Illinois
Environmental
Protection Agency

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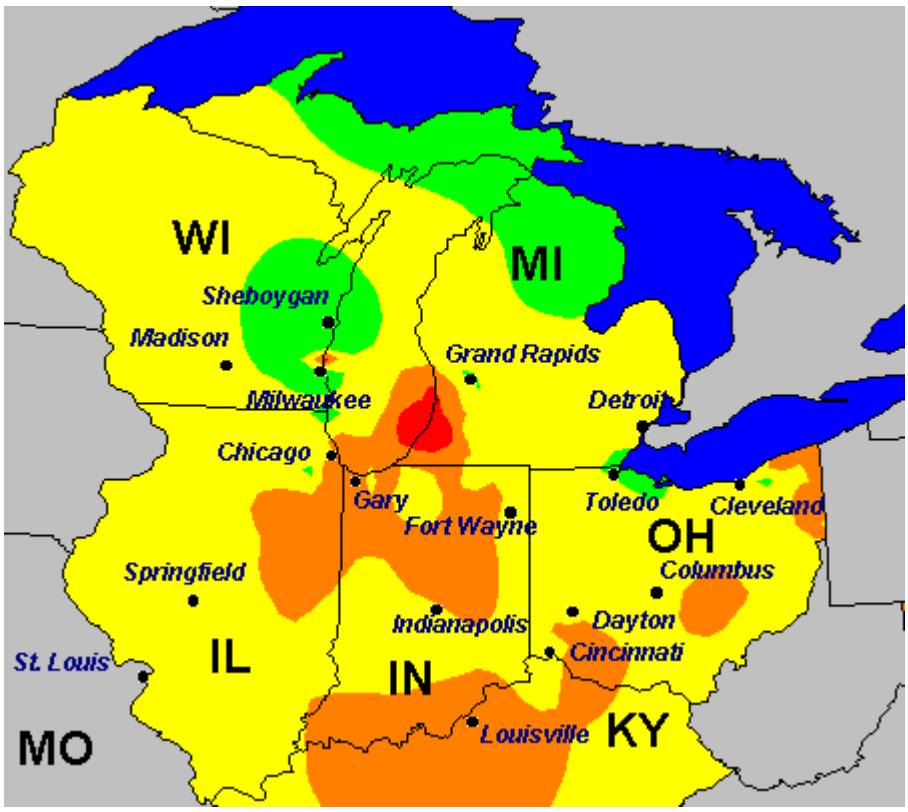

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Illinois Annual Air Quality Report 1998

Illinois Environmental Protection Agency
Bureau of Air

About the cover:

Midwest map of maximum eight-hour ozone concentrations on Sept. 6, 1998, from U.S. EPA's Ozone Mapping Project.

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A MESSAGE FROM THE DIRECTOR

Since 1970, the Clean Air Program at the Illinois Environmental Protection Agency (EPA) has been working to combat air pollution. To comply with the federal Clean Air Act and its amendments, the Agency issues permits to air pollution sources and works to reduce air pollutants. Clean air efforts have progressed to creating partnerships that encourage both voluntary pollution-reducing activities and that promote preventing pollution before it starts.

Our remaining major air pollution problem affects a substantial portion of Illinois' population. Both the Chicago and East St. Louis metropolitan regions still do not meet the federal air quality standard for ozone (smog), which is associated with human respiratory problems as well as ecosystem damage. There were eight occurrences of unhealthful air quality in one or more portions of Illinois during 1998—seven due to ozone and one due to particulate matter—compared with six in 1997 and eight in 1996.

Although this document shows that the trend in Illinois air pollution has been a steady decrease in emissions, there is still much to do to ensure that our residents enjoy the best air quality possible. Recent efforts to combat ozone include asking residents and businesses in the Chicago ozone nonattainment areas for help by voluntarily altering their activities that contribute to ozone formation on Ozone Action Days.

This 28th Annual Air Quality Report highlights information obtained in 1998 from the Bureau of Air's statewide air monitoring network, which incorporates more than 300 monitors that track the measurements of a variety of pollutants and air toxic compounds.

We hope you find this report helpful. We welcome any comments or questions you may have so that we can better address your information needs.

Thomas Skinner
Director

Illinois Annual Air Quality Report 1998

CONTENTS

A Message from the Director iii

Tables vi

Figures vii

Executive Summary ix

Section 1: Air Pollutants: Sources, Health and Welfare Effects 1

Section 2: Statewide Summary of Air Quality for 1998 9

Section 3: Pollutant Standards Index 15

Section 4: Statewide Summary of Point Source Emissions 23

APPENDICES

Appendix A: Air Sampling Network 33
- Description of the Air Sampling Network
- Directory of Air Monitoring Sites

Appendix B: Air Quality Data Summary Tables 49
- Air Quality Data Interpretation
- Ozone Data Tables
- Particulate Matter (PM_{10}) Data Tables
- Carbon Monoxide Data Tables
- Sulfur Dioxide Data Tables
- Nitrogen Dioxide Data Tables
- Lead Data Table
- Filter Analysis Data
- Volatile Organic Compounds Data
- Particulate Matter ($PM_{2.5}$) Data Table
- Mercury Data Table

Appendix C: Precision and Accuracy Data Summary and Tables 85
- Precision and Accuracy Data Summary
- Precision Data Summary
- Accuracy Data Summary

Appendix D: Point Source Emission Inventory Summary Table 91

Appendix E: Illinois EPA Bureau of Air/Division of Air Pollution Control 97

TABLES

Table 1: Summary of National and Illinois Ambient Air Quality Standards 6

Table 2: Illinois Air Pollution Episode Levels 7

Table 3: PSI Descriptor Categories and Health Effects 16

Table 4: PSI Sectors in Illinois 18

Table 5: Distribution of Volatile Organic Material Emissions - 1998 25

Table 6: Distribution of Particulate Matter Emissions - 1998 27

Table 7: Distribution of Carbon Monoxide Emissions - 1998 28

Table 8: Distribution of Sulfur Dioxide Emissions - 1998 30

Table 9: Distribution of Fuel Combustion Sulfur Dioxide Emissions - 1998 30

Table 10: Distribution of Nitrogen Oxide Emissions - 1998 32

Table 11: Distribution of Fuel Combustion Nitrogen Oxide Emissions - 1998 32

Table A1: Illinois Ambient Air Monitoring Network
Directory of Cooperating Agencies in Illinois 34

Table A2: 1998 Non-Continuous Sampling Schedule 36

Table A3: Distribution of Air Monitoring Instruments 38

FIGURES

Figure 1: Average 1-Hour Ozone Maximum 9
Figure 2: Statewide Ozone Exceedance Day Trend 9
Figure 3: Particulate Matter Annual Trends 10
Figure 4: Particulate Matter 24-hour Trends 10
Figure 5: Carbon Monoxide Trends 11
Figure 6: Sulfur Dioxide 24-hour Trends 11
Figure 7: Nitrogen Dioxide Annual Trend 12
Figure 8: Lead Maximum Quarterly Trend 12
Figure 9: Pollutant Standards Index Summaries by Sector 19
Figure 10: Volatile Organic Material Emission Trend 24
Figure 11: Particulate Emission Trend 26
Figure 12: Carbon Monoxide Emission Trend 28
Figure 13: Sulfur Dioxide Emission Trend 29
Figure 14: Nitrogen Oxide Emission Trend 31

EXECUTIVE SUMMARY

This report presents a summary of air quality data collected throughout the state of Illinois during calendar year 1998. Data is presented for the six criteria pollutants (those for which air quality standards have been developed—particulate matter, ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead) along with some heavy metals, nitrates, sulfates, volatile organic compounds and $PM_{2.5}$. Monitoring was conducted at more than 100 different site locations collecting data from more than 200 instruments.

In terms of the Pollutant Standards Index, air quality during 1998 was either good or moderate more than 98 percent of the time throughout Illinois. There were four days statewide that exceeded an air quality standard for any pollutant—one for particulate matter and three for ozone. These exceedances occurred in Cook, Jersey and St. Clair counties (ozone) and LaSalle County (particulate matter). Air quality trends for the criteria pollutants are continuing to show downward trends or stable trends well below the level of the standards.

In 1998 monitoring was conducted at 10 locations in Cook and Madison counties for $PM_{2.5}$ (fine particulate matter of size less than 2.5 microns). In July 1997 the U.S. EPA finalized new ambient air quality standards for particulate matter that included the fine particulates as measured by $PM_{2.5}$. The monitoring network to fully assess these standards will be phased in during 1999 and 2000.

Stationary point source emission data has again been included. The data in the report reflects information contained in the Emission Inventory System as of Dec. 31, 1998. Emission estimates are for the calendar year 1998 and are for the following pollutants: particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides and carbon monoxide. Emission trends of these pollutants has been given for the years 1981 to the present. Emissions reported with the Annual Emissions Report have been provided starting with 1992. In general there has been a trend toward decreasing emissions over this time period.

SECTION 1: AIR POLLUTANTS: SOURCES, HEALTH AND WELFARE EFFECTS

Ozone (O_3)

Photochemical oxidants result from a complex series of atmospheric reactions initiated by sunlight. When reactive (non-methane) hydrocarbons and nitrogen oxides accumulate in the atmosphere and are exposed to the ultraviolet component of sunlight, the formation of new compounds, including ozone and peroxyacetylnitrate, takes place.

Absorption of ultraviolet light energy by nitrogen dioxide results in its dissociation into nitric oxide and an oxygen atom. The oxygen atoms, for the most part, react with atmospheric molecular oxygen (O_2) to form ozone (O_3). In general, nitric oxide will react with ozone to reform nitrogen dioxide, completing the cycle. A buildup of ozone above the equilibrium concentration defined by the reaction cycle given above results when nitrogen oxide reacts with non-methane hydrocarbons. Oxygen atoms from the hydrocarbon radical oxidize nitric oxide to nitrogen dioxide without ozone being used up. Thus ozone concentrations are not depleted and can build up quickly.

Ozone can also be formed naturally in the atmosphere by electrical discharge and in the stratosphere by solar radiation. The former process is not capable of producing significant urban concentrations of this pollutant; but there is some belief that incursion of ozone from the stratosphere can contribute significantly to elevated ground level concentrations of ozone under certain meteorological conditions.

