major sources in Indian Country will make minor modifications that require permitting under the proposed rule. As a result, EPA estimates that the total nationwide compliance costs for these facilities will be $53,186 per year. The total nationwide annual cost of the rule to industry across the affected source types is $6,474,911.

Section 3.5 gives an overview of administrative costs, for both respondents (affected major and minor sources) and tribal agencies. For respondents, the average cost per affected source for MRR is $7,598 per year. The average total annualized cost to the agency administering the program per affected source is $3,110 per year. EPA estimates that the total cost for agencies administering the proposed rule is $1,265,770 during the analysis period. The amount of this burden borne by tribal agencies depends on how many will administer the program themselves.

Table 3-4. Estimated Total Capital and Annual Compliance Cost to Industry

Affected Source Type	Number of Affected Sources	Nationwide Total Capital Costs	Nationwide Total Annual Costs
New minor sources	288	$14,212,157	$4,942,424
Modifications to minor sources	112	$3,701,693	$1,479,301
New major sources in nonattainment areas	1	0	0
Major modifications to major sources in nonattainment areas	1	0	0
Minor modifications to major sources	7	$91,616 [1]	$53,186 [2]
Synthetic minor sources	0	0	0
Totals	409	$18,005,466	$6,474,911

Notes: 1. Capital costs are estimates as the number of affected sources multiplied by the one-time monitoring, compliance testing, recordkeeping, and reporting costs associated with the minor source NSR permit program which averages $13,088 per affected source.

2. Annual costs are estimated as the number of affected sources multiplied by the annualized costs of monitoring, testing, recordkeeping, and reporting associated with the minor source NSR permit program which averages $7,598 per year per affected source.

SECTION 4

ECONOMIC IMPACT ANALYSIS METHODS AND RESULTS

The purpose of the Economic Impact Analysis (EIA) is to evaluate the effect of the proposed rule on the welfare of affected stakeholders and society as a whole. The engineering cost analysis presented in Section 3 represents an estimate of the resources required to comply with the proposed rule under baseline economic conditions. This section augments the cost analysis with an evaluation of how firms and people may react to changes in market conditions. Typically, EPA analyzes these responses by developing models that simulate behavioral changes in response to the rule. In this instance, however, EPA limited its analysis to a qualitative examination of likely responses to the rule, supplemented by a quantitative screening of the costs of the rule in the context of facility and company sales and profits. EPA chose to conduct this type of analysis because data on future market conditions and creation of new minor source facilities were too limited and uncertain to permit construction of a simulation model. To inform its assessment of economic impacts, the Agency developed a qualitative description of potential economic impacts of the rule on facility construction and market prices. In addition, EPA conducted a simple screening analysis, described in more detail below, to develop quantitative measures of the potential impacts of the proposed rule. As described in Section 3, above, EPA expects new minor source facilities to incur some incremental costs as a result of the proposed rule. New major source facilities, however, may experience cost savings and reduced uncertainty about the permitting process under the proposed rule. Existing minor and major sources may incur compliance costs associated with permitting and emission controls. Because the costs and impacts are expected to be different for minor sources and major sources, we analyze them separately.

4.1 Impacts on Minor Sources

In this section, EPA presents its analysis of economic impacts on minor source facilities. Because minor source facilities are largely unregulated at baseline, EPA estimates that there will be some incremental costs incurred by companies wishing to site new minor source facilities in Indian Country. In addition, there will be some incremental costs associated with permitting and emission control technologies for companies choosing to make minor modifications to existing minor sources.

4.1.1 Qualitative Discussion of Economic Impacts on Markets with Minor Source Facilities Affected by the Rule

The proposed rule could alter economic choices because it may increase the costs of production for siting some new minor source facilities. As a result of the proposed rule, firms considering building new facilities will be faced with a decision on whether to commit to a new facility of a given size. In its analysis, EPA assumes that without the proposed rule, new minor source facilities in Indian Country are not regulated; thus the rule will increase the cost of siting such a facility. The Agency recognizes that this may not always be the case, but this assumption is the most conservative in that it results in the greatest estimated increase in costs for new sources. To examine the economic intuition of market and welfare implications of these entry decisions, we use a simple long-run competitive model of a constant-cost industry.

4.1.1.1 Impact on Facility Construction and Market Prices

How do firms decide whether to construct a facility in Indian country? Economic theory suggests the answer will depend on the incentives the firm faces. Constructing new minor source facilities involves investment in land and capital (building and equipment) as well as incurring costs to operate the new facility. The traditional economic theory of investment states that an investment should be undertaken if the net present value of the stream of income from the investment is positive. Companies can gain some insight into the likelihood of a positive income stream by looking at the experience of existing firms in the industry. If existing firms are currently making an economic profit, this will encourage new firms to enter the market. Conversely, if existing firms are suffering losses, firms are discouraged from entering the market, and existing firms are likely to leave the industry. In long run equilibrium, there will be no incentives to enter or exit the market because economic profits[3] are zero.

Two figures illustrate a simplified picture of the market for a commodity and the investment decision. Over time, there is a need for new facilities if the demand for the good or service they produce is growing. Demand for a commodity may be growing because of increased population or purchasing power or because tastes and preferences are changing in its favor. In Figure 4-1, the outward shift of the demand curve from D_0 to D_1 shows growing demand for a commodity. Using the simplifying assumption that there are a large number of potential entries with identical production costs (in other words, that there is a typical new

[3]It is important to emphasize the distinction economists make when using the term economic profit. Economists include all implicit costs (opportunity costs) as well as explicit costs in their profit measure. Therefore, zero economic profits should not be interpreted that accounting profits are zero.

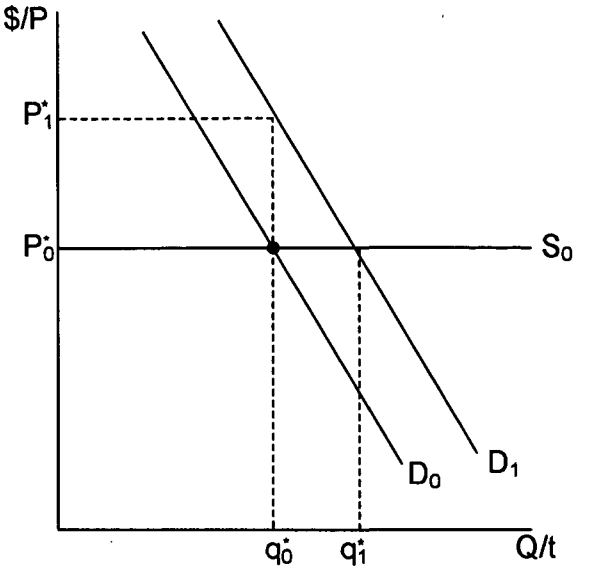

Figure 4-1. A Simple Example of Long-Run Market Equilibrium for a Constant Cost Industry, as Demand Grows Over Time

facility configuration that would have a given set of associated costs of construction and operation), the long-run market supply curve is *horizontal at a price* that is consistent with zero economic profit. This price is equal to the minimum average total cost of the typical plant (see Figure 4-1). Using a conventional downward sloping demand curve, the market equilibrium in baseline is (p_0*, q_0*). As demand grows over time, the price of the commodity rises to p_1*, which increases the profitability of firms producing it and attracts new firms into the market. After construction of new facilities, the price drops down again to the long run equilibrium price p_0*, and the equilibrium quantity is increased by the production of the new facilities to q_1*.

Complying with the proposed rule will require that companies investing in new minor source facilities undertake compliance activities and perhaps purchase control equipment or materials. These compliance requirements increase the average or per-unit-of-output cost of constructing and operating a new minor source facility. To illustrate how the proposed rule will impact the affected market, we shift the market supply curve upward by the total average cost of compliance for new minor sources. As demand grows, eventually, the market price increases to the point that new facilities would be profitable (P_1*). The proposed rule

increases the cost of production at new minor source facilities, so a higher product price is needed to provide a normal return to the owners. As new facilities are constructed, the quantity supplied increases to q_1* and price falls to equal the average total cost of the facility, P_2*. Figure 4-2 shows the same growth in demand as Figure 4-1, but because the cost of constructing and operating a new facility is now higher, the increase in output (produced by new facilities) is smaller than that shown in Figure 4-1. In other words, increases in the cost of new facilities due to the proposed rule will slow the rate of investment, and fewer new facilities would be constructed than in the absence of the rule.

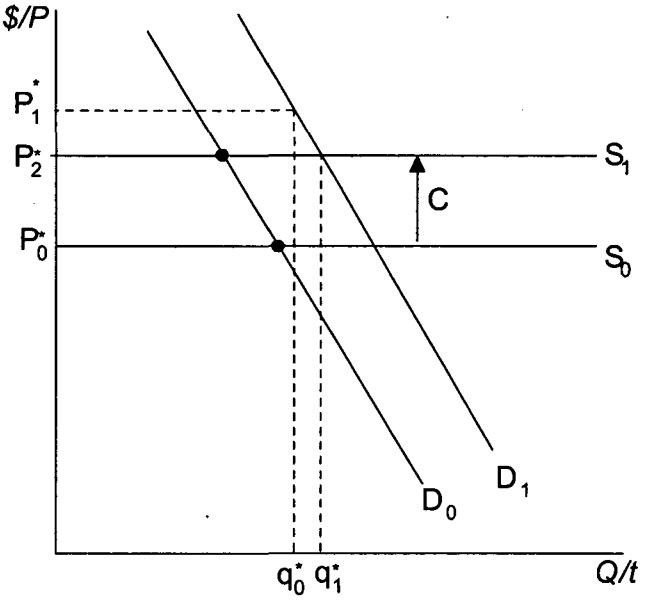

Figure 4-2. New Source Requirements Lead to a Reduced Number of New Minor Source Facilities

As noted earlier, the Agency concluded that data limitations and uncertainty do not support the development of precise quantitative estimates of the change in the rate of investment. However, the Agency can make the following general assessments. First, the changes in market output and price will be a function of two variables:

- the responsiveness of consumers to changes in price (shown in the slope of the Demand curve) and
- the size of the per-unit compliance costs (the size of the vertical shift in the long run supply curve).

The economic sectors expected to invest in new minor source facilities in Indian Country produce a variety of goods and face a demand curves of varying elasticities. Similarly, different types of new minor source facilities will face different estimated incremental costs. EPA does not have sufficient data to attempt to quantify all these influences. However, EPA has undertaken a screening analysis to assess the relative magnitude of the costs of compliance for each affected economic sector.

4.1.2 Qualitative Discussion of Economic Impacts on Markets with Existing Minor Source Facilities

In addition to the potential impacts to new minor sources, the proposed rule may also alter the economic choices of existing minor source facilities considering minor modifications. Complying with permitting and emission control technologies increase the average cost of operating an existing minor source facility. The impact of these costs on the affected market is similar to that illustrated in Figure 4-2.

The limitations and uncertainty previously identified for new minor source facilities also pertain to the analysis of modifications to existing minor source facilities. EPA does not have sufficient data to attempt to quantify all the influences that will affect market outcomes. In order to assess the relative magnitude of the costs of compliance for each affected economic sector, EPA has undertaken a screening analysis.

4.1.3 Screening Assessment of the Impacts of the Proposed MMNSRIC on Minor Sources

EPA's screening assessment compared the total annualized cost of complying with the proposed rule for typical facilities in each sector with facility sales and company sales and profits for typical facilities and companies in each sector. While not accounting for company choices as reflected in the market for the commodities these firms produce, this analysis does provide a basis for assessing how significant the costs might be to the firms considering siting minor source facilities or modifying existing minor source facilities in Indian Country. EPA identified industrial sectors in Indian Country most likely to be affected by the proposed rule. Table 4-1 identifies the number of facilities in each sector that EPA assumes will be affected by the proposed rule. Data on the sales and number of establishments for these sectors were obtained from Wards Business Directory and the Economic Census (Bureau of the Census, 1997). EPA computed the typical facility sales revenues by dividing the sector sales by the number of establishments in each sector. The resulting estimates of typical facility sales for each sector are shown in Table 4-2. Similarly, estimated company sales are computed by dividing sector sales revenues by the number of

Table 4-1. New and Existing Minor Source Facilities Affected Under the Proposed Rule

Sector Description	New Minor Source Facilities	Minor Modifications to Existing Minor Sources	
		Modifications Requiring Permits and Emission Controls	Modifications Requiring Permits Only
Sand and gravel processing	2	1	0
Lumber saw mill	3	1	0
Printing operation	15	3	3
Asphalt hot mix plant	1	0	0
Natural gas compressor	6	1	2
Solid waste landfill	2	0	1
Concrete batching plant	2	1	0
Grain elevator	13	2	3
Gasoline bulk plant	13	2	3
Gasoline station storage tanks and refueling	167	32	32
Dry cleaner	22	4	5
Automobile refinishing shop	35	6	7
Stone quarrying and processing[a]	2	1	0
Surface coating operations[b]	3	1	0
Boilers (NG)	2	0	1
Boilers (oil)	0	0	0
Total	**288**	**55**	**57**

[a] Includes NAICS 212312 and 212313.

[b] Includes NAICS 31332, 323113, 332431 and 332812.

Table 4-2. Typical Facility Level and Company Level Data for Minor Source Sectors ($2000)

Sector Description	Typical Company Sales	Typical Company Profits	Typical Facility Sales
Sand and gravel processing	66,193,750	3,773,044	1,426,898
Lumber saw mill	103,917,627	2,597,941	5,869,799
Printing operation	22,558,087	721,859	2,011,402
Asphalt hot mix plant	146,228,309	8,335,014	4,934,711
Natural gas compressor	17,581,301	732,847	10,368,112
Solid waste landfill	24,585,939	848,766	3,930,520
Concrete batching plant	18,245,969	474,395	3,094,330
Grain elevator	227,430,805	2,729,170	18,421,645
Gasoline bulk plant	76,011,217	684,101	20,046,346
Gasoline station storage tanks and refueling	515,813,939	7,221,395	1,719,752
Dry cleaner	22,773,529	313,943	248,457
Automobile refinishing shop	16,794,824	470,255	496,774
Stone quarrying and processing (212312)	23,411,161	2,364,527	2,958,751
Stone quarrying and processing (212313)	28,480,000	2,306,880	4,599,206
Surface coating operations (31332)	26,505,546	1,033,716	2,633,851
Surface coating operations (323113)	43,677,311	1,703,415	2,633,851
Surface coating operations (332431)	533,458,418	19,204,503	42,945,376
Surface coating operations (332812)	26,124,118	1,384,578	3,795,143
Boilers (NG)	27,492,773	3,161,131	2,645,827
Boilers (Oil)	27,492,773	3,161,131	2,645,827

companies. These are also shown in Table 4-2. Finally, Table 4-2 shows typical company profits for each sector. Company profits are estimated by multiplying typical return on sales (Dun & Bradstreet, 1997) times typical company sales. As shown in Table 4-2, some types of minor source facilities are represented by several SIC or NAICS codes, with varying sales. For completeness, the Agency includes all the sectors.

Sales for affected facilities range from only $248,000 for a dry cleaning facility to $42.9 million for a surface coating facility. The average facility sales across all sectors is approximately $6.9 million. The final categories of minor sources, oil fired boilers and natural gas fired boilers, are found in many sectors throughout the economy. Thus, their estimated revenues represent an average of typical facility sales across all industries.

Typical company sales also vary widely. They range from approximately $16.8 million for companies owning automobile refinishing shops to more than $510 million for companies owning gasoline stations. Average company sales across all sectors is approximately $100 million. Similarly, estimated company profits vary widely. Both return on sales and company sales vary, and estimated company profits (the product of these two variables) therefore also varies widely. Profitability (return on sales) ranges from less than 1 percent for companies owning

gasoline bulk plants to more than 10 percent for companies owning some stone quarrying and processing plants. Estimated profits range from approximately $313,000 for dry cleaning companies to approximately $19 million for companies owning facilities that perform surface coating operations on metals (NAICS 332431). To analyze the impacts of complying with the proposed rule on average facilities and companies in each sector, EPA compares the estimated cost of compliance (including both emissions control costs and administrative burden) to each of the variables shown in Table 4-2. The resulting ratios, shown in Table 4-3, allow EPA to examine the relative magnitude of the costs in the context of facility and company operations. Costs of compliance for a single new minor source facility in each sector were estimated by EPA. These costs were then multiplied by the ratio of total facilities to total companies in each affected sector to determine the total compliance cost for an affected company. Subsequently, the total company compliance cost was compared with estimated facility sales and estimated company sales and profits.