Injury to vegetation is one of the earliest manifestations of photochemical air pollution, and sensitive plants are useful biological indicators of this type of pollution. The visible symptoms of photochemical oxidant-produced injury to plants may be classified as:

- Acute injury, identified by cell collapse with subsequent development of necrotic patterns.
- Chronic injury, identified by necrotic patterns or with other pigmented patterns.
- Physiological effects, identified by growth alterations, reduced yields, and changes in the quality of plant products. The acute symptoms are generally characteristic of a specific photochemical oxidant; though chronic injury patterns are not. Ozone injury to leaves is identified as a stripling or flecking. Adverse effects on sensitive vegetation have been observed from exposure to photochemical oxidant concentrations of about 100 micrograms per cubic meter ($ug/m^{3)}$ or 0.05 parts per million (ppm) for four hours.

Adverse effects on materials (rubber products and fabrics) from exposure to photochemical oxidants have not been precisely quantified, but have been observed at the levels presently occurring in many urban atmospheres.

Ozone accelerates the aging of many materials, resulting in rubber cracking, dye fading and paint erosion. These effects are linearly related to the total dose of ozone and can occur at very low levels, given long duration exposures.

Ozone is a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues and respiratory functions. Clinical and epidemiological studies have demonstrated that ozone impairs the normal mechanical function of the lung, causing alterations in respiration; the most characteristic of which are shallow, rapid breathing and a decrease in pulmonary compliance. Exposure to ozone results in clinical symptoms such as chest tightness, coughing, and wheezing.

Alterations in airway resistance can occur, especially to those with respiratory diseases (asthma, bronchitis, emphysema). These effects may occur in sensitive individuals, as well as in those persons exercising, at short-term ozone concentrations between 0.15 and 0.25 ppm.

Ozone exposure increases lung sensitivity to bronchoconstrictive agents such as histamine, acetylcholine and allergens, as well as increasing an individual's susceptibility to bacterial infection. Simultaneous exposure to ozone and SO_2 can produce larger changes in pulmonary function than exposure to either pollutant alone.

Peroxyacetylnitrate (PAN) is an eye irritant, and its effects often occur in conjunction with the effects of ozone.

Two characteristics of ozone and oxidant exposures should be cited:

- Ozone itself is a primary cause of most of the health effects reported in toxicological and experimental human studies and the evidence for attributing many health effects to this substance alone is very compelling.
- The complex interaction of atmospheric photochemical substances is known to produce health effects, some of which are not attributable to pure ozone but may be caused by other photochemical substances in combination with ozone.

Particulate Matter (PM)

Not all air pollutants are in the gaseous form. Small solid particles and liquid droplets, collectively called particulates or aerosols, are also present in the air in great numbers and may constitute a pollution problem.

Particulates entering the atmosphere differ in size and chemical composition. The effects of particulates on health and welfare are directly related to their size and chemical composition.

Particulate matter in the atmosphere consists of solids, liquids, and liquids-solids in combination. Suspended particulates generally refer to particles less than 100 micrometers in diameter (human hair is typically 100 micrometers thick). Particles larger than 100 micrometers will settle out of the air under the influence of gravity in a short period of time.

Typical sources emitting particles into the atmosphere are combustion of fossil fuels (ash and soot), industrial processes (metals, fibers, etc.), fugitive dust (wind and mechanical erosion of local soil) and photochemically produced particles (complex chain reactions between sunlight and gaseous pollutants). Combustion and photochemical products tend to be smaller in size (less than 1 micrometer); fugitive dust and industrial products are typically larger in size (greater than 1 micrometer).

Particles which cause the most health and visi-

bility difficulties are those less than 1.0 micrometer in size. These particles are also the most difficult to reduce in numbers by the various industrial removal techniques. Rainfall accounts for the major removal of these smaller particles from the air.

One of the major problems associated with high concentrations of particulates is that the interaction between the particles, sunlight and atmospheric moisture can potentially result in the climatic effects and diminished visibility (haze). Particles play a key role in the formation of clouds, and emissions of large numbers of particles can, in some instances, result in local increases in cloud formation and, possibly, precipitation.

Particles in the size range of 0.1 to 1.0 micrometers are the most efficient in scattering visible light (wave length 0.4 to 0.7 micrometers) thereby reducing visibility. Particles combined with high humidity can result in the formation of haze, which can cause hazardous conditions for the operation of motor vehicles and aircraft.

Particulate pollutants enter the human body by way of the respiratory system and their most immediate effects are upon this system. The size of the particle determines its depth of penetration into the respiratory system. Particles over 5 micrometers are generally deposited in the nose and throat. Those that do penetrate deeper in the respiratory system to the air ducts (bronchi) are often removed by ciliary action. Particles ranging in size from 0.5 - 5.0 micrometers in diameter can be deposited in the bronchi, with few reaching the air sacs (alveoli). Most particles deposited in the bronchi are removed by the cilia within hours. Particles less than 0.5 micrometer in diameter reach and may settle in the alveoli. The removal of particles from the alveoli is much less rapid and complete than from the larger passages. Some of the particles retained in the alveoli are absorbed into the blood.

Besides size, the oxidation state, chemical composition, concentration and length of time in the respiratory system contribute to the health effects of particulates. Particulates have been associated with increased respiratory diseases (asthma, bronchitis, emphysema), cardiopulmonary disease (heart attack) and cancer.

Plant surfaces and growth rates may be adversely affected by particulate matter. Particulate air pollution also causes a wide range of damage to materials including corrosion of metals and electrical equipment and the soiling of textiles and buildings.

Sulfur Dioxide (SO_2)

Sulfur dioxide is an atmospheric pollutant which results from combustion processes (mainly burning of fossil fuels containing sulfur compounds), refining of petroleum, manufacture of sulfuric acid and smelting of ores containing sulfur. Reduction of sulfur dioxide levels can be achieved through the use of low sulfur content fuels or chemical sulfur removal.

Once in the atmosphere, some sulfur dioxide can be oxidized (either photochemically or in the presence of a catalyst) to SO_3 (sulfur trioxide). In the presence of water vapor, SO_3 is readily converted to sulfuric acid mist. Other basic oxides combine with SO_3 to form sulfate aerosols. Sulfuric acid droplets and other sulfates are thought to account for about 5 to 20

percent of the total suspended particulate matter in urban air. These compounds can be transported long distances and come back to earth as a major constituent of acid precipitation. Many health problems attributed to SO_2 may be a result of the oxidation of SO_2 to other compounds.

The health effects of SO_2 are irritation and inflammation of tissue that it directly contacts. Inhalation of SO_2 causes bronchial constriction resulting in an increased resistance to air flow, reduction of air volume and an increase of respiratory rate and heart rate.

SO_2 can exacerbate pre-existing respiratory diseases (asthma, bronchitis, emphysema). The enhancement (synergism) by particulate matter of the toxic response to sulfur dioxide has been observed under conditions which would promote the conversion of sulfur dioxide to sulfuric acid. The degree of enhancement is related to the concentration of particulate matter. A twofold to threefold increase of the irritant response to sulfur dioxide is observed in the presence of particulate matter capable of oxidizing sulfur dioxide to sulfuric acid.

Sulfuric acid (H_2SO_4) inhalation causes an increase in the respiratory system's mucous secretions, which reduces the system's ability to remove particulates via mucociliary clearance. This can result in an increase incidence of respiratory infection.

Carbon Monoxide (CO)

The major source of carbon monoxide is motor vehicles. The U.S. EPA has kept under its jurisdiction the regulation of emission control equipment on new motor vehicles while the state's responsibility for reducing excessive ambient carbon monoxide levels is exercised by developing transportation plans for congested urban areas.

The toxic effects of high concentrations of CO on the body are well known. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin (the oxygen carrying molecule in the blood) to form carboxyhemoglobin (COHb). This reaction reduces the oxygen carrying capacity of blood because the affinity of hemoglobin for CO is over 200 times that for oxygen. The higher the percentage of hemoglobin bound up in the form of carboxyhemoglobin, the more serious is the health effect.

The level of COHb in the blood is directly related to the CO concentration of the inhaled air. For a given ambient air CO concentration, the COHb level in the blood will reach an equilibrium concentration after a sufficient time period. This equilibrium COHb level will be maintained in the blood as long as the ambient air CO level remains unchanged. However, the COHb level will slowly change in the same direction as the CO concentration of the ambient air as a new equilibrium of CO in the blood is established.

The lowest CO concentrations shown to produce adverse health effects result in aggravation of cardiovascular disease. Studies demonstrate that these concentrations have resulted in decreased exercise time before the onset of pain in the chest and extremities of individuals with heart or circulatory disease. Slightly higher CO levels have been associated with decreases in vigilance, the ability to discriminate time intervals and exercise performance.

Evidence also exists indicating a possible relationship between CO and heart attacks, the development of cardiovascular disease and fetal development.

Studies on the existing ambient levels of CO do not indicate any adverse effects on vegetation, materials, or other aspects of human welfare.

Nitrogen Dioxide (NO_2)

Nitrogen gas (N_2) is an abundant and inert gas which makes up almost 80 percent of the earth's atmosphere. In this form, it is harmless to man and essential to plant metabolism. Due to its abundance in the air, it is a frequent reactant in many combustion processes. When combustion temperatures are extremely high, as in the burning of coal, oil, gas and in automobile engines, atmospheric nitrogen (N_2) may combine with molecular oxygen (O_2) to form various oxides of nitrogen (NO_x). Of these, nitric oxide (NO) and nitrogen dioxide (NO_2) are the most important contributors to air pollution; NO_x generally is used to represent these.

Nitric oxide (NO) is a colorless and odorless gas. It is the primary form of NO_x resulting from the combustion process. NO_x contributes to haze and visibility reduction. NO_x is also known to cause deterioration and fading of certain fabrics and damage to vegetation. Depending on concentration and extent of exposure, plants may suffer leaf lesions and reduced crop yield.

Sensitivity of plants to nitrogen oxides depends on a variety of factors including species, time of day, light, stage of maturity and the presence or absence of other air pollutants such as sulfur dioxide and ozone.

There is a lack of strong evidence associating health effects with most nitrogen oxide compounds. NO_2, a secondary derivative of atmospheric nitric oxide, however, has been clearly established as exerting detrimental effects on human health and welfare.

NO_2 can cause an impairment of dark adaptation at concentrations as low as 0.07 ppm. NO_2 can cause an increase in airway resistance, an increase in respiratory rate, an increase in sensitivity to bronchoconstrictors, a decrease in lung compliance and an enhanced susceptibility to respiratory infections. NO_2 is a deep lung irritant capable of producing pulmonary edema if inhaled in sufficient concentrations. When NO_2 is inhaled in concentrations with other pollutants, the effects are additive.

NO_x may also react with water to form corrosive nitric acids, a major component of acid precipitation. Additionally, NO_x and various other pollutants (e.g., hydrocarbons) may react in the presence of sunlight to product photochemical oxidants. These are extremely unstable compounds which damage plants and irritate both the eyes and respiratory system of people. Ozone and a group of chemicals called peroxyacetylnitrates are the major constituents of photochemical oxidants.

Lead (Pb)

Historically, atmospheric lead came primarily from combustion of leaded gasoline. However, the use of unleaded gas since 1975 has reduced mobile source lead emissions by more than 90 percent. Currently, stationary sources such as lead smelters, battery manufacturers and iron and steel producers can contribute significant amounts of lead to their immediate vicinity.

Lead is a stable compound which persists and accumulates both in the environment and in the human body. Lead enters the human body through ingestion and inhalation with consequent absorption into the blood stream and distribution to all body tissues. Clinical, epidemiological and toxicological studies have demonstrated exposure to lead adversely affects human health.

Low-level lead exposure has been found to interfere with specific enzyme systems and blood production. Kidney and neurological cell damage has also been associated with lead exposure. Animal studies have demonstrated that lead can contribute to reduced fertility and birth defects. Children are the population segment most sensitive to many of lead's adverse effects.

Other serious potential effects from lead exposure are behavioral. Brain damage has been well documented in cases of severe lead poisoning in children. Restlessness, headaches, tremors and general symptoms of mental retardation have been noted. The brain seems to be particularly sensitive to lead poisoning, yet it is unclear whether low level exposure will result in brain dysfunction. Although evidence exists which indicates that children with above-normal blood lead levels are more likely to demonstrate poor academic performance, the studies remain inconclusive.

Table 1: Summary of National and Illinois Ambient Air Quality Standards

Pollutant	Averaging Time	Standard at 25°C and 760 mm Hg Primary	Secondary
Standard units are micrograms per cubic meter (ug/m^3), parts per million (ppb) and milligrams per cubic meter (mg/m^3)			
Particulate Matter	Annual Arithmetic Mean	**50 ug/m^3**	Same as Primary
10 micrometers (PM_{10})	24-hour	**150 ug/m^3**	Same as Primary
***Particulate Matter**	Annual Arithmetic Mean	**15.0 ug/m^3**	Same as Primary
2.5 micrometers ($PM_{2.5}$)	24-hour	**65 ug/m^3**	Same as Primary
Sulfur Dioxide	Annual Arithmetic Mean	**0.03 ppm (80 ug/m3)**	None
	24-hour	**0.14 ppm (365 ug/m3)**	None
	3-hour	**None**	0.5 ppm (1300 ug/m3)
Carbon Monoxide	8-hour	**9 ppm (10 mg/m^3)**	Same as Primary
	1-hour	**35 ppm (40 mg/m^3)**	Same as Primary
Ozone	1-hour/day	**0.12 ppm**	Same as Primary
***Ozone**	8-hour/day	**0.08 ppm**	Same as Primary
Nitrogen Dioxide	Annual Arithmetic Mean	**0.053 ppm (100 ug/m^3)**	Same as Primary
Lead	Quarterly Arithmetic Mean	**1.5 ug/m^3**	Same as Primary

All PM_{10} and $PM_{2.5}$ standards are referenced at local conditions of temperature and pressure rather than standard conditions.
Note: The State of Illinois has not adopted the $PM_{2.5}$ and ozone 8-hour standards at this time.

Table 2: Illinois Air Pollution Episode Levels

Pollutant	Advisory	Yellow Alert	Red Alert	Emergency
Particulate Matter				
measured in micrograms per cubic meter (ug/m^3)	2-hour 420 (ug/m^3)	24-hour 350 (ug/m^3)	24-hour 420 (ug/m^3)	24-hour 500 (ug/m^3)
Sulfur Dioxide				
measured in parts per million (ppm)	2-hour 0.30 ppm	4-hour 0.30 ppm	4-hour 0.35 ppm	4-hour 0.40 ppm
Carbon Monoxide				
measured in parts per million (ppm)	2-hour 30 ppm	8-hour 15 ppm	8-hour 30 ppm	8-hour 40 ppm
Nitrogen Dioxide				
measured in parts per million (ppm)	2-hour 0.40 ppm	1-hour 0.60 ppm **or** 24-hour 0.15 ppm	1-hour 1.20 ppm **or** 24-hour 0.30 ppm	1-hour 1.60 ppm **or** 24-hour 0.40 ppm
Ozone				
measured in parts per million (ppm)	1-hour 0.12 ppm	1-hour 0.20 ppm	1-hour 0.30 ppm	1-hour 0.50 ppm

Illinois Ambient Air Quality Standards and Episode Levels

Consistent with the intent of the Environmental Protection Act of Illinois, the state of Illinois has adopted ambient air quality and episode standards that specify maximum permissible short-term and long-term concentrations of various contaminants in the atmosphere. Ambient air quality and episode standards are limits on atmospheric concentrations of air contaminants established for the purpose of protecting the public health and welfare.

The Illinois and National Ambient Air Quality Standards consist of a primary and secondary standard for each pollutant (contaminant) as presented in **Table 1**. The Illinois Air Pollution Episode Levels are presented in **Table 2**.

The primary standard and episode criteria represents the level of air quality which is necessary to protect the public health. Air entering the respiratory tract must not menace health. Therefore, the air quality standards must, as a minimum, provide air which will not adversely affect, through acute or chronic symptoms, the public health.

Air contaminants increase the aggravation and the production of respiratory and cardio-pulmonary diseases. The secondary standard defines the level of air quality which is necessary to protect the public welfare. This includes, among other things, effects on crops, vegetation, wildlife, visibility and climate, as well as effects on materials, economic values and on personal comfort and well-being.

The standards are legally enforceable limitations, and any person causing or contributing to a violation of the standards is subject to enforcement proceedings under the Environmental Protection Act.

The standards have also been designed for use as a basis for the development of implementation plans by state and local agencies for the abatement and control of pollutant emissions from existing sources, and for the determination of air contaminant emission limitations to ensure that population, industry and economic growth trends do not add to the region's air pollution problems.

SECTION 2: STATEWIDE SUMMARY OF AIR QUALITY FOR 1998

Ozone

Monitoring was conducted at 42 locations during at least part of the April-October ozone season and at least 75 percent data capture was obtained at all 42 sites. The only monitoring network change in 1998 was a new site added in Chicago at Truman College.

A total of three sites recorded hourly concentrations above the 0.12 parts per million (ppm) standard. All three sites (Evanston, East St. Louis and Jerseyville) recorded only one day with ozone above 0.12 ppm.

There was one exceedance days recorded in the Chicago area, one exceedance day recorded in the Metro-East and one exceedance day in Jersey County (downwind of the St. Louis area). The highest one-hour concentration was 0.140 ppm in East St. Louis compared with a statewide high one-hour value of 0.157 ppm in 1997. The highest value recorded in the Chicago area was 0.133 ppm in Evanston

Data is also presented to compare with the new 8-hour standard of 0.08 ppm. The appropriate statistic for comparison with the eight-hour standard is the fourth highest value that is averaged over a three-year period. A total of five sites (three in the Chicago area, one in the Metro-East area and one in Jersey County) had fourth highest values above 0.08 ppm in 1998. The highest fourth high value was 0.091 ppm in Jerseyville.

Figure 1 shows each year's statewide average of each site's highest hourly ozone value during 1989-1998. The graph shows a great deal of year-to-year fluctuation; however the overall direction is downward. The statewide average for 1998 was 0.102 ppm, compared with 0.104 ppm in 1997 and 0.107 ppm in 1996.

Figure 1

Average One-hour Ozone Maximum (ppm)

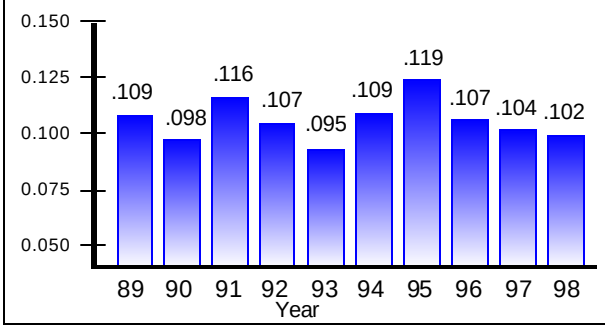
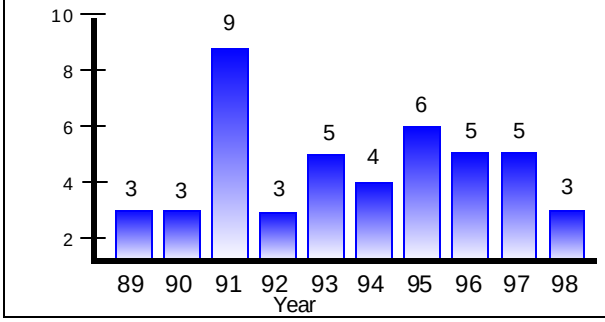


Figure 2

Statewide Ozone Exceedance Day Trend



Statewide, the total number of excursion days in 1998 was three, compared with five in 1997 and five in 1996.

Figure 2 shows the trend of the total number of days on which one or more sites exceeded the ozone standard in Illinois for the same period 1989-1998. This trend is generally flat with the conducive years of 1991 and 1995 standing out.

Overall, Illinois's weather was fairly normal in terms of meteorological conditions favorable to ozone formation and transport in the Metro-East area in 1998 and above normal in the Chicago area.

September was the most conducive month in terms of meteorological conditions statewide. In terms of conducive days, the Chicago area had 30 percent above the normal number and the Metro-East area had near the normal number.

Particulate Matter

In 1998 there were 43 sites monitoring PM_{10}. **Figure 3** shows the statewide annual averages trend for PM_{10} from 1989-1998. The statewide average in 1998 was 30 ug/m^3 compared with 28 ug/m^3 in 1997 and 27 ug/m^3 in 1996.

The statewide average of the maximum 24-hour averages in 1998 was 73 ug/m^3 compared with 71 ug/m^3 in 1997 and 75 ug/m^3 in 1996. **Figure 4** depicts this trend for the period 1989-1998.