Table 4-3 indicates that the compliance costs are generally relatively small compared to typical facility and company sales. Across all sectors, compliance costs represent less than 5 percent of facility sales revenues. Thus, they are relatively small. If costs and revenues of new minor source facilities in these sectors are similar in scale to those of existing minor source facilities, the costs of complying with the proposed rule would be expected to result in a relatively small upward shift in the supply curve (see Figure 4-2), and a relatively small reduction in the rate of creation of new facilities.

Similarly, the costs generally represent a small share of typical company revenues and profits. For most sectors, the costs of complying with the proposed rule are less than half a percent of company sales. Natural gas compressor stations have the highest share of costs to sales, which reflects the relatively high ratio of facilities to companies in this sector. Although costs account for more than 2.5 percent of typical company sales, the proposed rule is not expected to pose a risk of making typical companies in this sector unprofitable. For

Table 4-3. Screening Comparison of Total Annualized Compliance Costs to Facility and Company Financial Data for Minor Sources

Sector Description	Estimated Total Annualized Cost of Compliance for Typical Minor Source Facility ($2000)	Screening Ratios (percent)		
		Ratio of Costs to Company Sales	Ratio of Costs to Company Profits	Ratio of Costs to Facility Sales
Sand and gravel processing	$65,498	0.13%	2.26%	4.59%
Lumber saw mill	$55,698	0.06%	2.37%	0.95%
Printing operation	$9,798	0.04%	1.40%	0.49%
Asphalt hot mix plant	$57,598	0.09%	1.52%	1.17%
Natural gas compressor	$58,498	2.67%	64.17%	0.32%
Solid waste landfill	$60,198	0.34%	9.95%	0.87%
Concrete batching plant	$55,998	0.41%	15.70%	1.81%
Grain elevator	$54,698	0.04%	3.44%	0.30%
Gasoline bulk plant	$11,128	0.02%	2.37%	0.06%
Gasoline station storage tanks and refueling	$18,986	0.01%	0.45%	1.10%
Dry cleaner	$10,848	0.05%	3.87%	4.37%
Automobile refinishing shop	$18,598	0.11%	4.04%	3.74%
Stone quarrying and processing (212312)	$81,398	0.74%	7.35%	2.75%
Stone quarrying and processing (212313)	$81,398	0.69%	8.50%	1.77%
Surface coating operations (31332)	$73,598	0.10%	6.58%	2.79%
Surface coating operations (323113)	$73,598	0.17%	4.40%	2.79%
Surface coating operations (332431)	$73,598	0.03%	0.95%	0.17%
Surface coating operations (332812)	$73,598	5.81%	0.31%	1.94%
Boilers (NG)	$13,749	0.06%	0.54%	0.52%
Boilers (Oil)	$68,963	0.31%	2.71%	2.61%

most sectors, the compliance costs are less than 5 percent of typical company profits, which suggests that the companies would have the resources to devote to investing in control equipment and operating costs to comply with the rule. Costs exceed 10 percent of typical company profits for the natural gas compressor and concrete batching plant sectors. However, the costs do not approach the level of profits, so compliance does not pose a risk of making typical companies in affected sectors unprofitable.

EPA estimates that under the proposed rule, 112 existing minor source facilities will undergo minor modifications over the course of the study period (see Table 4-1). Half of these facilities (55) are expected to incur both permitting and emission control costs. The total annualized costs of compliance for these facilities are the same as those presented in Table 4-3. As already indicated, the costs of compliance generally represent a small share of typical company sales and profits, suggesting that typical companies would have the resources to comply with the rule. The remaining minor source facilities that are expected to make minor modifications (57), are assumed to incur only permitting costs. Table 4-4 provides the total annualized costs of compliance and computes the ratio of cost-to-sales at the company and facility levels. Across all sectors, company costs are less than a half of 1 percent of average company sales and less than 4 percent of average profits, while facility costs are less than 2 percent of average sales.

Overall, the costs of complying with the proposed rule for minor sources are generally low and unlikely to cause significant reductions in the rate of investment in new minor source facilities in Indian Country. In addition, EPA's analysis indicates that the proposed rule is not likely to pose a risk of making typical companies in affected sectors unprofitable. Although EPA does not have sufficient data to allow it to model the impacts of the rule quantitatively, a screening assessment comparing costs to average facility and company financial data shows that costs are small relative to both average facility sales and average company sales, and are generally a small share of typical company profits. The analysis is based on estimated costs for typical minor source facilities, compared to estimated sales for typical facilities and companies, and estimated profits for typical companies. Within each sector there is likely to be substantial variation in costs, facility sales, and company sales and profits. Thus, it is possible that individual companies might find that the costs for a specific project would be sufficient to discourage them from investing. Overall, however, EPA expects the impacts to be small.

Table 4-4. Screening Comparison of Total Annualized Compliance Costs to Facility and Company Financial Data for Existing Minor Sources Requiring Permits

Sector Description	Estimated Total Annualized Cost of Compliance for Typical Minor Source Facility Requiring Permitting Only ($2000)	Screening Ratios (percent)		
		Ratio of Costs to Company Sales	Ratio of Costs to Company Profits	Ratio of Costs to Facility Sales
Sand and gravel processing	$7,598	0.01%	0.23%	0.53%
Lumber saw mill	$7,598	0.01%	0.43%	0.13%
Printing operation	$7,598	0.06%	1.81%	0.38%
Asphalt hot mix plant	$7,598	0.04%	0.73%	0.15%
Natural gas compressor	$7,598	0.09%	2.28%	0.07%
Solid waste landfill	$7,598	0.04%	1.91%	0.19%
Concrete batching plant	$7,598	0.05%	2.09%	0.25%
Grain elevator	$7,598	0.01%	0.59%	0.04%
Gasoline bulk plant	$7,598	0.02%	2.68%	0.04%
Gasoline station storage tanks and refueling	$7,598	0.00%	0.18%	0.44%
Dry cleaner	$7,598	0.05%	3.39%	3.06%
Automobile refinishing shop	$7,598	0.05%	1.78%	1.53%
Stone quarrying and processing (212312)	$7,598	0.03%	0.33%	0.26%
Stone quarrying and processing (212313)	$7,598	0.03%	0.34%	0.17%
Surface coating operations (31332)	$7,598	0.03%	1.81%	0.29%
Surface coating operations (323113)	$7,598	0.02%	0.49%	0.29%
Surface coating operations (332431)	$7,598	0.00%	0.04%	0.02%
Surface coating operations (332812)	$7,598	0.03%	0.57%	0.20%
Boilers (NG)	$7,598	0.03%	0.30%	0.29%
Boilers (Oil)	$7,598	0.03%	0.30%	0.29%

4.2 Impacts on Major Sources

New major sources are already regulated under the Clean Air Act at baseline. New major source facilities in attainment areas are covered by the Federal Prevention of Significant Deterioration program and are unaffected by the proposed rule. New major sources in nonattainment areas, which are affected by the proposed rule, are currently addressed through a Tribal Implementation Plan or a Federal Implementation Plan. The proposed rule provides a regulatory mechanism for permitting new major source facilities and major and minor modifications of major sources in nonattainment areas in Indian Country. By providing a regulatory mechanism, the proposed rule simplifies the process of permitting such facilities. The emissions control requirements for such sources are unchanged. Thus, EPA expects that the costs of permitting a new major source facility in nonattainment area in Indian Country will, if anything, be reduced by the proposed rule.

In addition, the new permitting arrangements will be more predictable and the timing and cost less uncertain than without the rule. Economists studying investment under uncertainty (Dixit and Pindyck, 1994) demonstrate that investors considering a project consider not only the expected rate of return on the investment, but also the level of uncertainty about that rate of return. Using a model based on financial options, they show that uncertainty about an investment makes investors want to delay the investment to gather more information about the investment's likely rate of return. Thus, uncertainty leads to delays in investment. Reducing the uncertainty about the timing and cost of permitting new major source facilities in nonattainment areas in Indian Country will therefore reduce the need to wait for more information, and will make investors more likely to invest. Thus, both the reduced cost (increased rate of return) and the reduced uncertainty promote increased investment in new major source facilities in nonattainment areas in Indian Country, compared to baseline conditions. While this qualitative assessment suggests the direction of the changes in costs and uncertainty (decreased), and investment in new major source facilities (increased), EPA has no information to inform a quantitative estimate of these effects.

Existing major source facilities that elect to make minor modifications are expected to incur compliance costs under the proposed rule. EPA estimates that seven facilities will make minor modifications over the entire study period. Although there is company-specific data on existing major sources in nonattainment areas, EPA is not able to identify which of the major source facilities may decide to make minor modifications. Thus, Table 4-5 identifies the industry sectors, rather than specific companies, that it assumes will make

Table 4-5. Existing Major Source Facilities Expected to Undergo Minor Modifications Under the Proposed Rule (2000$)

Sector Description	Number of Facilities	Average Company Sales
Natural gas plant	1	$72,900,000,000
Power plant (coal-fired)	1	$148,000,000
Lumber saw mill[a]	1	$2,300,000,000
Natural gas compressor[a]	4	$524,000,000,000
Total	**7**	

[a] Incomplete sales data for all companies in the sector.

minor modifications over the study period. To assess the relative magnitude of the costs of compliance for each of the affected economic sectors, EPA conducted a screening analysis. Company sales information were obtained from *ReferenceUSA* and *Hoovers On-line Directory* databases. EPA computed average company sales revenues by dividing the sector sales by the number of companies in each sector. The figures are presented in Table 4-5. The costs-to-sales ratios for companies in each of these sectors is presented in Table 4-6. In none of these sectors do the compliance costs exceed 0 percent of sales.

Table 4-6. Screening Comparison of Total Annualized Compliance Costs to Facility and Company Financial Data for Existing Major Sources Undergoing Minor Modifications

Sector Description	Estimated Total Annualized Cost of Compliance for Typical Major Source Facility ($2000)	Screening Ratios (percent)
		Ratio of Costs to Company Sales
Natural gas plant	$7,598	0.00%
Power plant (coal-fired)	$7,598	0.00%
Lumber saw mill	$7,598	0.00%
Natural gas compressor	$7,598	0.00%

4.3 Impacts on Tribes Accepting Delegation

EPA also estimated total annualized permitting and administrative costs for the agencies administering the NSR program, of $3,110 per new or modified source. Under the provisions of the proposed rule, Tribes may choose to accept delegation of the NSR program and would thereby incur these costs. The actual costs incurred by individual Tribes will depend on how many new or modified sources occur on their reservations, and how complex those sources are. To assess the possible impacts to Tribes, EPA conducted a screening analysis based on data for several representative Tribes that have chosen to administer their own air programs.

EPA estimated the number of new and modified sources that would be sited on the reservations of these representative Tribes, and compared the associated programmatic costs per Tribal member with the per capita income of the Tribe (in other words, the ratio of cost per tribal member to income per tribal member). Table 4-7 shows the results of this comparison.

Table 4-7. Measures of Impact on Tribes Choosing to Administer the NSR Program

Impact Measure	Minimum[a]	Average	Maximum
Number of New and Modified sources	1	6	10
Cost per Tribe	$4,300	$17,300	$30,200
Cost per Tribal Member	$0.17	$0.46	$0.75
Cost per Tribal Member as a share of Per Capita Income	0.002%	0.004%	0.007%

[a] Since EPA projects no new or modified sources for some of the representative Tribes, the actual minimum is 0 for each category. Values presented here represent the minimum for Tribes projected to have at least one new or modified source during the period.

EPA estimates that a total of eight new minor sources will be sited on the reservations of the representative Tribes, and three existing minor sources will make minor modifications. Total costs per tribe range from $0 (no new or modified sources on the reservation during the period) to $30,200 for a tribe projected to have 10 of the 11 projected new or modified sources on its lands. Total program costs across all the representative tribes is estimated to be $34,600.

Costs per Tribal member are computed by dividing Tribal costs by the number of Tribal members. The cost per Tribal member ranges from $0 (again, for Tribes with no

projected sources) to $0.75 per Tribal member per year. If the Tribes pass the costs of the NSR program through to their Members, the average Tribal member will incur less than $1 per year in administrative burden costs.

Dividing the estimated cost per Tribal member by the Tribes' per capita income yields a screening measure of the significance of the per-member costs of administering the program. For all the representative Tribes, the costs per Tribal member is less than 0.01 percent of Tribal per capita income.

Thus, if Tribes choose to administer the NSR program, EPA does not believe that the costs of the program will pose an undue burden to them or their members.

SECTION 5

SMALL ENTITY IMPACT ANALYSIS

5.1 Introduction

The proposed Review of New Sources and Modifications in Indian Country (hereafter referred to as the proposed rule) potentially affects the following types of sources in Indian Country:

- new minor sources,
- modifications to existing minor sources,
- minor modifications to existing major sources,
- sources accepting emissions limitations to become synthetic minor sources,
- new major sources in nonattainment areas, and
- major modifications to existing major sources in nonattainment areas.

Current operations at existing minor and major source facilities in Indian Country will not be affected by the proposed rule. For three of the source types listed above, EPA estimates that the rule would result in no incremental costs. For new major sources and major modifications to existing major sources in nonattainment areas in Indian Country, the rule provides a permitting mechanism. In the absence of the rule, a source-specific FIP or TIP would be needed. Thus, EPA expects such sources to experience no change in costs or lower costs due to the rule. Similarly, the choice to become a synthetic minor by accepting Federally enforceable emissions limitations is entirely optional; EPA believes firms would only choose to do so if it resulted in a cost savings. Thus, EPA's screening analysis focuses on costs associated with new minor sources, modifications to existing minor sources, and minor modifications to existing major sources.

While all entities owning affected sources are subject to the rule, small entities (small businesses, governments, or non-profit organizations) may have special problems complying with regulations because they have fewer financial resources, fewer workers to implement changes, less engineering and legal expertise, etc. The Regulatory Flexibility Act (RFA) of 1980 as amended in 1996 by the Small Business Regulatory Enforcement Fairness Act (SBREFA) generally requires an agency to prepare a regulatory flexibility analysis of a rule unless the agency certifies that the rule will not have a significant economic impact on a

substantial number of small entities (small businesses, small governmental jurisdictions, and small organizations), or SISNOSE.

This document describes the underlying assumptions and computations U.S. Environmental Protection Agency (EPA) made in estimating the number of affected small entities (in this case, small businesses), and examines the proposed rule's possible impact on these entities. The rule is not expected to result in incremental compliance costs for new major source facilities, major modifications to existing major sources, or facilities choosing to become synthetic minors. Thus, EPA's analysis of small business impacts focuses entirely on impacts associated with new minor source facilities and minor modifications to existing minor and major sources. EPA estimates that small businesses investing in 164 new minor source facilities, 62 minor modifications to existing minor sources, and 3 minor modifications to existing major sources over the period 2004 through 2010 will incur approximately $4.2 million per year to comply with the proposed rule. For most industry sectors, costs are less than 1 percent of average small company sales revenues, but small companies choosing to invest in new natural gas compressor stations or new solid waste landfills have the potential to incur costs exceeding 1 percent of their sales. Because EPA projects that small businesses in these two sectors would invest in only one new source of each type over the period, EPA does not believe that the proposed rule will impose significant economic impacts on a substantial number of small businesses.

5.2 Methods for Identifying Potentially Affected Small Entities and Conducting a Screening Analysis of the Impacts of the Proposed Rule

Section 2 describes EPA's method and results for estimating the number of new and modified minor and major sources potentially affected by the Tribal MMNSR. In this section, EPA must assess the significance of the costs of implementing the rule on potentially affected small entities. This section describes EPA's data and methods, and presents the estimated number of potentially affected small entities. To assess impacts on small entities potentially affected by the rule, the Agency conducted a screening analysis of potential impacts on small businesses. Section 5.3 describes the data, methods, and results of EPA's screening analysis for small businesses.

For purposes of assessing the impacts of the proposed rule on small entities, a small entity is defined as (1) a small business based on criteria established by the SBA;[4] (2) a small governmental jurisdiction, that is a government of a city, county, town, school district, or special district with a population of less than 50,000; or (3) a small organization, that is any

[4]http://www.sba.gov/library/cfrs/13cfr121.pdf

not-for-profit enterprise that is independently owned and operated and is not dominant in its field. For the proposed Rule, only small businesses are potentially affected.