Figure 3

Particulate Matter Annual Trends (ug/m³)

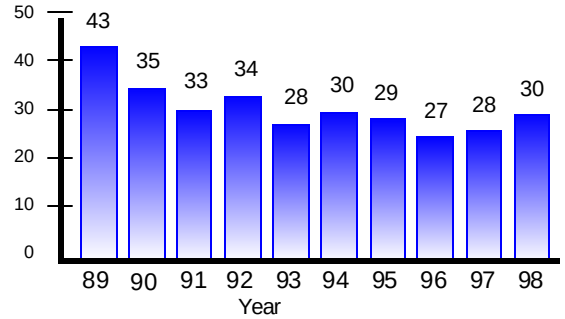
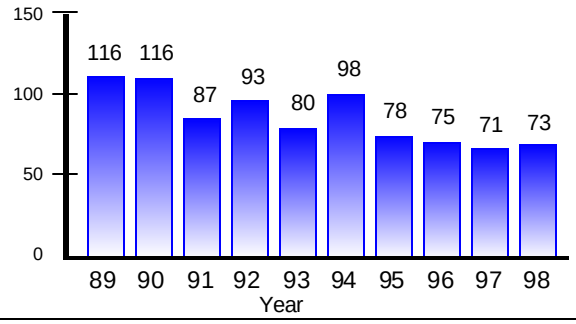


Figure 4

Particulate Matter 24-hour Trends (ug/m³)



No sites exceeded the primary annual standard of 50 ug/m^3. The highest annual average was 46 ug/m^3 in Granite City - 15th and Madison. The lowest annual was 22 ug/m^3 in Nilwood and Quincy. Only one site recorded exceedances of the 24-hour standard of 150 ug/m^3: Oglesby. The highest 24-hour average recorded in Oglesby was a value of 168 ug/m^3 compared with a high 24-hour value of 157 ug/m^3 in 1997.

In addition to PM_{10}, monitoring was conducted at 10 sites for $PM_{2.5}$. Eight sites used dichotomous samplers to measure $PM_{2.5,}$ which are not Federal Reference Method (FRM) samplers and the results are not appropriate to compare with the new $PM_{2.5}$ standards. The other two sites, Chicago - Mayfair and Northbrook, used early versions of the FRM samplers.

Annual averages ranged from 14.0 ug/m^3 to 19.5 ug/m^3. The maximum 24-hour average was 56.5 ug/m^3. The $PM_{2.5}$ monitoring net-

work using final-version FRM samplers was phased in late in 1998 with completion by the end of 1999.

Carbon Monoxide

There were no exceedances of either the one-hour primary standard of 35 ppm or the eight-hour primary standard of 9 ppm in 1998.

The highest one-hour average was 10.2 ppm, recorded in Springfield. The highest eight-hour average was 6.5 ppm, recorded in Peoria.

Figure 5

Carbon Monoxide Trends (ppm)

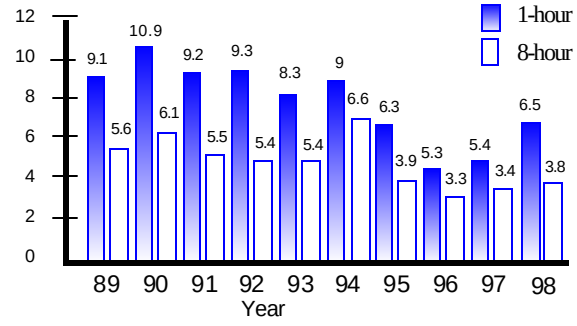


Figure 5 shows the statewide average trend for 1989-1998 of the one-hour and eight-hour high CO values. The overall trend for both averages is downward. The statewide average of the one-hour high was 6.5 ppm in 1998 compared with 5.4 ppm in 1997. The statewide average for the eight-hour high was 3.8 ppm in 1998 compared with 3.4 ppm in 1997.

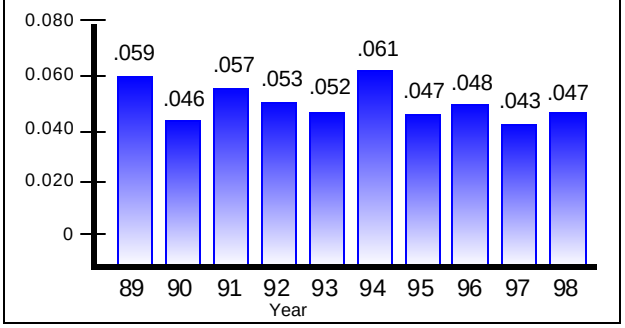
Sulfur Dioxide

There were no exceedances of the 24-hour primary standard of 0.14 ppm or the annual primary standard of 0.03 ppm recorded in Illinois in 1998. There was one exceedance of the three-hour secondary standard recorded at Marissa.

The highest 24-hour average was 0.125 ppm, recorded in Pekin, compared with 0.089 ppm in 1997. The highest three-hour average of 0.656 ppm was recorded in Marissa. The statewide annual average for 1998 was 0.005 ppm. The statewide average in 1997 and in 1996 was 0.006 ppm.

Figure 6

Sulfur Dioxide 24-hour Trend



Since 1984 the trend of annual averages has been flat, ranging from 0.009 ppm to 0.005 ppm. **Figure 6** shows the statewide trend for the maximum 24-hour averages for the period 1989-1998

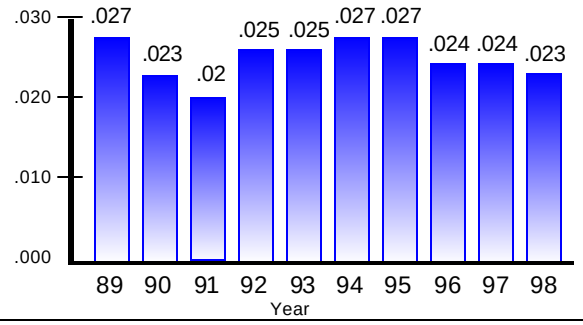
The 24-hour average trend has been overall downward; however, a greater degree of year-to-year fluctuations has occurred. The statewide average for 1998 was 0.047 ppm compared with the 1997 average of 0.043 ppm.

Nitrogen Dioxide

There were no violations of the annual primary standard of 0.053 ppm recorded in Illinois during 1998.

Figure 7

Nitrogen Dioxide Annual Trend (ppm)



The highest annual average of 0.032 ppm was recorded at Chicago-CTA. The statewide average for 1998 was 0.023 ppm, compared with 0.024 ppm in both 1997 and 1996.

Two sites operated during part of the ozone season as a photochemical assessment monitoring site (PAMS). **Figure 7** depicts the trend of statewide averages from 1989-1998. The trend has been generally stable for the period, ranging from 0.020 ppm to 0.027 ppm. There have been no violations of the annual standard since 1980.

Lead

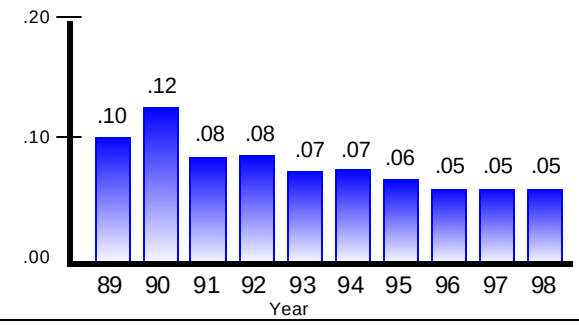
Perhaps the greatest success story in controlling criteria pollutants is lead.

As a direct result of the Federal Motor Vehicle Control Program, which has required the use of unleaded gas in automobiles since 1975, lead levels have decreased by more than 90 percent statewide.

The source-oriented sites at Chemetco continue to record the highest quarterly lead averages in the state in 1998.

Figure 8

Lead Maximum Quarterly Trend (ug/m3)



One site in the Chemetco network (Site 1-N) recorded a total of one violation of the quarterly primary standard of 1.5 ug/m^3 in 1998.

The highest quarterly lead average was measured at Chemetco - Site 1-N with a value of 2.59 ug/m^3.

Figure 8 shows the statewide maximum quarterly average trend from 1989-1998, not including the industrial sites. The trend shows that ambient lead levels have decreased by more than 50 percent during the period.

FIlter Analysis Results

The total suspended particulates (TSP) samples were analyzed for (in addition to lead) specific metals, sulfates and nitrates. Several of the metals analyzed (arsenic, beryllium, cadmium, chromium and nickel) have known toxic properties.

Other metals such as iron and manganese can be used as tracers to help identify sources of high particulate values. Sulfates and nitrates are precursors of acid precipitation/deposition and add to the understanding of this inter-regional problem. They may also be important constituents of $PM_{2.5}$ values. There are currently no state or federal ambient air quality standards for these parameters.

The areas with the highest metals concentrations in Illinois are generally the heavy industrialized areas of the Metro East (Granite City and East St. Louis) and South Chicago, especially for iron and manganese.

The highest 24-hour average for arsenic was 0.147 ug/m^3 measured in Granite City - 15th and Madison. The highest annual average of 0.006 ug/m^3 was recorded at the same site There were no measurable beryllium 24-hour averages recorded statewide.

East St. Louis recorded the highest cadmium concentrations with the maximum 24-hour average of 0.054 ug/m^3 and the highest annual average of 0.006 ug/m^3. The highest 24-hour chromium average was 0.038 ug/m^3 recorded at Granite City - 2044 Washington. Maywood had the highest annual average at 0.012 ug/m^3.

The highest iron and manganese values were recorded in the industrial areas of Granite City and South Chicago and the high-traffic areas of Chicago - Cermak and Maywood.

The highest 24-hour nickel average was recorded at Wood River at 0.116 ug/m^3. The highest annual average was in Maywood with an average of 0.011 ug/m^3.

All selenium 24-hour averages were less than 0.010 ug/m^3.

The highest 24-hour value for vanadium was 0.026 ug/m^3 recorded in Granite City - 2044 Washington. The highest annual average of 0.007 ug/m^3 was also recorded at 2044 Washington in Granite City.

For nitrates the highest 24-hour average was 24.9 ug/m^3 recorded in Rockford. The highest annual average was 6.6 ug/m^3 at Chicago - Cermak and Schiller Park.

For sulfates the highest 24-hour average was 31.0 ug/m^3 recorded at Granite City - 2044 Washington. The highest annual average was 10.7 ug/m^3 also at Granite City - 2044 Washington.

Volatile Organic Compounds Data

Sampling began in 1993 for volatile organic compounds as part of the photochemical assessment monitoring site (PAMS) network. These are required in the Chicago area as part of determining future controls for meeting the ozone standard. The network was completed in 1997 with four sites: Braidwood - Type 1 background, Chicago - Jardine - Type 2 source area, Northbrook - Type 3 peak ozone area and Zion - Type 4 domain edge.