To estimate how many of the projected affected sources estimated in Section 2 might potentially be owned by small businesses, EPA collected data on company employment and sales data in the affected industries from financial databases, *Ward's Business Directory* (Information Access Company, 1997) and *Reference*USA (*Reference*USA, 2003), and used the data to calculate the share of companies in each affected industry that would be considered small according to the SBA criteria. For all the sectors except natural gas compressors and solid waste landfills, *Ward's Business Directory* provided data on company sales. For those two sectors, Ward's reports company assets. Thus, EPA collected sales data from Reference USA (*Reference*USA, 2003) to compute typical sales for small and large companies in those sectors. Financial data from Ward's and *Reference*USA were adjusted to 2000 dollars using industry-specific producers price indexes from the Bureau of Labor Statistics (BLS, 2003).

Using these data, EPA conducted a screening analysis to determine if the proposed Rule is likely to impose significant economic impacts on a substantial number of small entities. The screening analysis compares the estimated company costs of compliance with the proposed rule to average company revenues for small and large companies in each affected industry. Compliance costs per company are computed by multiplying facility costs by the average number of facilities per company based on data from the 1997 Economic Census (U.S. DOC, Economic Census, 1997). According to the Census data the average number of establishments (facilities) per small firm (company) in the affected industries ranges from 1.0 to 1.5. The average number of facilities per large company in the affected industries ranges from 1.1 to 110.9.

5.3 Screening Analysis of Impacts on Small Businesses in Minor Source Industries

The first step in conducting a screening analysis of impacts on small businesses for minor source industries is to estimate the number of potentially affected small businesses and to characterize those businesses in terms of the average annual sales revenues, which will be the denominator of EPA's screening measure: the ratio of total annualized cost of compliance to annual sales (cost-to-sales ratio or CSR).

5.3.1 Characterizing Typical Small Businesses in Affected Minor Source Industries

The proposed Rule affects new and modified minor sources in Indian Country. Because the rule covers investments that will occur in the future, it is not possible to evaluate

potential impacts based on actual sales of actual affected companies. EPA does not have information allowing it to determine which companies will choose to construct new facilities or modify existing facilities in Indian Country between 2004 and 2010. Instead, EPA is evaluating impacts on potentially affected companies based on the sales of typical small and large companies in the industries identified as existing minor sources based on 11 Tribal inventories. To characterize typical small and large companies in the affected industries, EPA collected data from financial databases (Information Access Company, 1997; *Reference*USA, 2003) on company employment and sales in the affected industries. Based on these data, EPA identified small companies according to industry-specific criteria established by the SBA (shown in Table 5-1), and computed the average company sales revenues for small companies and large companies in each industry. EPA collected data on small and large companies so that impacts on small companies could be compared with those on larger companies. Table 5-2 shows the shares of companies in each industry estimated to be small and large, and average company sales in each affected industry for small and large companies.

As Table 5-2 shows, most firms in the affected minor source industries were considered small. EPA assumes that the ownership pattern of new and modified minor sources will be the same as the pattern shown in 1997 for these industries as a whole. For example, EPA assumes that, of projected new sources in sand and gravel processing, 90.6 percent will be owned by small businesses. Because industrial, commercial, and institutional boilers may be used in virtually any industry, EPA uses the median values for the other affected industries to represent the share of affected boilers that will be owned by small businesses, and the typical sales for small and large companies owning new boilers.

5.3.2 Estimated Number of New and Modified Minor Sources Owned by Small Businesses

EPA estimated the number of new and modified minor sources owned by small businesses by multiplying the share of businesses in each industry that are small times the projected number of new and modified minor sources in each industry. Table 5-3 presents EPA's estimated number of new and modified minor sources owned by small businesses, based on the projected number of new minor sources shown in Table 2-15 and the number of modified minor sources shown in Table 2-16. To compute the number of small companies owning these minor sources, EPA divides the estimated number of new and modified sources owned by small businesses in each industry by the number of facilities per small company in that industry.

Table 5-1. Small Business Administration Criteria for Selected Industries

Sector	SBA Criteria[a]	
	Employment Criterion	Sales Criterion
Stone quarrying and processing (NAICS 212312)	500	
Stone quarrying and processing (NAICS 212313)	500	
Sand and gravel processing (NAICS 212321)	500	
Surface coating operations (NAICS 31332)	1,000	
Surface coating operations (NAICS 323113)	500	
Lumber saw mill (NAICS 321113)	500	
Printing operation (lithographic) (NAICS 323110)	500	
Asphalt hot mix plant (NAICS 324121)	500	
Surface coating operations (NAICS 332431)	1,000	
Surface coating operations (NAICS 332812)	500	
Natural gas compressor station (NAICS 486210)		$5.0
Solid waste landfill (NAICS 562212)		$10.0
Concrete batching plant (NAICS 421320)	100	
Grain elevator (NAICS 422510)	100	
Gasoline bulk plant (NAICS 422710)	100	
Gasoline station (storage tanks, refueling) (NAICS 4471)		$20.0
Dry cleaner (NAICS 812320)		$3.5
Automobile refinishing shop (NAICS 811121)		$5.0

[a] Criteria are defined in terms of numbers of employees or millions of dollars of sales.

Source: http://www.sba.gov/library/cfrs/13cfr121.pdf

Table 5-2. Share of Sector Companies that are Small or Large and Average Sales Data by Size of Company

Sector	Percentage of Companies		Typical Company Sales (10^6 $2000)	
	Small	Large	Small	Large
Stone quarrying and processing (NAICS 212312)	97.4%	2.6%	16.0	303.6
Stone quarrying and processing (NAICS 212313)	100.0%	0.0%	28.5	—
Sand and gravel processing	90.6%	9.4%	18.7	525.6
Surface coating operations (NAICS 31332)	97.1%	2.9%	13.4	471.2
Surface coating operations (NAICS 323113)	93.9%	6.1%	15.0	483.4
Lumber saw mill	91.9%	7.7%	18.4	1,125.6
Printing operation (lithographic)	96.2%	3.8%	12.4	277.7
Asphalt hot mix plant	90.6%	9.4%	19.7	1,369.2
Surface coating operations (NAICS 332431)	75.9%	24.1%	20.7	2,145.0
Surface coating operations (NAICS 332812)	95.7%	4.3%	11.4	355.3
Natural gas compressor station[a]	13.5%	97.3%	2.4	19.7
Solid waste landfill[a]	39.5%	61.1%	1.7	39.4
Concrete batching plant	88.9%	11.1%	9.0	92.5
Grain elevator	96.1%	3.9%	20.2	5,323.7
Gasoline bulk plant	85.9%	14.1%	40.5	292.0
Gasoline station (storage tanks, refueling)	46.5%	53.5%	10.1	954.7
Dry cleaner	50.0%	50.0%	0.7	44.2
Automobile refinishing shop	56.0%	44.0%	1.9	35.7
Industrial, commercial, institutional boilers: natural gas[b]	90.4%	9.6%	14.2	471.2
Industrial, commercial, institutional boilers: oil[b]	90.4%	9.6%	14.2	471.2

[a] For SICs 4922 and 4953, Ward's financial data represent total assets. Sales data were collected from *Reference*USA for those sectors. All other sectors' sales data were collected from *Ward's Business Directory*.

[b] For industrial, commercial, and institutional boilers, data are the median values for other affected industries.

Table 5-3. Estimated Number of New and Modified Minor Sources Owned by Small Businesses

Sector	New Minor Sources	Modified Minor Sources	Total Minor Sources
Sand and gravel processing	2	1	3
Lumber saw mill	3	1	4
Printing operation (lithographic)	15	6	21
Asphalt hot mix plant	0	0	0
Natural gas compressor station	1	0	1
Solid waste landfill	1	0	1
Concrete batching plant	2	1	3
Grain elevator	13	5	18
Gasoline bulk plant	12	4	16
Gasoline station (storage tanks, refueling)	77	30	107
Dry cleaner	12	4	16
Automobile refinishing shop	20	7	27
Stone quarrying and processing	2	1	3
Surface coating operations	2	1	3
Industrial, commercial or institutional boiler: natural gas fired	2	1	3
Industrial, commercial or institutional boiler: oil fired	0	0	0
Total	164	62	226

[a] Estimated by combining projected new sources from Table 2-15 with small business percentages from Table 5-2.

Note: Rows or columns may not sum to totals due to rounding.

5.3.3 Estimated Impacts on Small Companies Owning New Minor Source Facilities

EPA estimated the capital and annual costs of controlling emissions at affected new and modified minor source facilities. These costs are described in detail in Section 3 and Appendix B. Capital costs are annualized over a period of 15 years (the expected average lifetime of the capital equipment) at 7 percent interest rate (in compliance with guidance from the Office of Management and Budget to reflect private cost of capital), to compute the annualized cost of capital for typical facilities in each sector. The annualized capital costs are summed with the annual costs for each sector to compute the total annualized costs of controlling emissions in each sector. These control costs are combined with the estimated permitting, monitoring, recordkeeping and reporting costs, described in detail in Section 3 and Appendix B, to yield the total annualized costs of complying with the proposed rule for typical facilities in each sector. New minor source facilities are estimated to incur both incremental control costs and incremental administrative costs due to the proposed rule. EPA estimates that approximately half of the minor sources that invest in minor modifications will incur only permitting and MRR costs, while the rest will incur both control and permitting/MRR costs.

EPA estimates that the total national costs of the rule for new minor sources is $4.94 million per year. This includes both emissions control costs and administrative burden costs for the projected 288 affected new minor source facilities. Of this amount, EPA estimates that $2.63 million per year will be borne by the estimated 164 new minor sources estimated to be owned by small businesses. The remaining $2.31 million per year is estimated to be borne by large companies. EPA estimates that the total national costs of minor modifications to existing minor sources is $1.48 million per year, of which $0.97 will be incurred by small businesses. Overall, therefore, EPA estimates that small businesses owning new and modified minor sources will incur approximately $3.6 million per year due to the proposed rule.

In its screening analysis, EPA assessed the impacts on small businesses by comparing estimated facility costs to comply with the proposed Rule for typical facilities in each industry to estimated revenues for typical small companies owning the facilities. To evaluate the range of possible small business impacts, EPA first estimated the number of sources owned by small businesses, then computed how many affected small businesses would be affected using Census data on the average number of facilities per company for companies with fewer than 500 employees (a proxy for small business).

EPA employed criteria (EPA, 1999) widely used in conducting such screening analyses to assess the severity of potential impacts. Companies incurring costs less than 1 percent of sales are not expected to incur substantial impacts due to the rule. Companies incurring costs exceeding 3 percent of sales are estimated to incur potentially significant impacts. Companies with costs between 1 percent and 3 percent may or may not incur substantial impacts. Estimated costs for affected facilities in each industry are shown in Table 5-4. Estimated cost-to-sales ratios for new minor sources are shown in Table 5-5. Two sectors, natural gas compressors and solid waste landfills have estimated costs for new minor sources that exceed 1 percent of the sales of typical small businesses in those industries. For small businesses choosing to invest in new sources in these industries, significant cost impacts can not be ruled out. However, EPA projects only one new minor source of each type owned by a small business over the period 2004 to 2010. It should also be noted that large companies in several of the industries, because they are assumed to have a larger number of affected facilities, sometimes exhibit estimated CSRs exceeding those for small businesses in the industries. Thus, it appears that small businesses are not disproportionately affected.

Table 5-6 shows the number of affected small businesses and cost-to-sales ratios for small businesses projected to perform minor modifications to existing minor source facilities.

5.4 Characterizing Typical Small Businesses in Affected Major Source Industries

The proposed rule affects minor modifications to existing major sources and establishes nonattainment New Source Review for major sources in Indian Country. Currently, there are 83 major source facilities in Indian Country, 8 of which are located in nonattainment areas. EPA does not have information allowing it to determine which companies will choose to construct new facilities in Indian Country between 2004 and 2010. Instead, EPA is evaluating impacts on potentially affected companies based on the employment size and sales of typical small companies in the affected industries and assuming that new major sources will be similar to existing major sources. EPA collected data from financial databases (*Reference*USA, 2003 and *Hoover's Online Business Directory,* 2003) to characterize existing major sources. Based on these data, EPA identified small companies according to industry-specific criteria established by the SBA (shown in Table 5-7).

The total number of existing small businesses in Indian Country is identified in Table 5-8. In the case where no data for the affected company was available, EPA assumed that the company was a small business. For five facilities, (NAICS 221112 and 221119), the

Table 5-4. Estimated Costs of Compliance for Affected Minor Sources

Sector Description	Estimated Total Annualized Emissions Control Cost for Minor Source Facility	Estimated Permitting, Monitoring, Recordkeeping, and Reporting Cost	Estimated Total Annualized Cost of Compliance for Typical New Minor Source Facility
Sand and gravel processing	$57,900	$7,598	$65,498
Lumber saw mill	$48,100	$7,598	$55,698
Printing operation	$2,200	$7,598	$9,798
Asphalt hot mix plant	$50,000	$7,598	$57,598
Natural gas compressor	$25,970	$7,598	$58,498
Solid waste landfill	$26,460	$7,598	$60,198
Concrete batching plant	$48,400	$7,598	$55,998
Grain elevator	$47,100	$7,598	$54,698
Gasoline bulk plant	$3,530	$7,598	$11,128
Gasoline station storage tanks and refueling	$3,790	$7,598	$18,986
Dry cleaner	$3,250	$7,598	$10,848
Automobile refinishing shop	$11,000	$7,598	$18,598
Stone quarrying and processing[a] (212312)	$73,800	$7,598	$81,398
Stone quarrying and processing[a] (212313)	$73,800	$7,598	$81,398
Surface coating operations[a] (31332)	$66,000	$7,598	$73,598
Surface coating operations[a] (323113)	$66,000	$7,598	$73,598
Surface coating operations[a] (332431)	$66,000	$7,598	$73,598
Surface coating operations[a] (332812)	$66,000	$7,598	$73,598
Boilers (NG)	$6,151	$7,598	$13,749
Boilers (Oil)	$61,365	$7,598	$68,963

[a] Computer ratio of Estimated Total Annualized Cost of Compliance to Average Company Sales for Small and Large Companies, shown in Table 5-2.

[b] Several industry sectors are represented by more than one NAICS code (shown in parentheses). Costs for such sectors were compared to average sales for small and large companies in each associated NAICS code.

Table 5-5. Estimated Cost-to-Sales Ratios for Small Businesses Investing in New Minor Sources

	Small Businesses		Large Businesses	
Sector Description	**Estimated Number of Small Businesses**	**Cost-to-Sales Ratio**	**Estimated Number of Large Businesses**	**Cost-to-Sales Ratio**
Sand and gravel processing	2	0.4%	0	0.1%
Lumber saw mill	3	0.3%	0	0.0%
Printing operation	15	0.1%	0	0.0%
Asphalt hot mix plant	0	0.4%	1	0.0%
Natural gas compressor	1	1.7%	1	3.7%
Solid waste landfill	1	2.1%	1	1.1%
Concrete batching plant	2	0.7%	0	0.6%
Grain elevator	9	0.4%	0	0.0%
Gasoline bulk plant	10	0.0%	1	0.0%
Gasoline station storage tanks and refueling	59	0.2%	1	0.2%
Dry cleaner	11	0.9%	1	2.2%
Automobile refinishing shop	20	1.0%	2	0.5%
Stone quarrying and processing[a] (212312)	1	0.7%	0	0.3%
Stone quarrying and processing[a] (212313)	2	0.3%	0	0.0%
Surface coating operations[a] (31332)	2	0.6%	1	0.0%
Surface coating operations[a] (323113)	2	0.5%	1	0.0%
Surface coating operations[a] (332431)	2	0.4%	1	0.0%
Surface coating operations[a] (332812)	2	0.7%	1	0.1%
Boilers (NG)	2	0.1%	0	0.2%
Boilers (Oil)	0	0.5%	0	1.1%
Total	143		10	

[a] Several industry sectors are represented by more than one NAICS code (shown in parentheses). Costs for such sectors were compared to average sales for small companies in each associated NAICS code.