Sampling was conducted for the period June - August. Automated Gas Chromatograph (GC) systems providing hourly data were located at three sites: Braidwood, Northbrook and Zion. The Chicago - Jardine site experienced operational problems with the auto gc and the data in this record is based on manual canister samples, which were taken on the every-six-day particulate schedule. In addition, at all four sites, manual carbonyl samples were taken

every sixth day (every three days at Chicago - Jardine) and supplemented on high ozone days. The data is presented as parts per billion carbon (ppbc). This process reduces all of the results to a common basis in terms of single carbon atoms. The aldehydes are expressed in regular parts per billion volume.

The highest compounds in terms of 24-hour averages at Chicago - Jardine were Isopentane, Isobutane, N-Butane, M/P-Xylene, Ethylene, Toluene and Cis-2-Butene. The lowest compounds were Isoprene, Methylheptanes, ethyltoluenes and pentenes.

The highest compounds for one-hour and 24-hour averages at Northbrook were Isopentane, Toluene, Ethylbenzene, Isoprene, M/P Xylene, Ethane 2,2,4-Trimethylpentane and N-Pentane. The lowest compounds were Butenes, Pentenes, Methylheptanes, Diethylbenzenes and Ethyltoluenes.

The highest compounds for one-hour and 24-hour averages at Zion were Isopentane, Ethane, Propane, Isoprene, N-Pentane, M/P Xylene, Formaldehyde and Toluene. The lowest compounds were Butenes, Pentenes, Methylheptanes, Diethylbenzenes and Ethyultoluenes.

The highest one-hour and 24-hour compounds at Braidwood were Propane, Ethane, Ethylene, Isopentane, 3-Methylpentane, Isobutane and Formaldehyde. There were numerous compounds that had minimal detection at Braidwood.

Mercury Data

Mercury data is being collected at two sites in Cook County as part of the Robbins Incinerator Network. The mercury is being collected in the vapor phase rather than analyzing filters for particulate mercury. The samples are collected for 24 hours. The highest 24-hour sample was 3.5 ng/m^3 at Blue Island. The highest annual average was 2.0 ng/m^3, also at Blue Island. The annual average at Alsip was 1.7 ng/m^3.

SECTION 3: POLLUTANT STANDARDS INDEX

The Pollutant Standards Index (PSI) is the national standard method for reporting air pollution levels to the public. An index such as the PSI is necessary because there are several air pollutants, each with different typical ambient concentrations and each with different levels of harm, and to report actual concentrations for all of them would be confusing. The PSI uses a single number and a one or two-word term to describe the air quality, taking all the pollutants into account.

The PSI is based on the short-term federal National Ambient Air Quality Standards (NAAQS), the federal episode criteria, and the Federal Significant Harm levels for five of the "criteria pollutants," namely:

- Ozone (O_3)
- Sulfur dioxide (SO_2)
- Carbon monoxide (CO)
- Particulate matter (PM_{10})
- Nitrogen dioxide (NO_2)

In each case, the short-term primary NAAQS corresponds to a PSI of 100, the significant harm level corresponds to a PSI of 500, and the episode criteria correspond to intermediate hundreds. NO_2 does not have short-term NAAQS; PSI begins at 200 for it. Various PSI intervals have been given Descriptor Categories, see **Table 3**.

Unhealthful air quality is uncommon in Illinois, and very unhealthful air quality is rare. There has never been an occurrence of hazardous air quality in Illinois.

The PSI is computed as follows: data from pollution monitors in an area are collected, and the PSI subindex for each pollutant is computed using formulas derived from the index/concentration relations noted above. Nomograms and tables are also available for this purpose. The data used are:

- O_3 the highest 1-hour average so far that calendar day
- SO_2 the most recent 24-hour average
- CO the highest 8-hour average so far that calendar day
- PM_{10} the most recent 24-hour average
- NO_2 the highest 1-hour average (if above 600 ppb)

Continuous monitors are necessary for all the pollutants except PM_{10}. Continuous PM_{10} monitors may be used, but usually a high volume air sampler is the PM_{10} monitor.

Once all the subindices for the various pollutants have been computed, the highest is chosen by inspection. That is the PSI for the area, and the pollutant giving rise to it is the "critical pollutant."

For Anytown, Ill., we obtained the following subindices:

O_3 = 45
SO_2 = 23
CO = 19
PM_{10} = 61

Table 3: PSI Descriptor Categories and Health Effects

PSI Range	Descriptor Category
0-50	Good (G)
51-100	Moderate (M)
101-199	Unhealthful (UH)
200-299	Very Unhealthful (VUH)
300 and above	Hazardous (HAZ)

Index and Category	Health Effects	Cautionary Statements
101-199, Unhealthful	Mild aggravation of symptoms in susceptible persons, with irritation in the general population.	Persons with existing heart or respiratory ailments should reduce physical exertion and outdoor activity.
200-299, Very Unhealthful	Significant aggravation of symptoms and decreased exercise tolerance in persons with heart or lung disease and widespread symptoms in the healthy population.	Elderly persons and persons with existing heart or lung disease should stay indoors and avoid physical exertion and outdoor activity
300-400, Hazardous	Premature onset of certain diseases in addition to significant aggravation of symptoms and decreased exercise tolerance in healthy persons.	Elderly persons and persons with existing diseases should stay indoors and avoid physical exertion. General population should avoid outdoor activity.
401-500, Hazardous	Premature death of ill and elderly. Healthy people will experience adverse symptoms that affect their normal activity.	All persons should remain indoors, keeping windows and doors closed. All persons should minimize physical exertion and avoid traffic.

Anytown's PSI for that day would be 61, which is in the moderate category, and the critical pollutant would be particulates.

The Illinois EPA issues the PSI for 11 areas, or sectors, in Illinois (**Table 4**). These correspond to metropolitan areas with populations greater than 200,000.

Illinois PSIs are computed from data up to and including the 2 p.m. local time readings every weekday.

A bulletin giving the PSI numbers, descriptors, critical pollutants, and a forecast of the category for the next day's PSI for each of the sectors is issued over the Illinois Weatherwire, a service of the National Weather Service, at about

3 p.m. each weekday.

Most television and radio stations and newspapers receive the Illinois Weatherwire, and are therefore able to inform the audience about the PSI either immediately or on the evening news.

In the Chicago and Cook County area, PSIs are available on phone recordings maintained by the Cook County Department of Environmental Control (708-865-6320) and the Chicago Department of the Environment (312-744-4365).

If the PSI subindex for any pollutant in any sector should reach or exceed the unhealthful (or any higher) category late in the afternoon or on weekends when the PSI is not published, the Illinois EPA puts out a special bulletin on the Illinois Weatherwire. If data for one of the pollutants used in computing PSI is missing, the PSI is computed using the data available, ignoring the missing datum. It occasionally happens that two pollutants have the same subindex; in such cases there are two critical pollutants.

1998 PSI Summary

Air quality was in the "good" category most often in 1998. All sectors had a higher frequency of "good" than "moderate" and "unhealthful." All sectors except Chicago - North and West suburbs and the Metro East had 80 percent or more of the days in the "Good" category.

Statewide there were four occurrences of unhealthful air quality in one or more sectors in 1998 compared with five in 1997 and eight in 1996. The pollutant breakdown for unhealthfuls is all four due to ozone (two in the Chicago area and two in the Metro-East). **Figure 9** presents the PSI statistics for each sector.

When each pollutant was the critical pollutant, the bar charts show the percent of days each was in a particular category. Also given is the percent of time each sector was in a particular category.

In addition to unhealthful PSI days, there were four occurrences (three days) of the first stage episode conditions (advisory) being triggered for ozone. Advisories were declared for two days in the Metro-East sector, one day in the Chicago area and one day in Jersey County.

An advisory is declared when ozone levels reach unhealthy concentrations on a particular day and meteorological conditions are such that these unhealthy levels are expected again the next day. Advisories are issued for the entire Air Quality Control Region affected by the high ozone levels.

The days for which advisories were issued in 1998 were July 20 and Sept. 4 in the Metro East, July 14 in the Chicago area and Sept. 5 in Jersey County.

Table 4: PSI Sectors in Illinois

Chicago Metropolitan Area:	
Lake County Sector	Lake County only
North Side Sector	That part of Chicago and Cook County between Lake Michigan and I-294 (the Tri-State Tollway), and north of I-290 (the Eisenhower Expressway)
Loop Sector	The area traditionally called the Loop (roughly from Navy Pier south to I-55 and east of I-90/94)
South Side Sector	That part of Chicago and Cook County south of the Eisenhower Expressway and east of the Tri-State, north of I-80/294 (Kingery Expressway), and west of Indiana and Lake Michigan
West and South Suburbs Sector	Parts of Cook and DuPage counties west of I-294 and south of the Kingery Expressway
Other northeastern Illinois areas:	
Will County/Joliet Sector	Will County only
Aurora-Elgin Sector	The eastern part of Kane County
Downstate areas:	
Rockford Sector	Approximately 10 mile diameter circle centered on downtown Rockford
Quad Cities Sector	Illinois portion of the Quad Cities area
Peoria Sector	Approximately 10 mile diameter circle centered on downtown Peoria in parts of Peoria, Woodford and Tazewell counties
Metro East Sector	Illinois portion of the St. Louis Metropolitan area approximately 15 miles wide east of the Mississippi River in Madison and St. Clair counties