Table 5-6. Screening Analysis of Impacts due to Modifications of Minor Sources

Sector	Companies Owning Facilities that Incur TAC				Companies Owning Facilities that Incur only MRR Costs			
	Small Companies		Large Companies		Small Companies		Large Companies	
	Estimated Number of Companies	CSR	Estimated Number of Companies	CSR	Estimated Number of Companies	CSR	Estimated Number of Companies	CSR
Sand and gravel processing	1	0.4%	0	0.1%	0	0.0%	0	0.0%
Lumber saw mill	1	0.3%	0	0.0%	0	0.0%	0	0.0%
Printing operation	3	0.1%	0	0.0%	3	0.1%	0	0.0%
Asphalt hot mix plant	0	0.4%	0	0.0%	0	0.1%	0	0.0%
Natural gas compressor	0	1.7%	1	3.7%	0	0.4%	2	0.8%
Solid waste landfill	0	2.1%	0	1.1%	0	0.5%	1	0.3%
Concrete batching plant	1	0.7%	0	0.6%	0	0.1%	0	0.1%
Grain elevator		0.4%	0	0.0%	2	0.1%	0	0.0%
Gasoline bulk plant	1	0.0%	0	0.0%	2	0.0%	1	0.0%
Gasoline station storage tanks and refueling	11	0.2%	1	0.2%	11	0.1%	17	0.1%
Dry cleaner	2	0.9%	0	2.2%	2	0.6%	3	1.5%
Automobile refinishing shop	3	1.0%	0	0.5%	4	0.4%	3	0.2%
Stone quarrying and processing	1	0.7%	0	0.3%	0	0.1%	0	0.0%
Stone quarrying and processing	0	0.3%	0		0	0.0%	0	
Surface coating operations	1	0.6%	0	0.0%	0	0.1%	0	0.0%
Surface coating operations	0	0.5%	0	0.0%	0	0.1%	0	0.0%
Surface coating operations	0	0.4%	0	0.0%	0	0.0%	0	0.0%
Surface coating operations	0	0.7%	0	0.1%	0	0.1%	0	0.0%
Boilers (NG)	0	0.1%	0	0.2%	1	0.1%	0	0.1%
Boilers (Oil)	0	0.5%	0	1.1%	0	0.1%	0	0.1%
Total	**26**		**1**		**25**		**1**	

Table 5-7. Small Business Administration Criteria for Selected Major Source Industries

Sector	SBA Criteria[a]		
	Employment Criterion	Sales Criterion	Production Criterion[b]
Lumber manufacturer support (NAICS 5614)		$6.0	
Coal mining (NAICS 21211)	500		
Sand and gravel production (NAICS 21232)	500		
Furniture manufacture (NAICS 33712)	500		
Medical waste incinerator (NAICS 56221)		$10.5	
Repellent and fertilizer applications (NAICS 115112)		$6.0	
Natural gas plant (NAICS 211111)	500		
Oil and gas production (NAICS 211111)	500		
Fractionation of natural gas liquids (NAICS211112)	500		
Copper mining and processing (NAICS 212234)	500		
Power plant (coal-fired) (NAICS 221112)			4.0
Power plant (biomass fueled) (NAICS 221119)			4.0
Power plant (landfill gas-fired) (NAICS 221119)			4.0
Natural gas pipeline and collection (NAICS 221210)	500		
Lumber sawmill (NAICS 321113)	500		
Window and door molding manufacturer (NAICS 321911)	500		
Elemental phosphorus plant (NAICS 325188)	1,000		
Sulfuric acid plant (NAICS 325188)	1,000		
Secondary aluminum production and extrusion (NAICS 331314)	750		
Cobalt and tungsten recycling (NAICS 331492)	750		
Crude oil storage and distribution (NAICS 486110 or 422710)	1,500		
Natural gas compression station (NAICS 486210)		$6.0	
Landfill (NAICS 562212)		$10.5	

[a] Criteria are defined in terms of numbers of employees or millions of dollars of sales.

[b] Criteria are defined in terms total electric output in preceding year of less than 4 million megawatt hours.

Table 5-8. Estimated Number of Existing Major Sources Owned by Small Businesses

Sector	Number of Small Businesses	Percent of Total Facilities
Lumber manufacturer support (NAICS 5614)	1.0	100.0%
Coal mining (NAICS 21211)	0.0	0.0%
Sand and gravel production (NAICS 21232)	1.0	100.0%
Furniture manufacture (NAICS 33712)	1.0	100.0%
Medical waste incinerator (NAICS 56221)	0.0	0.0%
Repellent and fertilizer applications (NAICS 115112)	1.0	100.0%
Natural gas plant (NAICS 211111)	2.0	33.3%
Oil and gas production (NAICS 211111)	0.0	0.0%
Fractionation of natural gas liquids (NAICS211112)	0.0	0.0%
Copper mining and processing (NAICS 212234)	0.0	0.0%
Power plant (coal-fired) (NAICS 221112)[a]	—	—
Power plant (biomass fueled) (NAICS 221119)[a]	—	—
Power plant (landfill gas-fired) (NAICS 221119)[a]	—	—
Natural gas pipeline and collection (NAICS 221210)	3.0	100.0%
Lumber sawmill (NAICS 321113)	4.0	80.0%
Window and door molding manufacturer (NAICS 321911)	1.0	100.0%
Elemental phosphorus plant (NAICS 325188)	1.0	100.0%
Sulfuric acid plant (NAICS 325188)	1.0	100.0%
Secondary aluminum production and extrusion (NAICS 331314)	1.0	100.0%
Cobalt and tungsten recycling (NAICS 331492)	1.0	100.0%
Crude oil storage and distribution (NAICS 486110 or 422710)	1.0	100.0%
Natural gas compression station (NAICS 486210)	13.0	28.0%
Landfill (NAICS 562212)	3.0	100.0%
TOTAL	35	44.5%

[a] Information on electric production was not available for the five facilities in this sector. Therefore no determination could be made as to their status as a small business.

SBA criterion could not be applied because total electric generation during the preceding fiscal year was not known. Therefore, of the 78 facilities for which owner company size could be assessed, (in attainment and nonattainment areas), approximately 45 percent qualify as small businesses.

5.4.1 Estimated Impacts on Small Companies Owning New Major Source Facilities

EPA's estimated number of new major sources owned by small businesses is based on the projected number of new major sources identified in Section 2. EPA projects that only one new major source and one major modification to an existing major source will occur in nonattainment areas in Indian Country during the period 2004 through 2010. Because fewer than half of the existing major sources are owned by small businesses, EPA assumes that neither of these will be owned by a small business. In addition, EPA does not expect either new major sources or major modifications of existing major sources to result in incremental permitting or control costs compared to the baseline. For these reasons, EPA does not expect that either the creation of a new major source nor a major modification of an existing major source in a nonattainment area in Indian Country will have adverse economic impacts on small business.

In addition to one new major source and one major modification of an existing major source in a nonattainment area in Indian Country, EPA also projects that one existing major source per year will choose to make a minor modification to its facility that results in greater than *de minimus* increases in emissions. Major sources performing a minor modification will be required to get a minor source NSR permit, at a cost of $7,598 per modification. Of the seven such minor modifications to major sources projected over the period 2004 through 2010, EPA assumes that three will occur at facilities owned by small companies. Because EPA does not know which of the 35 existing major source facilities owned by small businesses will choose to make minor modifications, the Agency analyzes small business impacts by comparing the cost of obtaining a minor NSR permit with sales for the 24 small businesses owning major source facilities in Indian Country for which sales data are available. The cost-to-sales ratios range from 0.004 percent to 0.43 percent, with a median value of 0.20 percent. Based on the estimate of only seven existing major sources performing a minor modification during the period, and estimated costs that represent at most 0.43 percent of parent company sales for existing small companies, EPA does not believe that the rule's provisions will result in adverse economic impacts to small businesses owning major source facilities and initiating a minor modification to their facilities.

5.5 Summary of Screening Analysis Results

Table 5-9 summarizes costs and cost to sales ratios for small businesses owning different types of affected sources. Overall, EPA projects that 164 new minor sources owned by small businesses, 62 existing minor sources owned by small business making minor modifications, and three major sources owned by small businesses making minor modifications will incur approximately $3.7 million in control and administrative costs due to the rule. Small businesses owning new major source facilities or existing major source facilities making major modifications or choosing to become synthetic minor sources are projected to incur no costs due to the proposed rule. Small businesses owning these types of affected sources are instead expected to realize cost savings.

Table 5-9. Summary of Costs and Affected New and Modified Sources Owned by Small Businesses

Source Type	Estimated Number Owned by Small Businesses	Estimated Number of Small Businesses	Estimated Total Annualized Costs
New minor sources	164	143	$2.68
Modified minor sources	62	51	$0.97
Minor modifications to major sources	3	3	$0.02
New major sources	At most 1	0	$0 or cost savings
Major modification to major source	At most 1	0	$0 or cost savings
Synthetic minor source	Unknown	Unknown	Cost savings
Total	At most 231	197	$3.67

Among the source types projected to incur costs (new minor sources, modifications to minor sources, and minor modifications to existing major sources), costs for small businesses are generally less than 1 percent of typical parent company sales in affected sectors. Two small businesses that own projected new minor sources, a landfill and a natural gas compressor station, and three small businesses that own existing automobile refinishing shops projected to make minor modifications may incur costs at or above 1 percent of sales.

5.6 Conclusions

Based on its analysis, EPA certifies that the proposed rule is not likely to result in significant economic impacts for a substantial number of small companies. This is true

because the number of small companies affected in most industries is expected to be small, and because the costs for most industries are expected to be low. Small businesses investing in new minor sources in two industries, Natural Gas Compressor Stations and Landfills, may incur costs exceeding 1 percent of their sales to comply with the proposed rule. Similarly, three small businesses projected to make minor modifications to existing automobile refinishing facilities are projected to incur costs that are approximately 1 percent of typical small company sales in that sector. All other small companies projected to invest in new or modified minor or major sources in Indian Country are projected to incur very low costs or experience cost savings. Because only five small companies are estimated to experience costs exceeding 1 percent of sales and no small company is projected to experience costs exceeding 3 percent of sales, EPA does not believe that a substantial number of small companies will experience significant economic impacts.

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APPENDIX A

STATES AND TRIBES IN EACH GEOGRAPHIC QUADRANT

East Quadrant:

Includes Connecticut, Delaware, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia.

Total number of states: 17
Total number of tribes: 19
Number of existing inventories: 0

Tribes	States
Mashantucket Pequot Tribe of Connecticut	CT
Mohegan Indian Tribe of Connecticut	CT
Seminole Tribe of Florida, Dania, Big Cypress, Brighton, Hollywood and Tampa Reservations	FL
Miccosukee Tribe of Indians of Florida	FL
Wampanoag Tribe of Gay Head (Aquinnah) of Massachusetts	MA
Passamaquoddy Tribe of Maine	ME
Penobscot Tribe of Maine	ME
Houlton Band of Maliseet Indians of Maine	ME
Aroostook Band of Micmac Indians of Maine	ME
Eastern Band of Cherokee Indians of North Carolina	NC
Onondaga Nation of New York	NY
St. Regis Band of Mohawk Indians of New York	NY
Tonawanda Band of Seneca Indians of New York	NY
Tuscarora Nation of New York	NY
Oneida Nation of New York	NY
Seneca Nation of New York	NY
Cayuga Nation of New York	NY
Narragansett Indian Tribe of Rhode Island	RI
Catawba Indian Nation (aka Catawba Tribe of South Carolina)	SC

East Central Quadrant:

Includes Alabama, Arkansas, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Mississippi, Ohio, Tennessee, and Wisconsin.

Total number of states: 14
Total number of tribes: 33
Number of existing inventories: 1

Tribes	States
Poarch Band of Creek Indians of Alabama	AL
Sac and Fox Tribe of the Mississippi in Iowa	IA
Jena Band of Choctaw Indians, Louisiana	LA
Tunica-Biloxi Indian Tribe of Louisiana	LA
Chitimacha Tribe of Louisiana	LA
Coushatta Tribe of Louisiana	LA
Sault Ste. Marie Tribe of Chippewa Indians of Michigan	MI
Bay Mills Indian Community of the Sault Ste. Marie Band of Chippewa Indians, Bay Mills Reservation, Michigan	MI
Hannahville Indian Community of Wisconsin Potawatomie Indians of Michigan	MI
Saginaw Chippewa Indian Tribe of Michigan, Isabella Reservation	MI
Keweenaw Bay Indian Community of L'Anse and Ontonagon Bands of Chippewa Indians of the L'Anse Reservation, Michigan	MI
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan	MI
Pokagon Band of Potawatomi Indians of Michigan	MI
Huron Potawatomi, Inc., Michigan	MI
Little River Band of Ottawa Indians of Michigan	MI
Little Traverse Bay Bands of Odawa Indians of Michigan	MI
Minnesota Chippewa Tribe, Minnesota (Six component reservations: Bois Forte Band (Nett Lake); Fond du Lac Band; Grand Portage Band; Leech Lake Band; Mille Lacs Band; White Earth Band)	MN
Upper Sioux Indian Community of the Upper Sioux Reservation, Minnesota	MN
Prairie Island Indian Community of Minnesota Mdewakanton Sioux Indians of the Prairie Island Reservation, Minnesota	MN
Red Lake Band of Chippewa Indians of the Red Lake Reservation, Minnesota	MN
Shakopee Mdewakanton Sioux Community of Minnesota (Prior Lake)	MN
Lower Sioux Indian Community of Minnesota Mdewakanton Sioux Indians of the Lower Sioux Reservation in Minnesota	MN
Mississippi Band of Choctaw Indians, Mississippi	MS

Tribes	States
Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin	WI
Lac Courte Oreilles Band of Lake Superior Chippewa Indians of the Lac Courte Oreilles Reservation of Wisconsin	WI
Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin	WI
Oneida Tribe of Wisconsin	WI
Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin	WI
St. Croix Chippewa Indians of Wisconsin, St. Croix Reservation	WI
Sokaogon Chippewa Community of the Mole Lake Band of Chippewa Indians, Wisconsin	WI
Stockbridge-Munsee Community of Mohican Indians of Wisconsin	WI
Ho-Chunk Nation of Wisconsin (formerly known as the Wisconsin Winnebago Tribe)	WI
Menominee Indian Tribe of Wisconsin	WI

West Central Quadrant:

Includes Arizona, Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Utah

Total Number of States: 10
Total Number of Tribes: 105
Number of existing inventories: 4

Tribes	States
Yavapai-Apache Nation of the Camp Verde Indian Reservation, Arizona	AZ
Cocopah Tribe of Arizona	AZ
Havasupai Tribe of the Havasupai Reservation, Arizona	AZ
Hualapai Indian Tribe of the Hualapai Indian Reservation, Arizona	AZ
White Mountain Apache Tribe of the Fort Apache Reservation, Arizona	AZ
Hopi Tribe of Arizona	AZ
Tohono O'odham Nation of Arizona	AZ
Ak Chin Indian Community of the Maricopa (Ak Chin) Indian Reservation, Arizona	AZ
Fort McDowell Mohave-Apache Community of the Fort McDowell Indian Reservation, Arizona	AZ
Gila River Indian Community of the Gila River Indian Reservation, Arizona	AZ
Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona	AZ
San Carlos Apache Tribe of the San Carlos Reservation, Arizona	AZ

Tribes	States
Kaibab Band of Paiute Indians of the Kaibab Indian Reservation, Arizona	AZ
Yavapai-Prescott Tribe of the Yavapai Reservation, Arizona	AZ
Pascua Yaqui Tribe of Arizona	AZ
Tonto Apache Tribe of Arizona	AZ
San Juan Southern Paiute Tribe of Arizona	AZ
Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado	CO
Iowa Tribe of Kansas and Nebraska	KS/NE
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	KS
Prairie Band of Potawatomi Indians, Kansas	KS
Sac and Fox Nation of Missouri in Kansas and Nebraska	KS/NE
Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota	ND
Spirit Lake Tribe, North Dakota (formerly known as the Devils Lake Sioux Tribe)	ND
Turtle Mountain Band of Chippewa Indians of North Dakota	ND
Standing Rock Sioux Tribe of North and South Dakota	ND/SD
Omaha Tribe of Nebraska	NE
Ponca Tribe of Nebraska	NE
Santee Sioux Tribe of the Santee Reservation of Nebraska	NE
Winnebago Tribe of Nebraska	NE
Jicarilla Apache Tribe of the Jicarilla Apache Indian Reservation, New Mexico	NM
Mescalero Apache Tribe of the Mescalero Reservation, New Mexico	NM
Acoma, Pueblo of New Mexico	NM
Cochiti, New Mexico, Pueblo of	NM
Isleta, New Mexico, Pueblo of	NM
Jemez, New Mexico Pueblo of	NM
Laguna, New Mexico, Pueblo of	NM
Nambe, New Mexico, Pueblo of	NM
Picuris, New Mexico, Pueblo of	NM
Pojoaque, New Mexico, Pueblo of	NM
Sandia, New Mexico, Pueblo of	NM
San Felipe, New Mexico, Pueblo of	NM
San Ildefonso, New Mexico, Pueblo of	NM
San Juan, New Mexico, Pueblo of	NM
Santa Ana, New Mexico, Pueblo of	NM

Tribes	States
Santa Clara, New Mexico, Pueblo of	NM
Santo Domingo, New Mexico, Pueblo of	NM
Taos, New Mexico, Pueblo of	NM
Tesuque, New Mexico, Pueblo of	NM
Zia, New Mexico, Pueblo of	NM
Zuni Tribe of the Zuni Reservation, New Mexico	NM
Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota	SD
Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota	SD
Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota	SD
Oglala Sioux Tribe of the Pine Ridge Reservation, South Dakota	SD
Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota	SD
Yankton Sioux Tribe of South Dakota	SD
Sisseton-Wahpeton Sioux Tribe of the Lake Traverse Reservation, South Dakota	SD
Ysleta Del Sur Pueblo of Texas	TX
Kickapoo Traditional Tribe of Texas	TX
Alabama-Coushatta Tribes of Texas	TX
Northwestern Band of Shoshoni Nation of Utah (Washakie)	UT
Skull Valley Band of Goshute Indians of Utah	UT
Ute Indian Tribe of the Uintah and Ouray Reservation, Utah	UT
Paiute Indian Tribe of Utah	UT
Ute Mountain Tribe of the Ute Mountain Reservation, Colorado, New Mexico and Utah	CO/NM/ UT
Navajo Nation of Arizona, New Mexico and Utah	AZ/NM/ UT
Creek Nation (Alabama-Quassarte Tribal Town)	OK
Creek Nation (Kialegee Tribal Town)	OK
Creek Nation (Thlopthlocco Tribal Town)	OK
United Kleetoowah Band of Cherokee	OK
Cherokee Nation	OK
Chickasaw Nation	OK
Choctaw Nation	OK
Muscogee Creek	OK
Seminole Nation	OK
Quapaw	OK

Tribes	States
Eastern Shawnee	OK
Ottawa	OK
Seneca-Cayuga	OK
Wyandotte	OK
Miami	OK
Peoria	OK
Modoc	OK
Osage	OK
Cheyenne and Arapaho	OK
Kiowa	OK
Fort Sill Apache	OK
Wichita and Affiliated Tribes	OK
Caddo	OK
Delaware	OK
Comanche	OK
Apache	OK
Kaw Nation	OK
Otoe Misouria	OK
Pawnee	OK
Ponca	OK
Tonkawa	OK
Delaware	OK
Absentee Shawnee	OK
Citizen Potawatomi Nation	OK
Iowa	OK
Kickapoo	OK
Sac and Fox Nation	OK

West Quadrant:

Includes California, Idaho, Montana, Nevada, Oregon, Washington, and Wyoming

Total number of states: 7
Total number of tribes: 165
Total number of inventories: 3

Tribes	States
Alturas Indian Rancheria, California	CA
Scotts Valley Band of Pomo Indians of California	CA
Berry Creek Rancheria of Maidu Indians of California	CA
Big Sandy Rancheria of Mono Indians of California	CA
Big Valley Rancheria of Pomo and Pit River Indians of California	CA
Buena Vista Rancheria of Me-Wuk Indians of California	CA
Lytton Rancheria of California	CA
Cloverdale Rancheria of Pomo Indians of California	CA
Cold Springs Rancheria of Mono Indians of California	CA
Cachil DeHe Band of Wintun Indians of the Colusa Indian Community of the Colusa Rancheria, California	CA
Cortina Indian Rancheria of Wintun Indians of California	CA
Dry Creek Rancheria of Pomo Indians of California	CA
Robinson Rancheria of Pomo Indians of California	CA
Enterprise Rancheria of Maidu Indians of California	CA
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	CA
Grindstone Indian Rancheria of Wintun-Wailaki Indians of California	CA
Utu Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation, California	CA
Hopland Band of Pomo Indians of the Hopland Rancheria, California	CA
Jackson Rancheria of Me-Wuk Indians of California	CA
Chicken Ranch Rancheria of Me-Wuk Indians of California	CA
Cahto Indian Tribe of the Laytonville Rancheria, California	CA
Fort Independence Indian Community of Paiute Indians of the Fort Independence Reservation, California	CA
Manchester Band of Pomo Indians of the Manchester-Point Arena Rancheria, California	CA
Middletown Rancheria of Pomo Indians of California	CA
Ione Band of Miwok Indians of California	CA
Big Pine Band of Owens Valley Paiute Shoshone Indians of the Big Pine Reservation,	CA

Tribes	States
California	
Mechoopda Indian Tribe of Chico Rancheria, California	CA
Northfork Rancheria of Mono Indians of California	CA
Paskenta Band of Nomlaki Indians of California	CA
Picayune Rancheria of Chukchansi Indians of California	CA
Pinoleville Rancheria of Pomo Indians of California	CA
Pit River Tribe, California (includes Big Bend, Lookout, Montgomery Creek and Roaring Creek Rancherias and XL Ranch)	CA
Potter Valley Rancheria of Pomo Indians of California	CA
Redding Rancheria, California	CA
Redwood Valley Rancheria of Pomo Indians of California	CA
Round Valley Indian Tribes of the Round Valley Reservation, California (formerly known as the Covelo Indian Community)	CA
Rumsey Indian Rancheria of Wintun Indians of California	CA
Santa Rosa Indian Community of the Santa Rosa Rancheria, California	CA
Greenville Rancheria of Maidu Indians of California	CA
Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California	CA
Kashia Band of Pomo Indians of the Stewarts Point Rancheria, California	CA
Paiute-Shoshone Indians of the Bishop Community of the Bishop Colony, California	CA
Susanville Indian Rancheria, California	CA
Table Mountain Rancheria of California	CA
Tule River Indian Tribe of the Tule River Reservation, California	CA
Big Lagoon Rancheria, California	CA
Karuk Tribe of California	CA
Resighini Rancheria, California (formerly known as the Coast Indian Community of Yurok Indians of the Resighini Rancheria)	CA
Blue Lake Rancheria, California	CA
Elk Valley Rancheria, California	CA
Bear River Band of the Rohnerville Rancheria, California	CA
Hoopa Valley Tribe, California	CA
Quartz Valley Indian Community of the Quartz Valley Reservation of California	CA
Smith River Rancheria, California	CA
Table Bluff Reservation - Wiyot Tribe, California	CA

Tribes	States
Cher-Ae Heights Indian Community of the Trinidad Rancheria, California	CA
Augustine Band of Cahuilla Mission Indians of the Augustine Reservation, California	CA
Cabazon Band of Cahuilla Mission Indians of the Cabazon Reservation, California	CA
Cahuilla Band of Mission Indians of the Cahuilla Reservation, California	CA
Campo Band of Diegueno Mission Indians of the Campo Indian Reservation, California	CA
Capitan Grande Band of Diegueno Mission Indians of California	CA
Barona Group of Capitan Grande Band of Mission Indians of the Barona Reservation, California	CA
Cuyapaipe Community of Diegueno Mission Indians of the Cuyapaipe Reservation, California	CA
Inaja Band of Diegueno Mission Indians of the Inaja and Cosmit Reservation, California	CA
Jamul Indian Village of California	CA
La Jolla Band of Luiseno Mission Indians of the La Jolla Reservation, California	CA
La Posta Band of Diegueno Mission Indians of the La Posta Indian Reservation, California	CA
Los Coyotes Band of Cahuilla Mission Indians of the Los Coyotes Reservation, California	CA
Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation, California	CA
Mesa Grande Band of Diegueno Mission Indians of the Mesa Grande Reservation, California	CA
Morongo Band of Cahuilla Mission Indians of the Morongo Reservation, California	CA
Pala Band of Luiseno Mission Indians of the Pala Reservation, California	CA
Agua Caliente Band of Cahuilla Indians of the Agua Caliente Indian Reservation, California	CA
Pauma Band of Luiseno Mission Indians of the Pauma and Yuima Reservation, California	CA
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, California	CA
Rincon Band of Luiseno Mission Indians of the Rincon Reservation, California	CA
San Manual Band of Serrano Mission Indians of the San Manual Reservation, California	CA
San Pasqual Band of Diegueno Mission Indians of California	CA
Santa Rosa Band of Cahuilla Mission Indians of the Santa Rosa Reservation, California	CA
Santa Ynez Band of Chumash Mission Indians of the Santa Ynez Reservation, California	CA
Santa Ysabel Band of Diegueno Mission Indians of the Santa Ysabel Reservation,	CA

Tribes	States
California	
Soboba Band of Luiseno Mission Indians of the Soboba Reservation, California	CA
Sycuan Band of Diegueno Mission Indians of California	CA
Torres-Martinez Band of Cahuilla Mission Indians of California	CA
Ramona Band or Village of Cahuilla Mission Indians of California	CA
Twenty-Nine Palms Band of Luiseno Mission Indians of California	CA
Viejas (Baron Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation, California	CA
Cedarville Rancheria, California	CA
Paiute-Shoshone Indians of the Lone Pine Community of the Lone Pine Reservation, California	CA
Sheep Ranch Rancheria of Me-Wuk Indians of California	CA
Sherwood Valley Rancheria of Pomo Indians of California	CA
Elem Indian Colony of Pomo Indians of the Sulphur Bank Rancheria, California	CA
Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California	CA
Upper Lake Band of Pomo Indians of Upper Lake Rancheria of California	CA
United Auburn Indian Community of the Auburn Rancheria of California	CA
Coyote Valley Band of Pomo Indians of California	CA
Bridgeport Paiute Indian Colony of California	CA
Death Valley Timbi-Sha Shoshone Band of California	CA
Chemehuevi Indian Tribe of the Chemehuevi Reservation, California	CA
Shoshone-Bannock Tribes of the Fort Hall Reservation of Idaho	ID
Coeur D'Alene Tribe of the Coeur D'Alene Reservation, Idaho	ID
Nez Perce Tribe of Idaho	ID
Kootenai Tribe of Idaho	ID
Blackfeet Tribe of the Blackfeet Indian Reservation of Montana	MT
Crow Tribe of Montana	MT
Confederated Salish and Kootenai Tribes of the Flathead Reservation, Montana	MT
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	MT
Chippewa-Cree Indians of the Rocky Boy's Reservation, Montana	MT
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, Montana	MT
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana	MT
Te-Moak Tribes of Western Shoshone Indians of Nevada (Four constituent bands: Battle Mountain Band; Elko Band; South Fork Band and Wells Band)	NV

Tribes	States
Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada	NV
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada	NV
Ely Shoshone Tribe of Nevada	NV
Paiute-Shoshone Tribe of the Fallon Reservation and Colony, Nevada	NV
Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony, Nevada	NV
Lovelock Paiute Tribe of the Lovelock Indian Colony, Nevada	NV
Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Nevada	NV
Pyramid Lake Paiute Tribe of the Pyramid Lake Reservation, Nevada	NV
Reno-Sparks Indian Colony, Nevada	NV
Summit Lake Paiute Tribe of Nevada	NV
Walker River Paiute Tribe of the Walker River Reservation, Nevada	NV
Winnemucca Indian Colony of Nevada	NV
Yerington Paiute Tribe of the Yerington Colony and Campbell Ranch, Nevada	NV
Yomba Shoshone Tribe of the Yomba Reservation, Nevada	NV
Washoe Tribe of Nevada and California (Carson Colony, Dresslerville Colony, Woodfords Community, Stewart Community, and Washoe Ranches)	NV/CA
Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon	NV/OR
Klamath Indian Tribe of Oregon	OR
Confederated Tribes of the Grand Ronde Community of Oregon	OR
Confederated Tribes of the Siletz Reservation, Oregon	OR
Confederated Tribes of the Umatilla Reservation, Oregon	OR
Burns Paiute Tribe of the Burns Paiute Indian Colony of Oregon	OR
Confederated Tribes of the Warm Springs Reservation of Oregon	OR
Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians of Oregon	OR
Cow Creek Band of Umpqua Indians of Oregon	OR
Coquille Tribe of Oregon	OR
Confederated Tribes of the Colville Reservation, Washington	WA
Spokane Tribe of the Spokane Reservation, Washington	WA
Kalispel Indian Community of the Kalispel Reservation, Washington	WA
Confederated Tribes of the Chehalis Reservation, Washington	WA
Hoh Indian Tribe of the Hoh Indian Reservation, Washington	WA
Lummi Tribe of the Lummi Reservation, Washington	WA
Makah Indian Tribe of the Makah Indian Reservation, Washington	WA

Tribes	States
Muckleshoot Indian Tribe of the Muckleshoot Reservation, Washington	WA
Nisqually Indian Tribe of the Nisqually Reservation, Washington	WA
Nooksack Indian Tribe of Washington	WA
Port Gamble Indian Community of the Port Gamble Reservation, Washington	WA
Suquamish Indian Tribe of the Port Madison Reservation, Washington	WA
Puyallup Tribe of the Puyallup Reservation, Washington	WA
Quileute Tribe of the Quileute Reservation, Washington	WA
Quinault Tribe of the Quinault Reservation, Washington	WA
Shoalwater Bay Tribe of the Shoalwater Bay Indian Reservation, Washington	WA
Sauk-Suiattle Indian Tribe of Washington	WA
Skokomish Indian Tribe of the Skokomish Reservation, Washington	WA
Squaxin Island Tribe of the Squaxin Island Reservation, Washington	WA
Swinomish Indians of the Swinomish Reservation, Washington	WA
Tulalip Tribes of the Tulalip Reservation, Washington	WA
Confederated Tribes and Bands of the Yakama Indian Nation of the Yakama Reservation, Washington	WA
Lower Elwha Tribal Community of the Lower Elwha Reservation, Washington	WA
Jamestown S'Klallam Tribe of Washington	WA
Upper Skagit Indian Tribe of Washington	WA
Samish Indian Tribe, Washington	WA
Stillaguamish Tribe of Washington	WA
Arapahoe Tribe of the Wind River Reservation, Wyoming	WY
Shoshone Tribe of the Wind River Reservation, Wyoming	WY

Tribes with Indian Country in more than one Quadrant:

Tribe	States
Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California	AZ, CA
Fort Mojave Indian Tribe of Arizona, California, and Nevada	AZ, CA, NV
Quechan Tribe of the Fort Yuma Indian Reservation, Arizona and California	AZ, CA
Confederated Tribes of the Goshute Reservation, Nevada and Utah	NV, UT

APPENDIX B

EXISTING PART 71 SOURCES IN INDIAN COUNTRY (AS OF AUGUST 15, 2002)

Table B-1. Existing Part 71 Sources in Indian Country (as of August 15, 2002)