Figure 9: 1998 Pollutant Standards Index Summaries by Sector

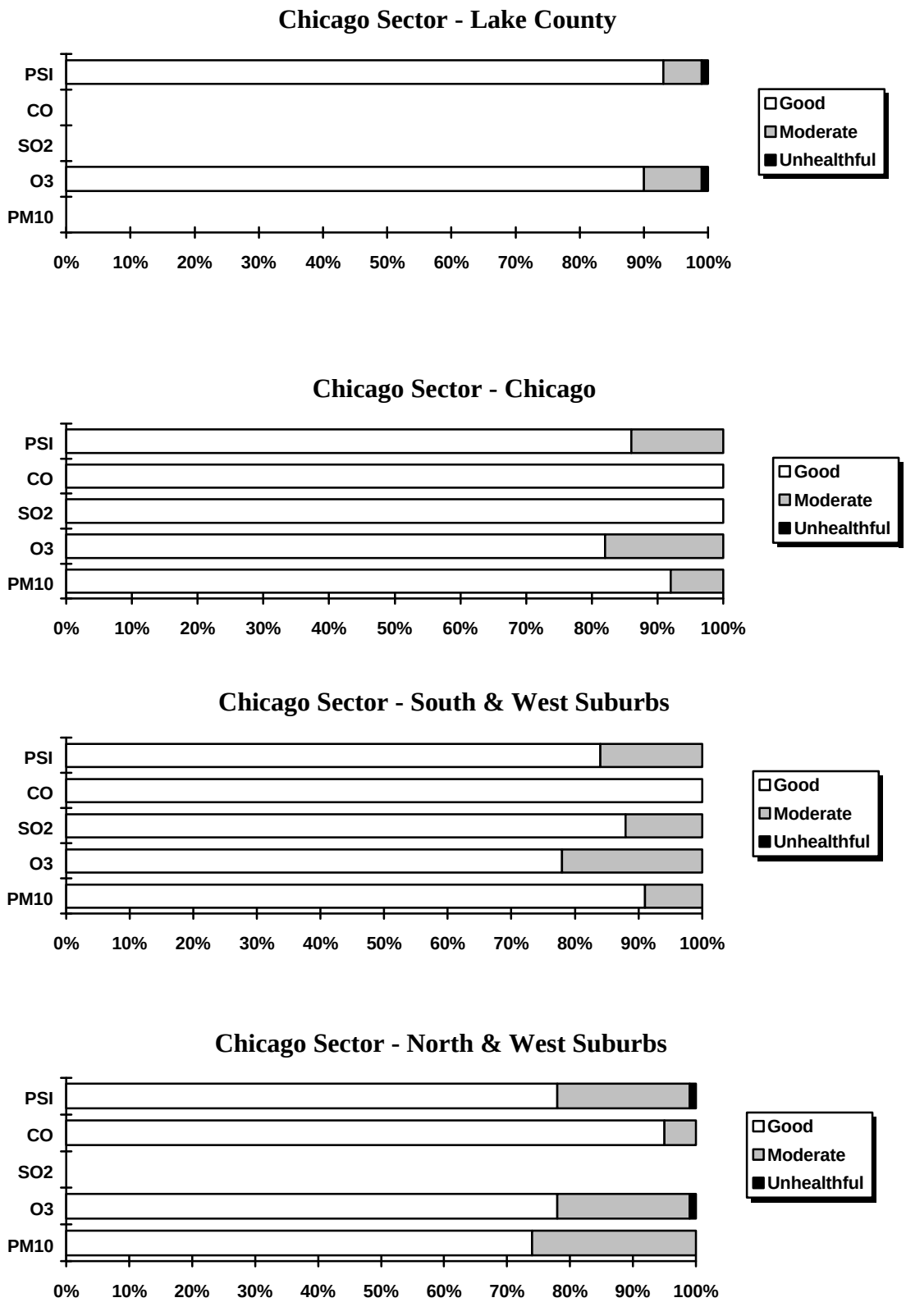


Figure 9: 1998 Pollutant Standards Index Summaries by Sector (continued)

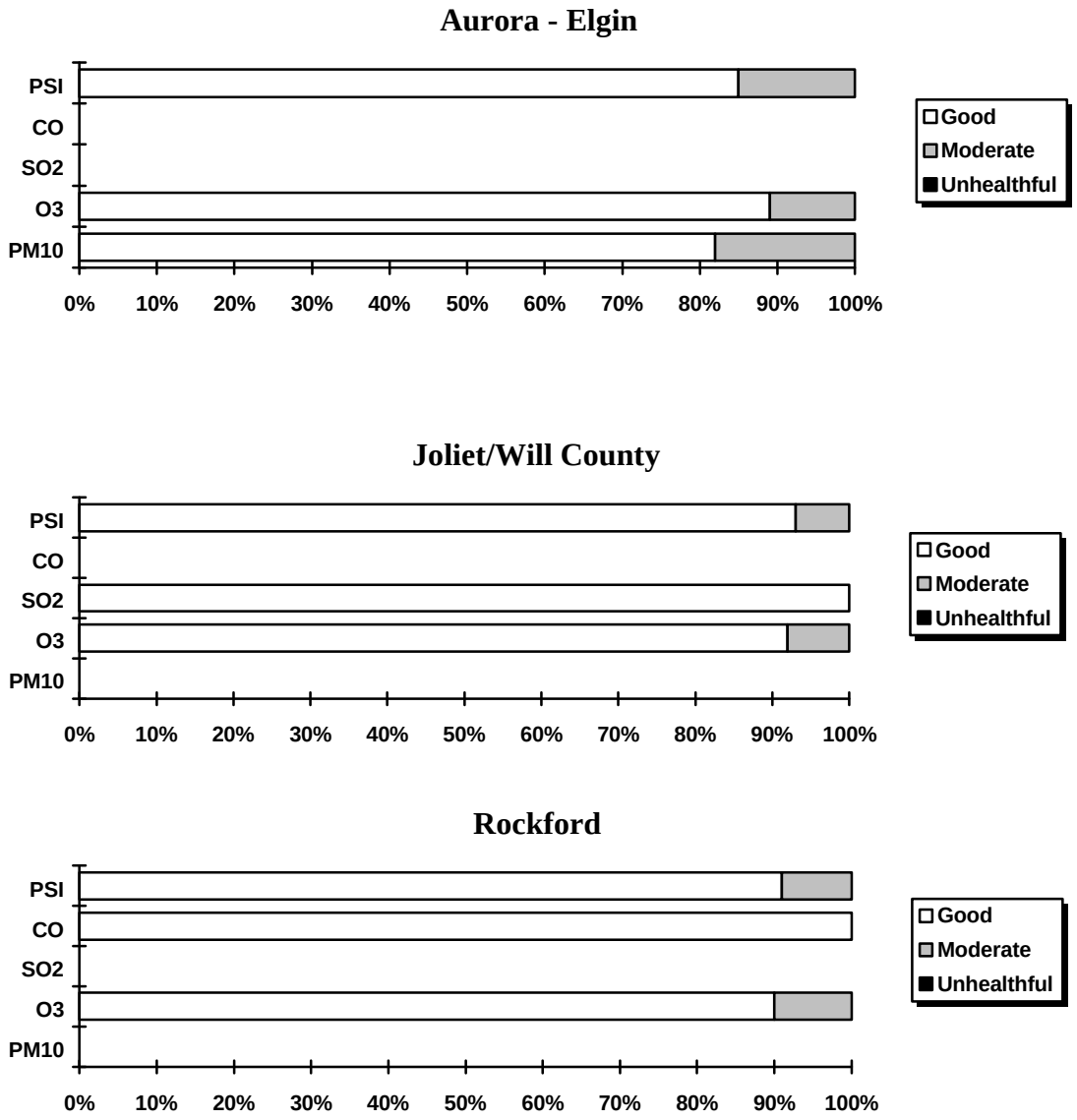
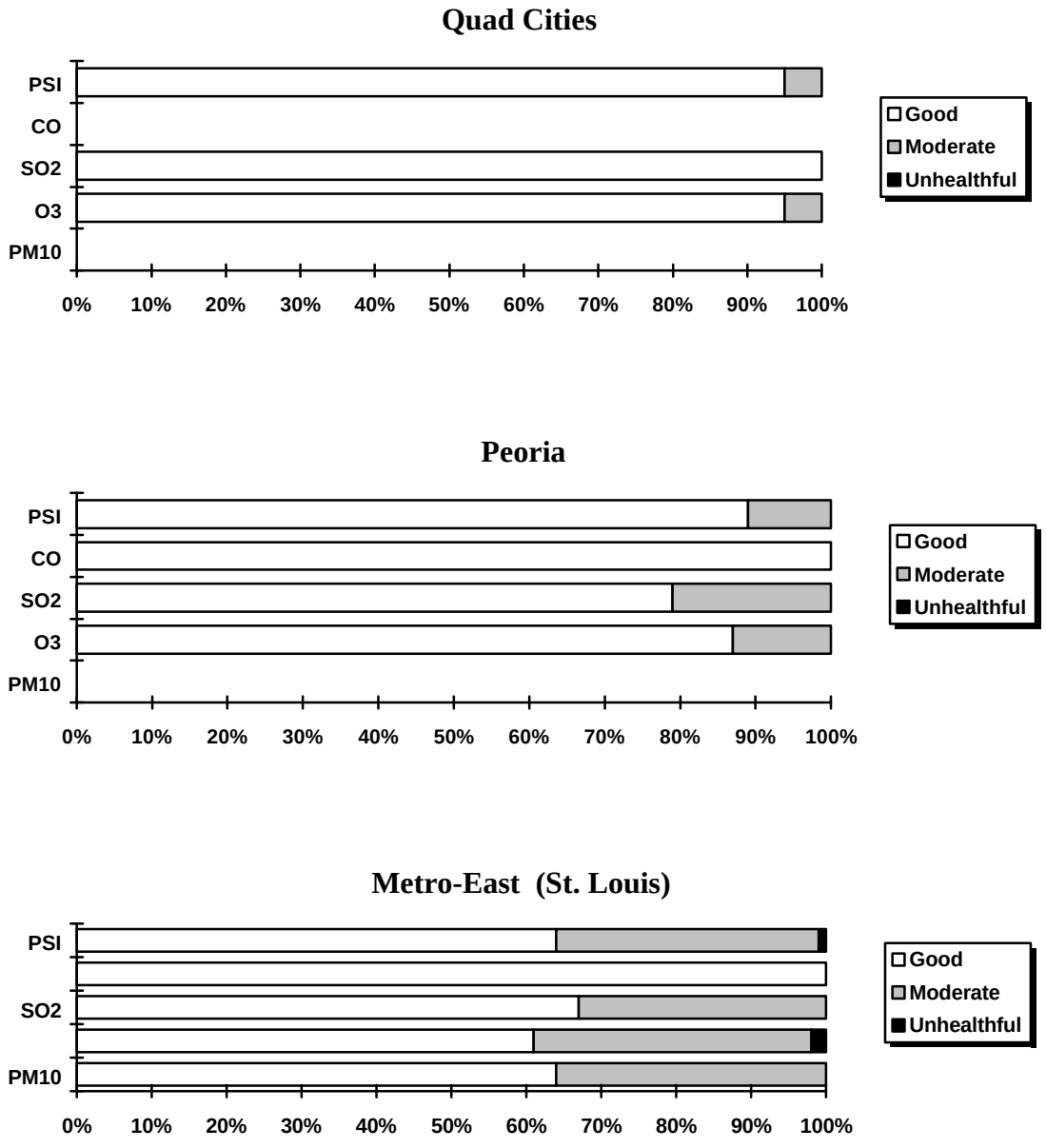


Figure 9: 1998 Pollutant Standards Index Summaries by Sector (continued)



SECTION 4: STATEWIDE SUMMARY OF POINT SOURCE EMISSIONS

Description of the Point Source Inventory

Since the late 1970s, the Division of Air Pollution Control has maintained a database of stationary point source emissions for the entire state. 40 CFR 51.211 requires Illinois to include in its State Implementation Plan "... procedures for requiring owners or operators of stationary sources to maintain records of... a) Information on the nature and amount of emissions from the stationary source and b) other information as may be necessary..."