Company Name, EPA Region	Facility Name (type)	NAICS Code	Tribal Identifier	Location
Region 2				
Philadelphia Furniture	Philadelphia Furniture (furniture manufacturer)	33712	Seneca Nations	Salamanca, NY
Region 4				
Calumet Florida, Inc.	Devil's Garden Facility (crude oil storage and distribution)	486110	Miccosukee IR	Broward Co., FL
Region 5				
Great Lakes Gas Transmission Company	Deer River Compressor Station No. 4 (SIC 4922)	486210	Leech Lake IR	Deer River, MN
Great Lakes Gas Transmission Company	Cloquet Compressor Station No. 5 (SIC 4922)	486210	Fond du Lac IR	Cloquet, MN
Region 6				
El Paso Natural Gas Company	Laguna Compressor Station	486210	Laguna IR	Laguna, NM
El Paso Natural Gas Company	Lindrith Compressor Station	486210	Jicarilla Apache IR	NM
Transwestern Pipeline Company	Transwestern Compressor Station	486210	Laguna IR	Laguna, NM
Williams Field Service	Los Mestenios Compressor Station	486210	Jicarilla Apache IR	NM
Region 8				
Amoco Production Company	Florida River Compression Facility	486210	Southern Ute IR	CO
BP America Production Company	Wolf Point Compressor Facility	486210	Southern Ute IR	CO
BP Amoco, Inc.	Four Queens Central Facility	486210	Southern Ute IR	CO
BP Amoco, Inc.	Salvador I/II Central Facility	486210	Southern Ute IR	CO
Colorado Interstate Gas Company	Natural Buttes Compressor Station	486210	Uintah and Ouray IR	UT
Conoco	Sunnyside Compressor Station	486210	Southern Ute IR	CO
Coyote Gas Treating, L.L.C (Formerly El Paso Natural Gas)	Coyote Gulch Treating Plant	211111	Southern Ute IR	CO
Deseret Generation and Transmission Co-operative	Bonanza Power Plant	221112	Uintah and Ouray IR	UT
Devon SFS Operating, Inc.	Riverton Dome Gas Plant	211111	Wind River IR	WY
El Paso Natural Gas Company	Bondad Compressor Station	486210	Southern Ute IR	CO
Koch Sulfur Products Company	Riverton, Wyoming Facility	325188	Wind River IR	WY
Northern Border Pipeline Company	Compressor Station #2	486210	Fort Peck IR	MT

(continued)

Table B-1. Existing Part 71 Sources in Indian Country (as of August 15, 2002) (continued)

Company Name, EPA Region	Facility Name (type)	NAICS Code	Tribal Identifier	Location
Northwest Pipeline	La Plata B Compressor Station	486210	Southern Ute IR	CO
OMG Americas	Apex Operations	331492	Paiute IR	UT
Plum Creek Northwest Lumber, Inc.	Pablo Saw Mill Facility	321113	Flathead IR	MT
Public Service Company	Tiffany Compressor Station	486210	Southern Ute IR	CO
Questar Pipeline Company	Fidlar Compressor Station	486210	Uintah and Ouray IR	UT
Red Cedar Gathering Company	Antler Plant	221210	Southern Ute IR	CO
Red Cedar Gathering Company	Arkansas Loop Plant	221210	Southern Ute IR	CO
Red Cedar Gathering Company	Bondad Compressor Station	486210	Southern Ute IR	CO
Red Cedar Gathering Company	Capote Compressor Station	486210	Southern Ute IR	CO
Red Cedar Gathering Company	Diamond Back Compressor Station	486210	Southern Ute IR	CO
Red Cedar Gathering Company	Outlaw Compressor Station	486210	Southern Ute IR	CO
Red Cedar Gathering Company	Sidewinder Compressor Station	486210	Southern Ute IR	CO
Red Willow Universal Compression	Coyote Gulch Compressor Station	486210	Southern Ute IR	CO
SEI Gathering and Processing Company	Wonsits Compressor Station	486210	Uintah and Ouray IR	UT
SG Interests, Ltd	Argenta CDP Compressor Facility	486210	Southern Ute IR	CO
SG Interests, Ltd	South Ignacio Central Delivery	221210	Southern Ute IR	CO
Shenandoah Energy, Inc.	Red Wash 24B Gas Plant	211111	Uintah and Ouray IR	UT
Transwestern Pipeline Company	La Plata A Compressor Station	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #2	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #4	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #6	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #5	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #7	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #9	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #1	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #7B	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #6B	486210	Southern Ute IR	CO
Vastar Resources, Inc.	Treating Site #8	486210	Southern Ute IR	CO
Williams Field Services Company	PLA-9 Central Delivery Point	486210	Southern Ute IR	CO
Williams Field Services Company	Ignacio Plant	211111	Southern Ute IR	CO
Williston Basin Interstate Pipeline Company	Hardin Compressor Station	486210	Crow IR	MT
Region 9				
Arizona Public Service Co.	Four Corners Steam Electric Station	221112	Navajo Nation	Near Fuitland, NM

(continued)

Table B-1. Existing Part 71 Sources in Indian Country (as of August 15, 2002) (continued)

Company Name, EPA Region	Facility Name (type)	NAICS Code	Tribal Identifier	Location
ASARCO	Mission Mine Complex (copper mining and processing)	212234	Tohono O'odham Nation	Sahuarita, AZ
Colmac Energy, Inc.	Mecca Plant	221119	Cabazon Band of Mission Indians	Mecca, CA
Conoco, Inc.	Wingate Fractionating Plant (fractionation of natural gas liquids)	211112	Navajo Nation	Near Gallup, NM
El Paso Natural Gas Co.	Dilkon Compressor Station	486210	Navajo Nation	Dilkon, AZ
El Paso Natural Gas Co.	Leupp Compressor Station	486210	Navajo Nation	Near Leupp Trading Post, AZ
El Paso Natural Gas Co.	Navajo Compressor Station	486210	Navajo Nation	Near Chambers, AZ
El Paso Natural Gas Co.	Window Rock Compressor Station		Navajo Nation	AZ, near Gallup, NM
El Paso Natural Gas Co.	Gallup Compressor Station	486210	Navajo Nation	Near Gallup, NM
El Paso Natural Gas Co.	White Rock Compressor Station	486210	Navajo Nation	Near Newcomb, NM
Exxon-Mobil	McElmo Gas Plant and Oilfield	211111	Navajo Nation	Aneth, UT
Fort Apache Timber Co.	Fort Apache Timber Co.	321113	White Mountain Apache	Whiteriver, AZ
Peabody Western Coal Co.	Black Mesa Complex	21211	Navajo Nation and Hopi Tribe	Near Kayenta, AZ
Pimalco	Pimalco (secondary aluminum production and extrusion)	331314	Gila River Indian Community	Chandler, AZ
Salt River Landfill	Salt River Landfill	562212	Salt River Pima-Maricopa Indian Community	Scottsdale, AZ
Salt River Project	Tri-Cities Landfill Energy Facility	221119	Salt River Pima-Maricopa Indian Community	Scottsdale, AZ
Salt River Project	Tri-Cities Landfill	562212	Salt River Pima-Maricopa Indian Community	Scottsdale, AZ
Salt River Project	Navajo Generating Station	221112	Navajo Nation	Near Page, AZ
Salt River Sand and Rock	Salt River Sand and Rock	21232	Salt River Pima-Maricopa Indian Community	Phoenix, AZ
Stericycle, Inc.	Stericycle (medical waste incinerator)	56221	Gila River Indian Community	Chandler, AZ
Texaco	Aneth Gas Plant	211111	Navajo Nation	Aneth and Montezuma Creek, UT

(continued)

Table B-1. Existing Part 71 Sources in Indian Country (as of August 15, 2002) (continued)

Company Name, EPA Region	Facility Name (type)	NAICS Code	Tribal Identifier	Location
Texaco	Aneth Unit	211111	Navajo Nation	Aneth and Montezuma Creek, UT
Transwestern Pipeline Co.	Klagetoh Compressor Station	486210	Navajo Nation	Near Klagetoh, AZ
Transwestern Pipeline Co.	Leupp Compressor Station	486210	Navajo Nation	Near Leupp, AZ
Tri-Cities Landfill	Tri-Cities Landfill	562212	Salt River Pima-Maricopa Indian Community	Scottsdale, AZ
Region 10				
Clearwater Forest Industries, Inc.	Clearwater Forest Industries (lumbermill)	321113	Nez Perce	Kooskia, ID
Empire Lumber Company	Kamiah Sawmill	321113	Nez Perce	Kamiah, ID
FMC	FMC (Elemental phosphorus plant)	325188	Shoshone-Bannock Tribes, Fort Hall IR	Pocatello, ID
Jeld Wen [Fibre] of WA	Jeld Wen (window and door molding manufacturer)	321911	Yakama IR	White Swan, WA
Pace International	Pace Int'l (repellent and fertilizer applications)	115112	Yakama IR	Wapato, WA
Potlatch, St. Maries	Potlatch (lumber manufacturer support facility)		Coeur d'Alene Reservation	St. Maries, ID
Three Rivers Timber, Inc.	Three Rivers Timber (sawmill)	321113	Nez Perce	Kamiah, ID

Note: Sources with uncertain jurisdictional status, uncertain major source status, or other title V applicability uncertainties are excluded.

Source: ITPID, 2002.

Table B-2. Industries Expected to be Affected by the Tribal MMNSR Rule: NAICS Codes for Major Source Types

SIC	NAICS	Description
0711	115112	Repellent and fertilizer applications
1021	212234	Copper mining and processing
1211, 1222, 1231	21211	Coal mining
1311	211111	Natural gas plant
1311	211111	Oil and gas production
1321	211112	Fractionation of natural gas liquids
1442	21232	Sand and gravel production
2421	321113	Sawmill

(continued)

Table B-2. Industries Expected to be Affected by the Tribal MMNSR Rule: NAICS Codes for Major Source Types (continued)

SIC	NAICS	Description
2431	321911	Window and door molding manufacturer
2511	33712	Furniture manufacture
2819	325188	Elemental phosphorus plant
2819	325188	Sulfuric acid plant
3341	331314	Secondary aluminum production and extrusion
3341	331492	Cobalt and tungsten recycling
4612	486110	Crude oil storage and distribution (pipeline transportation of crude oil)[a]
4911	221112	Power plant (coal-fired)
4911	221119	Power plant (biomass-fueled)
4911	221119	Power plant (landfill gas-fired)
4922	221210	Natural gas pipeline and collection
4922	486210	Natural gas compressor
4953	56221	Medical waste incinerator
4953	562212	Landfill
7389	5614	Lumber manufacture support

[a] Facility may also be classified under SIC 5171 and NAICS 422710 as petroleum bulk stations and terminals.

APPENDIX C

ESTIMATED EMISSION CONTROL AND ADMINISTRATIVE BURDEN COSTS

C.1 Estimating the Burden and Cost to the Facilities (Respondents) and Tribal Agencies

C.1.1 Estimating Respondent Burden

C.1.1.1 Major Sources

The NSR rules will have little impact on existing major stationary sources in Indian country because they will only affect such sources if they propose a major or minor modification. EPA data shows that there are eight existing major sources in nonattainment areas in Indian country. EPA projects at most one major modification in a nonattainment area in Indian country during the analysis period (i.e., 2004 - 2010); none are expected during the 3 years following promulgation.

There are currently a total of 83 major sources located throughout Indian country; a portion of these sources would choose to make minor modifications over the study period; it is assumed that each major source does a process or operational modification every 10 years. However, it is anticipated that, of these major source process/operational modifications, only 10 percent will result in greater than *de minimus* emissions increases. This group (one facility per year) will be required to get a minor source NSR permit. As EPA noted in their memorandum on "New Source Review Year 2000 Adjustments," September 6, 2000, "...industry has been able to build major new plants or make physical and operational changes at major existing sources without exceeding the major source and major modification thresholds." The same situation holds for minor modifications to major sources. Sources avoid the major and minor NSR thresholds for three reasons: (1) installation of state-of-the-art control technologies; (2) replacement or better control of older, more polluting processes; and (3) engaging in effective pollution prevention efforts. All of these actions result in significant reductions in air emissions beyond the baseline case. This would result in an estimated one minor modification to a major source in Indian country per year or seven total over the 7-year study period. During the first 3 years following promulgation, it is estimated that there will be three minor modifications to major sources in Indian country. The burden costs and impacts are based on sources incurring costs associated with the respondent activities required by the *Federal Minor New Source Review*

Rule and the Federal Major Nonattainment New Source Review Rule. The burden costs and impacts are identified in Attachment 1 and characterized in Section 6.

The rule will only result in an administrative change for new major sources in Indian country; this is because, although the regulatory mechanism to issue permits is not yet available either in the form of a federal nonattainment NSR rule or a TIP, the EPA would be required to implement the program in Indian country, and would otherwise have to do source-specific Federal implementation plans. As a result, there would be no new or additional burden on industry. The EPA estimates that at most one new major source will locate in a nonattainment area in Indian country during the analysis period (i.e., 2004 to 2010). None are expected during the 3 years following promulgation.

C.1.1.2 Minor Sources

The minor NSR permitting rule proposed in this action would apply to all new stationary sources and modifications in Indian country that are not subject to regulation as new major stationary sources or major modifications under Parts C or D of Title I of the Act, and are not *de minimus* as defined in the proposed regulation. The annual burden estimates are based on an estimated 288 new minor source facilities coming online over the study period of 2004 to 2010. There are expected to be 123 new minor sources during the first 3 years following promulgation of the rule.

The EPA estimates that there are 3,169 existing minor sources in Indian country. Assuming that a minor source makes a modification every 10 years, each year there would be an estimated 317 facilities making modifications to their operations. However, it is anticipated that of these minor source process/operational modifications only 5 percent will result in greater than *de minimus* emissions increases. This group (16 facilities per year) will be required to get a minor source NSR permit. As previously noted, "...industry has been able to build major new plants or make physical and operational changes at major existing sources without exceeding the major source and major modification thresholds." The same situation holds for minor sources. Sources are expected to avoid the minor NSR thresholds for same three reasons as noted for major sources: (1) installation of state-of-the-art control technologies; (2) replacement or better control of older, more polluting processes; and (3) engaging in effective pollution prevention efforts. All of these actions result in significant reductions in air emissions beyond the baseline case. Therefore, during the first 3 years, it is estimated that there will be 48 minor sources requiring permits as a result of minor modifications. Of these minor source facilities undergoing a minor modification, it is estimated that half will incur control device costs.

Table C-1 presents the air emissions, controls and costs for typical minor sources in Indian Country. With regard to the minor NSR permitting rule, the information burden estimates for monitoring, testing, reporting and recordkeeping are presented in Attachment 1. These numbers were derived from estimates based on EPA's experience with other standards. See Section C.2 for the assumptions regarding the frequency of occurrence for the various respondent activities.

C.1.1.3 Synthetic Minor Sources

The minor NSR permitting rule will also allow new and existing stationary sources in Indian country to accept federally enforceable limits on their potential to emit any regulated air pollutant. These enforceable permit limits will enable sources to avoid regulation as new major stationary sources, and instead be regulated under this proposed rule, and other applicable rules, as minor sources or minor modifications. Sources which voluntarily accept enforceable emission limits in order to avoid major NSR regulations are often referred to as "synthetic minor" sources. The EPA believes that facilities could choose to do this to avoid Title V permitting or avoid being classified as a major source under the NSR or MACT (NESHAP) programs; thus, only the existing 83 major sources would be candidates. Because this action is completely optional, EPA believes a facility would only choose to do it if it resulted in cost savings. Thus, EPA estimates no costs for this type of affected source but instead expects them to incur a cost savings. None are expected during the 3 years following promulgation; therefore, no burden is projected.

C.1.2 Estimating Respondent Costs

C.1.2.1 Estimating Labor Costs

Labor rates and associated costs are based on Bureau of Labor Statistics (BLS) data. Technical, management, and clerical average hourly rates for civilian workers were taken from the March 2002 Employment Cost Trends (http://stats.bls.gov/news.release/ecec.t02.htm). Wages for civilian workers (white-collar occupations) are used as the basis for the labor rates with a total compensation of $28.49/hour for technical, $42.20/hour for managerial and legal, and $18.41/hour for clerical. These rates represent salaries plus fringe benefits and do not include the cost of overhead. An overhead rate of 110 percent is used to account for these costs. The fully-burdened wage rates used to represent respondent labor costs are: technical at $59, management and legal at $89, and clerical at $39.

Table C-1. Air Emissions, Controls, and Costs for Typical Minor Sources In Indian Country[a1]

Source Category [SIC code]	Process and Air Emission Control Information						
	Process[b1] Throughput Capacity	Baseline[c1] Control Technology	Baseline Emissions	MSCT[d1]	MSCT Emissions	MSCT[e1] Capital Cost (2000$)	MSCT[f1] Annualized Cost (2000$)
Dry cleaner [7216]	20 tpy[g1]	No control[g1]	5.5 tpy VOC[h1]	Refrigeration/ condensation and carbon adsorption	0.6 tpy VOC[h1]	$23,550[i1]	$3,250[j1]
Gasoline bulk plant [5171]	6,500 gallons/day[k1]	Submerged[k1] loading controls	18.5 tpy VOC[l1]	Vapor balancing systems	1.9 tpy VOC[l1]	$31,400[m1]	$3,530[m1]
Gasoline station *storage tanks* [5541]	1,200 gal/day[n1]	No control[n1]	2.2 tpy VOC[o1]	Stage I vapor balance	0.1 typ VOC[o1]	$1,870[p1]	$380[p1]
Gasoline station *refueling* [5541]	1,200 gal/day[q1]	No control[q1]	3.0 tpy VOC[r1]	Stage II vapor balance	0.15 typ VOC[r1]	$12,650[s1]	$3,410[s1]
Industrial, commercial and institutional boiler: *natural gas*[t1]	<10 MM Btu/hr[u1]	No control[u1]	6.7 tpy NOx[v1] 3.0 tpy CO	FGR or low NOx burners	3.5 tpy NOx[v1] 3.0 tpy CO	$30,590[w1]	$6,151[w1]
Industrial, commercial and institutional boiler: *oil-fired*[t1]	<10 MM Btu/hr[x1]	No control[x1]	3.6 tpy SO2[y1] 11.2 tpy NOx 1.2 tpy CO	FGD (SO2) FRG or low NOx burners	[y1]	$361,211[z1]	$61,365[z1]
Natural gas compressor station [4922]	100 million scf/yr[a2] (1.8 E+11 Btu/yr)	No control[a2]	76 tpy NOx[b2] 50 tpy CO 132 tpy TOC	Post-combustion catalytic technologies	7.6 tpy NOx[c2] 5.0 tpy CO 13.2 tpy TOC	$140,200[d2]	$25,460[e2]
Asphalt hot mix plant [2951]	100,000[f2] (tons/year)	Dry Mechanical and wet scrubber[f2]	6.0 tpy PM[g2] 0.2 tpy VOC	Fabric filter	1.3 tpy PM [g2] 0.2 tpy VOC	$160,800[h2]	$50,000[i2]

(continued)

Table C-1. Air Emissions, Controls, and Costs for Typical Minor Sources In Indian Country[a1] (continued)

Source Category [SIC code]	Process and Air Emission Control Information						
	Process[b1] Throughput Capacity	Baseline[c1] Control Technology	Baseline Emissions	MSCT[d1]	MSCT Emissions	MSCT[e1] Capital Cost (2000$)	MSCT[f1] Annualized Cost (2000$)
Concrete batching plant [5032]	100,000 tpy[j2]	No control[j2]	5 tpy PM [k2] 1.5 tpy PM_{10}	Fugitive dust suppression controls and fabric filters	2.2 tpy PM[k2] 0.5 tpy PM_{10}	$147,000[l2]	$48,400[m2]
Sand and gravel processing [1442]	140,000 tpy[n2]	No control[n2]	12.6 tpy PM_{10}[o2]	Fugitive dust suppression controls	2.5 tpy PM_{10}[p2]	$174,700[q2]	$57,900[r2]
Stone quarrying and processing [1422 and 1423]	400,000 tpy[s2]	No control[s2]	20 tpy PM_{10}[t2]	Fugitive dust suppression controls and fabric filters	2 tpy PM_{10}[u2]	$210,700[v2]	$73,800[w2])
Grain elevator [5153]	100,000 tpy[x2] (4 MM Bu/yr)	No control[x2]	5 tpy PM_{10}[y2]	Fugitive dust suppression controls and fabric filters	0.5 tpy PM_{10}[z2]	$135,900[a3]	$47,100[b3]
Solid waste landfill [4953]	<0.5 million tons (capacity) [3,000 tpy loading][c3]	No control[c3]	25 tpy VOC[d3]	Gas collection system and control device	6.3 tpy VOC[e3]	$145,000[f3]	$26,460[g3]
Lumber saw mill [2421]	100,000 tpy logs[h3]	No control or low eff. cyclones[h3]	31 tpy PM[i3]	Fugitive dust suppression controls and add-on controls, e.g., fabric filters	1.5 typ PM[j3]	$144,000[k3]	$48,100[l3]

(continued)

Table C-1. Air Emissions, Controls, and Costs for Typical Minor Sources In Indian Country[a1] (continued)

Source Category [SIC code]	Process and Air Emission Control Information						
	Process[b1] Throughput Capacity	**Baseline[c1] Control Technology**	**Baseline Emissions**	**MSCT[d1]**	**MSCT Emissions**	**MSCT[e1] Capital Cost (yr 2000 $)**	**MSCT[f1] Annualized Cost (yr 2000 $)**
Automobile refinishing shop [7532]	Medium size shop[m3]	No control[m3]	3.6 tpy VOC[m3]	Enclosures and carbon adsorbers or incinerators; or low VOC coatings	0.7 tpy VOC[m3]	$52,800[n3] [carbon adsorption]	$11,000[n3]
Surface Coating operations [2396, 3411, and 3479]	General coating operation (e.g., can coating)	No control	30 tpy VOC[o3]	Enclosures and Carbon adsorbers or incinerators; or low VOC coatings	3 tpy[p3]	$209,000[q3]	$66,000[q3]
Printing operation (lithographic) [2752]	48 tpy (ink use)[r3]	No control[r3]	6 tpy VOC[r3]	Add-on control devices and P2 measures (low VOC inks and cleaning solutions)	3.5 tpy VOC[r3]	NA	$2,200[r3]

Note: CO = Carbon monoxide; NO_x = Nitrogen oxides; PM = Particulate matter; VOC = Volatile organic compounds; SO_2 = Sulfur dioxide; Tpy = Short tons per year; PM_{10} = Particulate matter less than 10 microns

Table C-1. Air Emissions, Controls, and Costs for Typical Minor Sources in Indian Country[a1] (continued)

Notes:

a1. Source types listed are those considered to have the greatest potential to be new minor sources located on Indian Country; selection was based on available tribal emission inventories (i.e., Regions 8 and 10) and other information gathered from EPA regional contacts and other publicly available sources.

b1. Process throughput or operating capacities are selected to reflect typical minor source sizes for the source category. In some cases they are based on a national average value; others are based on existing size categories where the lower end values were selected to characterize minor sources; and in some cases the values were based on information contained in the available tribal emission inventories.

c1. Baseline control is a characterization of the control level that would likely be applied to the source type in the absence of any minor source regulation.

d1. MSCT is the technology selected to represent "best available control technology" for the source type. These are for the most part based on review of the EPA's RACT/MSCT/LEAR Clearinghouse website database and other documents such as the South Coast APCD MSCT Guidelines.

e1. Costs are in year 2000 dollars. Capital costs (i.e., total capital investment) includes the purchased equipment cost, direct installation cost, and indirect installation costs.

f1. Total annual cost is comprised of direct costs, indirect costs, and any recovery credits.

g1. Average size commercial facility; 11-B.1, EPA-310/R-95-001.

h1. Emission factors from Section 4.1of AP-42.

i1. Costs based on installing a recovery dryer; 4-192, EPA-453/R-92-018.

j1. Operating cost and annual charges; no credit for solvent recovery.

k1. Typical bulkplant throughput, Section 4.2.6(F); EPA 453/R-92-018.

l1. Section 4.2.6(B); EPA 453/R-92-018.

m1. Section 4.2.6(F); EPA 453/R-92-018.

n1. Section 4.2.8(F); EPA 453/R-92-018.

o1. Sections 4.2.7(B and C); EPA 453/R-92-018.

p1. Section 4.2.7(F); EPA 453/R-92-018.

q1. Section 4.2.8(F); EPA 453/R-92-018.

r1. Sections 4.2.8(B and C); EPA 453/R-92-018.

s1. Section 4.2.8(F); EPA 453/R-92-018.

t1. This source category would include boilers and heaters located at casinos on Indian Country.

u1. Assumed cut-off value based on EPA NSPS/NESHAP regulations

v1. Section 1.4, Table1.4-1 of AP-42.

w1. Costs based on NOx controls.

x1. Assumed cut-off value based on EPA NSPS/NESHAP regulations

y1. Section 1.3, Table1.3-1 of AP-42.

(continued)

Table C-1. Air Emissions, Controls, and Costs for Typical Minor Sources in Indian Country[a1] (continued)

Notes:

z1. Sulfur dioxide control accounts for the majority of costs; alternative is low sulfur fuel.

a2. Based on an average value calculated from the natural gas compressor station data reported in the available tribal inventories.

b2. Based on uncontrolled emission factors for 4-stroke lean-burn engines from Table 3.2-2 in Section 3.2 of AP-42.

c2. 90 percent control using catalytic reduction and oxidation technologies.

d2. Capital costs based on catalytic reduction and oxidation technologies.

e2. Annual costs based on catalytic reduction and oxidation technologies.

f2. Assumed valued selected to represent small to medium size unit, based on calculated national average value of 151,500 tpy of hot mix asphalt produced in 1996.

g2. Emission factors from Table 11.1-1and Table 11.1-9 of Section 11.1of AP-42.

h2. Fugitive dust suppression cost based on range of prices collected as part of environmental technology Verification Program. Fabric filter costs are based on EPA air Pollution Control Cost Manual, EPA/452/B-02-001.

i2. NA (no applicable comment)

j2. Assumed valued selected to represent small to medium size unit, based on calculated national average value.

k2. Emission factors from Table 11.12-3 in Section 11.12 of AP-42.

l2. NA

m2. NA

n2. National average value calculated from information "Sand and Gravel Processing," Chapter 15 of in AWMA Air Pollution Engineering Manual, 1992.

o2. Emission factor from Table 1 of "Sand and Gravel Processing," Chapter 15 of AWMA Air Pollution Engineering Manual, 1992.

p2. Based on 80 percent control.

q2. NA

r2. NA

s2. National average value calculated from information "Stone and Quarrying Processing," Chapter 15 of in AWMA Air Pollution Engineering Manual, 1992.

t2. Emission factor from Table 11.19.2-2 in Section 11.19.2 of AP-42.

u2. Based on 90 percent control of PM10.

v2. NA

w2. NA

x2. Calculated value based on reported emissions in tribal inventories.

y2. Emission factor from Table 9.9.1-1 of AP-42.

(continued)

Table C-1. Air Emissions, Controls, and Costs for Typical Minor Sources in Indian Country[a1] (continued)

Notes:

z2. Based on 90 percent control of PM10.

a3. NA

b3. NA

c3. Assumed small design capacity and median USA waste acceptance rate, from Chapter 19 of AWMA Air Pollution Engineering Manual, 1992.

d3. Based on average emission factor from Chapter 19 of AWMA Air Pollution Engineering Manual, 1992, applied to the total design capacity of waste. For new facilities, actual emissions would increase each year as waste is added based on acceptance rates.

e3. Based on 75 percent control of VOC.

f3. Based on 500,000 tons capacity; flare costs are based on EPA Control Cost Manual.

g3. Based on 20,000 tpy fill rate.

h3. Assumed capacity to characterize small mill based on model plant information contained in Section 2.12 "Lumber and Furniture Industry" of EPA-450/3-77-010, 1977.

i3. Emission factors from Table 2-59 in Section 2.12 "Lumber and Furniture Industry" of EPA-450/3-77-010, 1977.

j3. Based on 95 percent control.

k3. NA

l3. NA

m3. From Table 12 in Chapter 10"surface Coating" in AWMA Air Pollution Engineering Manual, 1992.

n3. Activated carbon canister costs adapted from Handbook, Control Techniques for Hazardous Air Pollutants, EPA/625/6-91/014. Note that catalytic controls costs for auto refinishers are also presented in Section 4.6.1.17(F); EPA 453/R-92-018.

o3. Small scale can coating operation derived from Table 4.2.2.2-1 of Section 4.2.2.2 of AP-42.

p3. Based on 90 percent control.

q3. Section 4.5.1.4 (F); EPA 453/R-92-018.

r3. Based on information and data contained in Chapter 5 (see Tables 5-1 through 5-4) of the EPA document "Control of Volatile Organic Compound Emissions from Offset Lithographic Printing" 1993, OAQPS Guideline Series.

C.1.2.2 Estimating Capital/Startup Costs

Several of the monitoring, testing, recordkeeping, and reporting (MRR) activities associated with the proposed rule occur one-time only. These costs are considered as capital cost in this analysis. The estimate of facility capital/startup costs associated with the NSR permit program is shown in Attachment 1. The average capital cost per facility is estimated over the analysis period as $13,088 per affected source.

There are no capital costs associated with the NSR rule for MRR activities for new major sources in nonattainment areas. During the 3 years following promulgation, no new major sources in nonattainment areas in Indian country are expected. In addition, there are no MRR costs estimated for major modifications to existing major sources in nonattainment areas, because none are expected. The minor modifications to existing major sources in attainment and nonattainment areas, which are impacted by the NSR rule, would incur the same MRR cost associated with the NSR permit program as shown in Attachment 1. The average capital cost per facility is estimated over the analysis period as $13,088 per affected source.

C.1.2.3 Estimating Annual Costs

The annualized cost of capital for the capital costs and one-time activities (i.e., $13,088) shown in Attachment 1 is $1,863 per year. This is based on a payment period of 10 years and an interest rate of 7 percent. The annual and reoccurring costs as shown in Attachment amount to a burden cost of $5,735; the total annual burden cost is estimated at $7,598 per year per affected source.

C.1.3 Estimating Agency Burden and Cost

The only costs that the Federal government will incur as a result of this action are user costs associated with the analysis of the reported information, as presented in Attachment 2. This action imposes no direct burden on State, local, or Tribal agencies. However, should a Tribal agency choose to accept delegated authority for the minor NSR rule, the only costs that the Tribal agency or government will incur are user costs associated with the analysis of the reported information, as presented in Attachment 2. Labor rates and associated costs for the agency are assumed to be the same as the respondent's hourly rates rather than the U.S. Government labor rates and associated costs, such as those based on labor rates from the U.S. Office of Personnel Management (OPM). These rates are considered more appropriate, assuming Tribal agencies may adopt the rules. Therefore, agency labor rates are estimated as follows: technical at $59, management and legal at $89,

and clerical at $39. The occurrence of agency-related activities is based on the same frequency of occurrence as used for respondent activities. The average total agency burden per affected source, provided in Attachment 2, is 48 hours per affected source including technical, management, legal, and clerical hours. The average total annualized cost to the agency per affected source is calculated by determining the total labor cost for all the various respondent activities and annualizing those costs that are initial, one-time occurrences. The annualized costs and the costs for those activities that are reoccurring are then added to any associated costs (e.g., total travel expenses for tests attended) to get the average agency burden per facility. The average total annualized cost to the agency per affected source given in Attachment 2, including the cost of labor, capital, operation, and maintenance, is $3,110 per year.

C.1.4 Estimating the Respondent Universe and Total Burden and Costs

Stationary sources subject to this rulemaking will be required to file a NSR construction permit, install the required monitoring equipment, and provide the various one-time notifications required by the rules. Compliance reports also must be submitted. In addition, some of these minor sources will be required to install the minor source MSCT equipment; conduct initial performance tests; conduct air impacts modeling; prepare startup, shutdown, and malfunction plans, and operation and maintenance plans; and provide the various notifications on a routine basis. Costs also will be incurred for inspections of control devices and continuous monitoring systems. Details on the number and percentage of respondents affected by each individual burden activity/item are provided in assumptions listed below in Section 6. The weighted average total burden per affected source provided in Attachment 2 is 296 hours per affected source including technical, management, legal, and clerical hours. The weighted average total annualized cost per affected source given in Attachment 1, including the cost of labor, capital, operation, and maintenance, is $7,598 per year.

The EPA estimates that 288 new minor sources of varying types will be constructed in Indian country during the analysis period, with 123 new minor sources during the first 3 years of the rule (41/yr). It is estimated that 111 existing minor sources will require permits as a result of minor modifications; during the first 3 years, there will be 48 (16/yr) existing minor sources requiring permits as a result of minor modifications. The EPA estimates that at most one new major source will locate in a nonattainment area in Indian country during the analysis period; none are expected during the 3 years following promulgation. During the first 3 years following promulgation, it is estimated that there will be three (1/yr) minor modifications to major sources in Indian country, with a total of eight minor modifications

over the entire study period. In addition, EPA projects at most one major modification in a nonattainment area in Indian country during the analysis period; none are expected during the 3 years following promulgation. No synthetic minors are expected to be processed under the rule during the 3 years following promulgation.