The emission database maintained by the Division of Air Pollution Control was originally called the Total Air System (TAS). Updates to the database were made through batch transactions every two weeks. In June 1989, the TAS was replaced with an on-line system known as the Emission Inventory System (EIS). Very few new data items to be stored were added when the Division switched to the EIS. The change was mainly to get to an on-line system and to enhance the structure of the database to make it more flexible.

The EIS currently includes emission data on approximately 8,000 active sources throughout the state. The EIS data includes source addresses, source emission totals, permit data such as expiration date and status, emission unit data such as name, hours of operation, operating rate, fuel parameters and emissions, control equipment data such as control device name, type and removal efficiencies, and stack parameters.

The major source of updates to the EIS is by information contained in air permit application forms received by the Permit Section. A second method of update is from inspection data collected by the Field Operations Section. Information collected via the Annual Emissions Report is stored in a separate system, but the EIS is being updated with that information.

The Emissions Inventory Unit of the Compliance and Systems Management Section is in charge of the EIS and its data. Currently the unit is engaged in increasing the completeness of data in the system. The Emissions Inventory Unit is also responsible for establishing procedures for entry of data into the EIS.

The following is an analysis of the emissions data contained in the EIS at the end of 1998. It is important to note emissions contained in the EIS are not necessarily the actual emissions that entered the atmosphere. This is due to the fact that when an air pollution permit is applied for, the applicant provides maximum and average emission rates. The maximum emission rate reflects what the applicant believes the emission rate would be at maximum production. The average emission rate reflects emissions at the applicant's most probable production rate.

The average rate can vary from day to day and even month to month, depending upon

production schedule and demand. Also, inspections may reveal an operating rate that is only valid for that day the plant was inspected. The average emission rate can be best thought of as an estimate of emissions to the atmosphere. Through data contained in Annual Emission Reports, a better determination of actual emissions will be more readily available.

To calculate the distribution of emissions for the individual categories, the source classification code (SCC) field was used from the EIS. The SCC is an eight-digit code, provided by the U.S. EPA, that breaks emission units into logical categories. Currently there are approximately 6,000 SCCs.

The first digit of the SCC indicates the class of the emission unit, which is either external fuel combustion, internal fuel combustion, industrial processes, organic solvent emissions or waste disposal. The next two digits indicate the industry (such as fabricated metal products). Digits four, five and six indicate the process to which the emission unit belongs, while digits seven and eight indicate the source. For example, the SCC 1-01-006-01 represents external fuel combustion (1), electric generation (01), natural gas firing (006), heat input greater than 100 million BTU/hr (01).

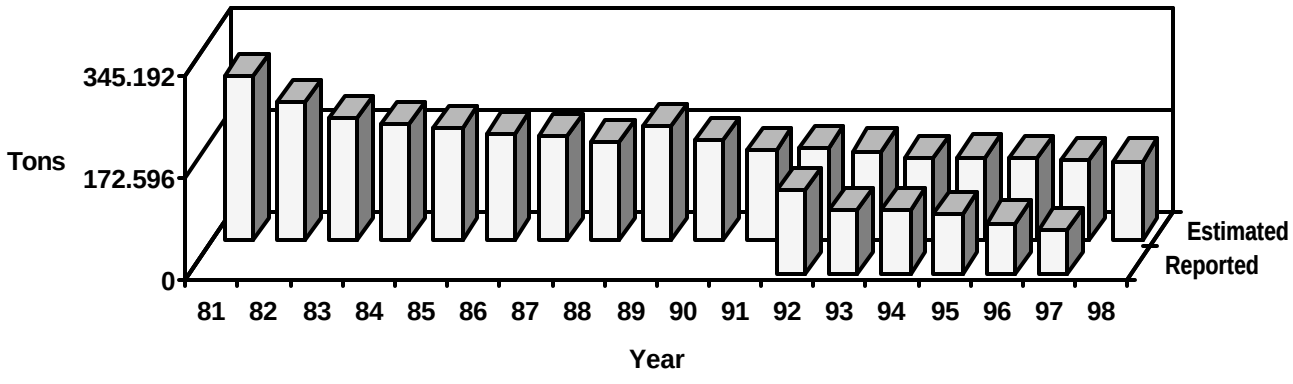
For the following tables, the first three digits of the SCC were used. Only categories that contributed significantly to the overall total are listed. The complete category breakdown can be found in **Appendix D**.

Volatile Organic Material

While air quality standards deal with ozone limits, ozone is not typically emitted from stationary sources. It is formed by the reaction of hydrocarbons, nitrogen oxides and sunlight in the atmosphere. So, emissions of volatile organic material and nitrogen oxides are more commonly regulated from stationary sources.

From **Figure 10**, emissions of volatile organic material have steadily decreased since 1981. The increase in emissions from 1988 to 1989 is due mainly to an expansion of the types of sources regulated and a more detailed inventory of those sources. These new emission regulations dealt with paint and ink manufacturing,

Figure 10: Volatile Organic Material Emission Trend in thousands of tons/year



miscellaneous fabricated product manufacturing processes, miscellaneous formulation manufacturing processes and miscellaneous organic chemical manufacturing processes. These new rules became effective April 8, 1988.

Identifying these types of sources and providing a more accurate inventory of emissions data reflects this apparent increase. In actuality, these sources were operating prior to 1989, so emissions from the period 1982 to 1988 should be increased by 20 percent to account for emissions not in the prior inventories.

Table 5 shows the distribution of volatile organic material emissions for 1998. A primary contributor to volatile organic material emissions is surface coating. Surface coating includes all painting operations (i.e. can coating, miscellaneous metal parts coating, paper coating, etc.). Coatings typically include an organic solvent which evaporates when the coating dries.

Chemical manufacturing is a significant contributor to volatile organic material emissions from the use of the many chemicals used and produced in the manufacturing process. Most of the chemical manufacturing sources are located in the Chicago and St. Louis areas.

The printing and publishing industry is more significant in Illinois than in other states, so this is reflected in its large percentage of volatile organic material emissions. Inks used by the printing and publishing industry include organic solvents which evaporate when the ink dries. Printing and publishing is

Table 5: Distribution of Volatile Organic Material Emissions for 1998

Category	Estimated Emissions in tons	Category Contribution	Cumulative Percent
Surface Coating Operations	26,998.9	20.0%	20.0%
Chemical Manufacturing	16,092.5	11.9%	31.9%
Printing/Publishing	13,145.4	9.7%	41.7%
Petroleum Product Storage	12,588.9	9.3%	51.0%
Primary Metal Production	10,951.7	8.1%	59.1%
Food/Agriculture	10,814.9	8.0%	67.1%
Fuel Combustion	8,191.1	6.1%	73.2%
Petroleum Industry	7,748.4	5.7%	79.0%
Rubber and Plastic Products	5,562.8	4.1%	83.1%
Organic Solvent Evaporation	4,387.5	3.3%	86.3%
Fabricated Metal Products	3,821.9	2.8%	89.2%
Organic Solvent Use	3,276.0	2.4%	91.6%
Bulk Terminals/Plants	3,221.6	2.4%	94.0%
Mineral Products	1,573.0	1.2%	95.1%
Petroleum Marketing/Transport	1,300.0	1.0%	96.1%
Organic Chemical Storage	940.3	0.7%	96.8%
Secondary Metal Production	863.1	0.6%	97.4%
All Other Categories	3,446.0	2.6%	100.0%

almost exclusive to the Chicago area.

Petroleum product storage emissions are from primarily large crude oil and gasoline storage tanks. Displacement of vapors when filling the tank and daily temperature changes are what cause emissions to occur.

Particulate Matter

From **Figure 11**, particulate matter emissions for the years 1982 through 1988 remained fairly constant with a slight decrease.

The large increase in particulate emissions in the years 1989 and 1990 can be attributed to the process of developing rules to regulate PM_{10} emissions. PM_{10} is a subset of particulate matter where the particle diameter is less than or equal to 10 micrometers.

Prior to the development of these new regulations, no data existed in the EIS on PM_{10} emissions. Therefore, a database of PM_{10} emissions was developed. As the PM_{10} inventory was being developed, particulate matter data was also updated in the EIS. To establish a trend, prior year emission rates would need to be increased approximately 60 percent.

PM_{10} emissions were first included in the stationary point source inventory when the EIS began in June 1989. Therefore, no PM_{10} emission data exists prior to 1989. While PM_{10} data exists for the years 1989 to present, limits of the EIS prevent the extraction of the data to obtain prior year's totals. Even if those totals existed, the inventory is by no means complete.

PM_{10} emissions were compiled for the purpose of developing regulations. These regulations were developed for specific areas of the state where the possibility to exceed the standard existed. The areas with the greatest possibly of exceeding the standard included the Granite City area in Madison County, LaSalle in LaSalle County and the McCook and Lake Calumet areas in Cook County.

Other areas of the state did not receive the

Figure 11: Particulate Emission Trend in thousands of tons/year

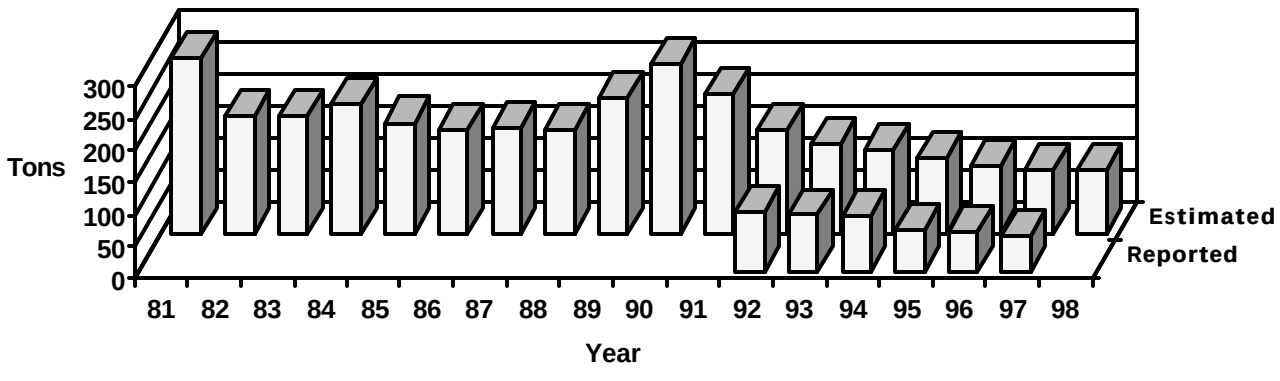


Table 6: Distribution of Particulate Matter Emissions for 1998

Category	Estimated Emissions in tons	Category Contribution	Cumulative Percent
Fuel Combustion	29,267.6	29.4%	29.4%
Food/Agriculture	23,875.8	24.0%	53.3%
Mineral Products	20,622.1	20.7%	74.0%
Primary Metal Production	6,866.9	6.9%	80.9%
Secondary Metal Production	5,569.4	5.6%	86.5%
Chemical Manufacturing	3,858.8	3.9%	90.4%
Petroleum Industry	3,578.0	3.6%	94.0%
All Other Categories	5,980.4	6.0%	100.0%

same level of review as the areas mentioned above. For this reason, PM_{10} emissions as they exist in the EIS do not represent a complete inventory. The new regulations were effective in May 1992 and only dealt with the areas mentioned above. As better estimates of PM_{10} emissions are developed, they will be included in this report.