C.1.5 Bottom Line Burden Hours and Cost Tables

C.1.5.1 Respondent Tally

The bottom line respondent burden capital costs, presented in Table C-2, are calculated by taking the capital cost for the one-time monitoring, compliance testing, recordkeeping, and reporting costs associated with the minor source NSR permit program for each affected source type and then multiplying that value by the number of affected sources of that type that are expected to occur in Indian country each year for the first 3 years following promulgation of the rule. The totals for each source type are then added to get the nationwide total capital costs shown in Table C-2. Total capital costs are $759,104 per year for a 3-year total of $2,277,312.

Table C-2. Estimated Total Capital Cost Burden to Industry to Implement Reporting and Recordkeeping Requirements During Years 1, 2, and 3

Affected Source Type	Number of Affected Sources per Year	Average Capital Cost per Source	Total Capital Costs
New minor sources	41	$13,088	$536,608
Modifications to minor sources	16	$13,088	$209,408
New major sources in nonattainment areas	0	$13,088	$0
Major modifications to major sources in nonattainment areas	0	$13,088	$0
Minor modifications to major sources	1	$13,088	$13,088
Synthetic minor sources	0	$13,088	$0
Totals	58		$759,104

Notes: The capital costs and one-time activities (i.e., the sum of all one-time costs shown in Attachment 1) is $13,088.

The nationwide total annual compliance costs are the annualized costs of monitoring, testing, recordkeeping, and reporting associated with the NSR rule multiplied by the number of affected source types that are expected to occur in Indian country each year for the first 3 years following promulgation of the rule. The totals for each source type are then added to get the nationwide total annual recordkeeping and reporting burden costs shown in Table C-3. The total annual costs are $440,684 per year for a 3-year total of $1,322,052.

Table C-3. Estimated Total Annual Cost Burden to Industry to Implement Reporting and Recordkeeping Requirements During Years 1, 2, and 3

Affected Source Type	Number of Affected Sources per Year	Average Total Hours per Source per Year	Total Hours per Year	Average Annual Cost per Source	Total Annual Costs
New minor sources	41	296	12,136	$7,598	$311,518
Modifications to minor sources	16	296	4,736	$7,598	$121,568
New major sources in nonattainment areas	0	296	0	$7,598	0
Major modifications to major sources in nonattainment areas	0	296	0	$7,598	0
Minor modifications to major sources	1	296	296	$7,598	$7,598
Synthetic minor sources	0	296	0	$7,598	0
Totals	58		17,168		$440,684

Notes: The annualized cost of capital for the capital costs and one-time activities (i.e., $13,088, the sum of all one-time costs shown in Attachment 1) is $1,863 per year. This is based on a payment period of 10 years and an interest rate of 7 percent. The annual and reoccurring costs as shown in Attachment 1 amount to a burden cost of $5,735; the total annual burden cost is estimated at $7,598 per year per affected source.

C.1.5.2 The Agency Tally

The bottom line Agency total annual burden costs are calculated by taking the average cost to the Agency per facility ($3,110) and multiplying by the number of affected sources in Indian country during the first 3 years following promulgation. The nationwide total annual cost to the EPA or Tribal agencies as shown in Table C-4 is $180,380 per year for a 3-year total of $541,140.

C.1.6 Litigation

Although not typically included directly in the agency burden estimates, it is possible that Tribal agencies will be involved in periodic litigation related to the minor source NSR permit program. To characterize these costs, it is assumed that each agency will be involved with a facility litigation on average of once every 3 years. The estimated annual cost of these activities is 73 hours and $4,885 per year per Tribal agency.

Table C-4. Estimated Recurrent Burden and Cost to the Agency to Implement Reporting and Recordkeeping Requirements During Years 1, 2, and 3

Affected Source Type	Number of Affected Sources per Year	Average Total Hours per Source per Year	Total Hours per Year	Average Annual Cost per Source	Total Annual Costs
New minor sources	41	48	1,968	$3,110	$127,510
Modifications to minor sources	16	48	768	$3,110	$49,760
New major sources in nonattainment areas	0	48	0	$3,110	$0
Major modifications to major sources in nonattainment areas	0	48	0	$3,110	$0
Minor modifications to major sources	1	48	48	$3,110	$3,110
Synthetic minor sources	0	48	0	$3,110	$0
Totals	58		2,784		$180,380

Notes: The average total annualized cost to the agency per affected source given in Attachment 2, including the cost of labor, capital, operation, and maintenance, is $3,110 per year.

C.1.7 Burden Statement

The average annual respondent burden per facility is estimated at 296 hours and $7,598. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information requirement; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

C.2 Assumptions Made in Estimating the Burden and Cost to the Facilities (Respondents) and Tribal Agencies

The burden and cost estimates are based on the following assumptions:

a. All minor sources will incur preparation and planning costs.

b. One in 50 facilities will be required to conduct ambient air modeling.

c. One in 20 facilities will be required to hold a public hearing.

d. One in five facilities will make revisions to their permits following submittal.

e. One in 20 facilities will be required to acquire and install an emission parameter monitoring system.

f. One in 50 facilities will be required to conduct a control device performance test and develop a site test plan.

g. One in 20 facilities will request special compliance requirements.

h. One in 10 facilities will request a compliance extension.

i. All facilities must submit an initial compliance report.

j. One in 10 facilities will report at least one deviation from the established monitoring values during the year.

k. One in 50 facilities will be required to develop a startup/shutdown/malfunction plan and only half of these will experience an event during the year.

l. One in 20 facilities will be required to develop a control device maintenance plan.

m. One in 10 facilities will include minor sources that are exempt from the control requirements.

n. All facilities will be required to keep records of some type and to periodically enter data into the files.

o. One in 10 facilities will train personnel and conduct audits of their source during the year.

p. One in 10 facilities are inspected by the agency annually and 10 percent of the inspected facilities are found in noncompliance with one or more provisions of the rule.

q. Each Tribal agency will be involved in litigation of a facility on average of one per 3 years.

Attachment 1. Tribal Minor Source NSR Respondent (Facility) Burden and Cost

Facility NSR Program Activity	(A) Labor Hours per Activity per Labor Category				(B) Activities per Respondent per Year	(C) Total Number of Respondents	(D) Total Hours	(E) Labor Costs per Labor Category (A x B x C x Rate)				(F) Total Labor Costs	(G) Associated Costs	(H) Total Costs (F+G)
	Legal	Managerial	Technical	Clerical				Legal $89	Managerial $89	Technical $59	Clerical $39			
1. Preparation and Planning														
a. Determination of compliance requirements (#)	0	2	8	0	1	1	10	$0	$177	$471	$0	$648	$0	$648
b. Obtain guidance on data needs (#)	0	0	2	0	1	1	2	$0	$0	$118	$0	$118	$0	$118
c. Preparation of MSCT engineering analysis (#)	0	4	16	2	1	1	22	$0	$354	$941	$77	$1,373	$0	$1,373
2. Data Collection and Analysis (Surveys and Studies)														
a. Conduct ambient air modeling (#)	0	2	40	4	1	0.02	1	$0	$4	$47	$3	$54	$200	$254
3. Permit Application														
a. Preparation and submittal of permit application (#)	2	4	40	16	1	1	62	$177	$354	$2,353	$619	$3,503	$25.00	$3,528
b. Public hearing (#)	4	4	16	8	1	0.05	2	$18	$18	$47	$15	$98	$1.25	$99
c. Revisions to permit (#)	1	1	4	2	1	0.2	2	$18	$18	$47	$15	$98	$5.00	$103
4. Acquisition, Installation, and Use of Technology and Systems														
a. Control device operating parameter (emission) monitoring system (#)	0	4	20	2	1	0.05	1	$0	$18	$59	$4	$80	$0	$80
5. Reporting Requirements														
a. Read instructions (#)	0	2	4	0	1	1	6	$0	$177	$235	$0	$413	$0	$413
b. Required activities (#)														
c. Create information														
i. Conduct control device performance test (#)	0	8	40	8	1	0.02	1	$0	$14	$47	$6	$67	$1,000	$1,067
d. Gather existing information (#)	0	0	8	2	1	1	10	$0	$0	$471	$77	$548	$0	$548
e. Write reports														
i. Initial notification of intent to constr/modify (#)	1	2	4	2	1	1	9	$89	$177	$235	$77	$579	$25.00	$604
ii. Notification of anticipated startup (#)	0	1	2	1	1	1	4	$0	$89	$118	$39	$245	$25.00	$270
iii. Notification of actual startup (#)	0	0	1	1	1	1	2	$0	$0	$59	$39	$97	$25.00	$122
iv. Notification of special compliance requirements (#)	2	4	16	4	1	0.05	1	$9	$18	$47	$8	$81	$1.25	$83

(continued)

Attachment 1. Tribal Minor Source NSR Respondent (Facility) Burden and Cost (continued)

Facility NSR Program Activity	(A) Labor Hours per Activity per Labor Category				(B) Activities per Respondent per Year	(C) Total Number of Respondents	(D) Total Hours	(E) Labor Costs per Labor Category (A x B x C x Rate)				(F) Total Labor Costs	(G) Associated Costs	(H) Total Costs (F+G)
	Legal	Managerial	Technical	Clerical				Legal $89	Managerial $89	Technical $59	Clerical $39			
v. Compliance extension request (#)	2	2	8	2	1	0.1	1	$18	$18	$47	$8	$90	$2.50	$93
vi. Performance test notification (#)	0	0	2	1	1	0.02	0	$0	$0	$2	$1	$3	$0.50	$4
vii. Site-specific test plan (#)	0	1	16	8	1	0.02	1	$0	$2	$19	$6	$27	$0.50	$27
viii. Initial compliance status determination (#)	1	4	8	4	1	1	17	$89	$354	$471	$155	$1,068	$25.00	$1,093
ix. Performance test reports (#)	0	4	16	4	1	0.02	0	$0	$7	$19	$3	$29	$0.50	$30
x. Compliance report (#)	1	2	8	4	1	1	15	$89	$177	$471	$155	$891	$25.00	$916
xi. Deviation report (##)	1	2	4	2	1	0.1	1	$9	$18	$24	$8	$58	$2.50	$60
xii. Startup/ shutdown/malfunction reports (##)	0	1	8	1	1	0.01	0	$0	$1	$5	$0	$6	$0.25	$6
6. Recordkeeping Requirements														
a. Read instructions (##)	1	2	8	0	1	1	11	$89	$177	$471	$0	$737	$0	$737
b. Plan activities (##)	0	2	8	2	1	1	12	$0	$177	$471	$77	$725	$0	$725
c. Implement activities														
i. Prepare startup/shutdown/ malfunction plan (#)	0	2	16	8	1	0.02	1	$0	$4	$19	$6	$29	0.5	$29
ii. Prepare maintenance plan (#)	0	2	16	8	1	0.05	1	$0	$9	$47	$15	$71	1.25	$73
iii. Prepare documentation for exempted sources (#)	4	2	20	8	1	0.1	3	$35	$18	$118	$31	$202	2.5	$204
iv. Monitor control device parameters (##)	0	0	1	0	52	0.1	5	$0	$0	$306	$0	$306	$0	$306
v. Inspect control device (##)	0	0	1	0	12	1	12	$0	$0	$706	$0	$706	$0	$706
d. Develop record system (#)	0	2	4	16	1	1	22	$0	$177	$235	$619	$1,031	25	$1,056
e. Time to enter information (##)	0	0	1	0	52	1	52	$0	$0	$3,059	$0	$3,059	$0	$3,059
f. Time to train personnel (#)	0	0	40	4	1	0.1	4	$0	$0	$235	$15	$251	2.5	$253
g. Time to perform audits (##)	0	2	20	0	1	0.1	2	$0	$18	$118	$0	$135	$0	$135
TOTAL							296							

Notes: # = One-time costs that are incurred and treated as capital costs.
= Annual or reoccurring cost included as an annual cost.

Totals may equal sum of columns precisely due to rounding. For example, numbers in Column (D) add to 295 due to rounding, but actual value is 296. For Paperwork Reduction Act Submission, we used the actual value, 296. (Item 6 Recordkeeping Requirements adds to 125 due to rounding, but is actually 126).

Based on the above costs, the average capital cost per facility for the one-time activities is $13,088 per source (i.e., the sum of those items identified as one-time costs [#]); annualized this cost is $1,863 per year per source. The total of the various annual and reoccurring costs (##) plus the annualized capital cost is an average of $7,598 (i.e., $1,863 + $5,735) per year per source.

Attachment 2. Tribal Minor Source NSR Agency Burden and Cost

Facility NSR Program Activity	(A) Labor Hours per Activity per Labor Category				(B) Activities per Respondent per Year	(C) Total Number of Respondents	(D) Total Hours	(E) Labor Costs per Labor Category (A x B x C x Rate)				(F) Total Labor Costs	(G) Associated Costs	(H) Total Costs (F+G)
	Legal	Managerial	Technical	Clerical				Legal $89	Managerial $89	Technical $59	Clerical $39			
1. Permit Review														
a. Initial permit review	0	1	8	0	1	1	9	$0	$89	$479	$0	$567	$0	$567
b. Public Hearing	0	1	8	8	1	0.05	1	$0	$4	$24	$15	$44	$5	$49
c. Permit Revisions	1	1	4	0		0.2	0	$0	$0	$0	$0	$0	$0	$0
2. Report review														
a. Initial notification of intent to constr/modify	0	1	4	0	1	1	5	$0	$89	$239	$0	$328	$0	$328
b. Notification of anticipated startup	0	1	2	0	1	1	3	$0	$89	$120	$0	$208	$0	$208
c. Notification of actual startup	0	1	2	0	1	1	3	$0	$89	$120	$0	$208	$0	$208
d. Notification of special compliance requirements	0	1	4	0	1	0.05	0	$0	$4	$12	$0	$16	$0	$16
e. Compliance extension request	1	1	4	0	1	0.1	1	$9	$9	$24	$0	$42	$0	$42
f. Performance test notification	0	1	2	0	1	0.02	0	$0	$2	$2	$0	$4	$0	$4
g. Site-specific test plan	0	1	8	0	1	0.02	0	$0	$2	$10	$0	$11	$0	$11
h. Initial compliance determination	0	1	8	0	1	1	9	$0	$89	$479	$0	$567	$0	$567
i. Performance test reports	0	2	16	0	1	0.02	0	$0	$4	$19	$0	$23	$0	$23
j. Compliance report	0	2	8	0	1	1	10	$0	$177	$479	$0	$656	$0	$656
j. Deviation report	0	2	4	0	1	0.1	1	$0	$18	$24	$0	$42	$0	$42
k. Startup/shutdown/malfunction reports	0	1	4	0	1	0.1	1	$0	$9	$24	$0	$33	$0	$33
3. Site compliance inspections (a,b)														
a. Pre-inspection review of facility information	0	1	8	1	1	0.10	1	$0	$9	$48	$4	$61	$0	$61
b. Travel to and from facility (b)	0	0	8	0	1	0.10	1	$0	$0	$48	$0	$48	$10	$58
c. Inspection of air control equipment used to comply with rule requirements	0	0	4	0	1	0.10	0	$0	$0	$24	$0	$24	$0	$24
d. Review site records	0	0	4	0	1	0.10	0	$0	$0	$24	$0	$24	$0	$24
e. Prepare inspection report	0	4	16	4	1	0.10	2	$0	$35	$96	$15	$147	$3	$149
d. Review site records	0	0	4	0	1	0.10	0	$0	$0	$24	$0	$24	$0	$24
e. Prepare inspection report	0	4	16	4	1	0.10	2	$0	$35	$96	$15	$147	$3	$149
4. Enforcement actions (c,d)														
a. Inform facility of noncompliance	4	4	20	8	1	0.01	0	$4	$4	$12	$3	$22	$0	$22
b. Follow-up site inspection	0	4	20	4	1	0.01	0	$0	$4	$12	$2	$17	$1	$18
TOTAL ANNUAL COST PER SOURCE							48					$3,092	$19	$3,110
5. Litigation Cost per Tribal Agency	40	40	100	40	1	0.33	73	$1,180	$1,180	$1,992	$515	$4,868	$17	$4,885
TOTAL							121							
6. EPA Overview of Tribal Agency	8	8	40	8	1	1	64	$709	$709	$2,393	$309	$4,120	$100	$4,220

Totals may equal sum of columns precisely due to rounding. For example, numbers in Column (D) add to 47 due to rounding, but actual value is 48. For Paperwork Reduction Act Submission, we used the actual value, 48.