Table 6 shows the distribution of particulate matter emissions for 1998. The mineral products industry includes sources such as quarries, asphalt plants and concrete batch plants. Emissions are due to handling and/or crushing of minerals such as limestone. The use of control devices such as baghouses (filters) and spray bars greatly reduce the amount of emissions that would reach the atmosphere.

The significant emissions of particulate matter in the food and agriculture industries is due to the large number of grain elevators and terminals in the state (approximately 950). Emissions of particulate matter from these sources are due to the loading, unloading and drying of grain.

Fuel-combustion particulate emissions come primarily from the combustion of coal in power plants. Another contributor to particulate emissions in fuel combustion is the combustion of fuel oil. Compared to power plant particulate emissions, this value is small.

Carbon Monoxide

As can be seen from **Figure 12**, carbon monoxide emissions have not varied much in the past. The trend in emissions shown is misleading because of the discontinuation of the TAS for the EIS. The TAS could only accommodate emission rates as low as 0.1 lb/hr. Many of the carbon monoxide emissions calculated were less than this amount and therefore not entered.

When the EIS was developed, the minimum emission rate it could store was 0.0001 lb/hr. Emission rates this low are typically not entered, but emissions slightly less than 0.1 lb/hr could now be entered. Therefore, it would be logical to assume that the emissions prior to 1989 should be raised slightly to account for the fact the data could not be entered.

The distribution of carbon monoxide emissions shown in **Table 7** is not what one may expect

to see, but this can be explained. Carbon monoxide is primarily generated by combustion of some material, be it coal, natural gas or waste in an incinerator. Illinois has several large electric utilities, so fuel-combustion carbon monoxide emissions should possibly be the largest contributor.

Why fuel-combustion carbon monoxide emissions only account for one-fifth of the total emissions can be explained using the same logic described above. There are literally thou-

Figure 12: Carbon Monoxide Emission Trend in thousands of tons/year

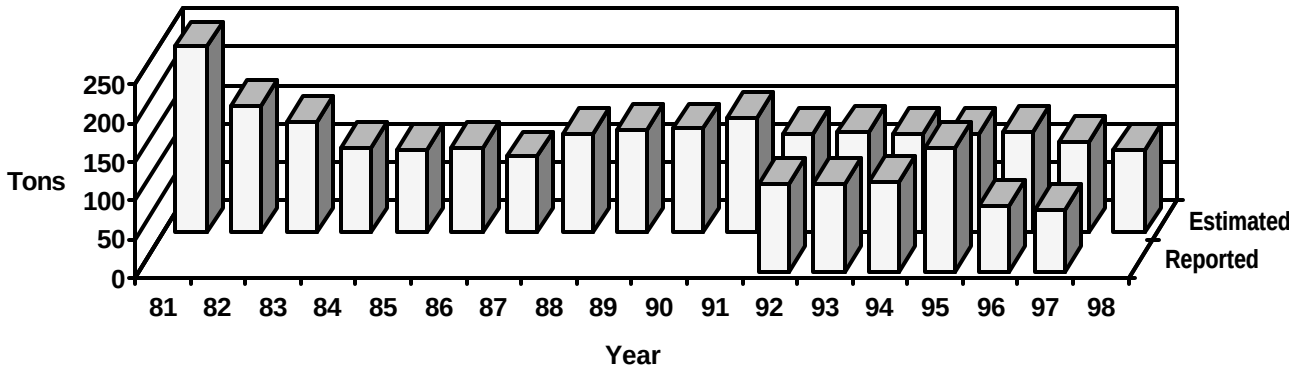


Table 7: Distribution of Carbon Monoxide Emissions for 1998

Category	Estimated Emissions in tons	Category Contribution	Cumulative Percent
Primary Metal Production	44,610.6	41.3%	41.3%
Fuel Combustion	27,935.1	25.8%	67.1%
Chemical Manufacturing	21,891.5	20.2%	87.3%
Solid Waste Disposal	4,253.3	3.9%	91.3%
Mineral Products	2,621.9	2.4%	93.7%
Secondary Metal Production	2,620.6	2.4%	96.1%
Petroleum Industry	1,351.7	1.3%	97.4%
Fabricated Metal Products	1,121.9	1.0%	98.4%
All Other Categories	1,710.7	1.6%	100.0%

sands of boilers (large and small) in Illinois. When the emission rates for these boilers were entered into the TAS, many emission rates were too low to enter.

When the TAS data was loaded into the EIS, many emission rates were still missing. To enter the missing carbon monoxide emission rates for boilers would be a tremendous burden due to the limitations of the EIS. Fuel combustion carbon monoxide emissions definitely account for more than 24 percent of the total.

Carbon monoxide emissions from primary metal production processes are from fuel combustion necessary to heat the ore to recover the metal. Chemical manufacturing carbon monoxide emissions are also due to fuel combustion emissions used to heat chemical manufacturing equipment such as reactors and other process equipment.

Sulfur Dioxide

Figure 13 shows that sulfur dioxide emissions have remained very constant over the past years and have consistently decreased. Sulfur dioxide emissions are due to sulfur present in the fuel (mainly coal and oil). When the fuel is combusted, the sulfur in the fuel combines with oxygen to form sulfur dioxide (SO_2).

The increase in sulfur dioxide emissions seen in 1995 can be primarily attributed to an increase in hours of operation for some sources. Significant increases in emissions (via increases in hours of operation) occurred at Commonwealth Edison's Kincaid Power Plant and Central Illinois Public Service's Coffeen Power Plant. Additionally, Quantum USI switched to burning coal. These changes account for about 49,000 tons of emissions.

In future years, these emissions should decrease more rapidly than in previous years.

Figure 13: Sulfur Dioxide Trend in thousands of tons/year

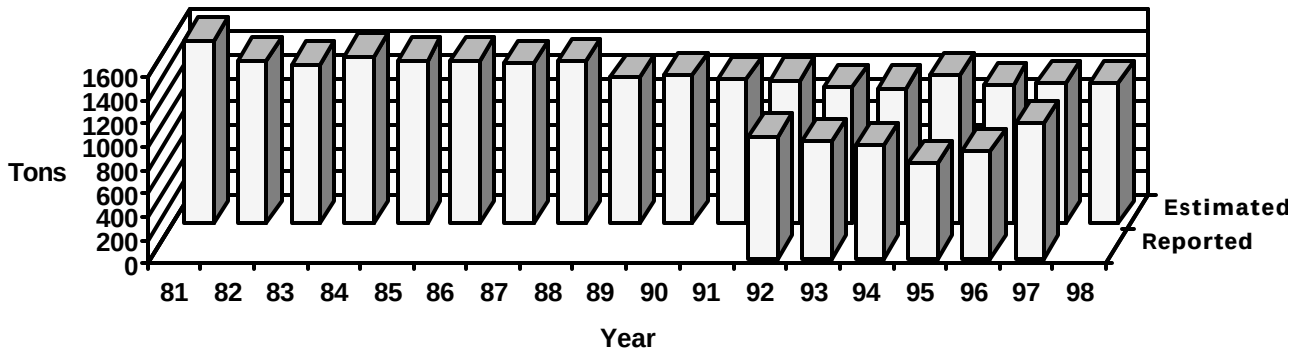


Table 8: Distribution of Sulfur Dioxide Emissions for 1998

Category	Estimated Emissions in tons	Category Contribution	Cumulative Percent
Fuel Combustion	1048359.4	87.6%	87.6%
Petroleum Industry	98148.5	8.2%	95.8%
Mineral Products	22259.2	1.9%	97.7%
Chemical Manufacturing	15138.5	1.3%	99.0%
Primary Metal Production	7786.0	0.6%	99.6%
All Other Categories	4769.4	0.4%	100.0%

Table 9: Distribution of Fuel Combustion Sulfur Dioxide Emissions for 1998

Category	Estimated Emissions in tons	Category Contribution	Cumulative Percent
Electric Generation	958,961.9	91.5%	91.5%
Industrial	71,663.1	6.8%	98.3%
Commercial/Institutional	17,502.3	1.7%	100.0%
All Other Categories	232.1	negligible	100.0%

The Clean Air Act Amendments of 1990 have included new emission limits for SO_2 that would decrease the amount of acid rain.

Table 8 provides the distribution of SO_2 emissions. Since fuel combustion contributes significantly to sulfur dioxide emissions, that category has been broken further in **Table 9**.

The SO_2 emissions in fuel combustion are related to the sulfur content of the coal being burned. The number of power plants in Illinois makes this category a significant contributor.

The SO_2 emissions in the petroleum industry are due to the processing and combustion of gaseous and liquid materials that contain sulfur. Crude oil, by nature, has some impurities or contaminants included in it. One of these impurities is sulfur. When refined, this sulfur is removed and is emitted to the atmosphere.

The SO_2 emissions from the remaining categories are due to combustion of fuel oil, which also contains sulfur.

Nitrogen Oxides

Figure 14 shows that the trend of nitrogen oxide emissions mirrors sulfur dioxide emissions very closely. This is to be expected since both sulfur dioxide and nitrogen oxide emissions come from primarily the same source, combustion of coal, oil and natural gas. When the fuel is combusted, the nitrogen in the air, and also the fuel, can combine with oxygen to form nitrogen oxides (NO_x).

Figure 14: Nitrogen Oxide Emission Trend in thousands of tons/year

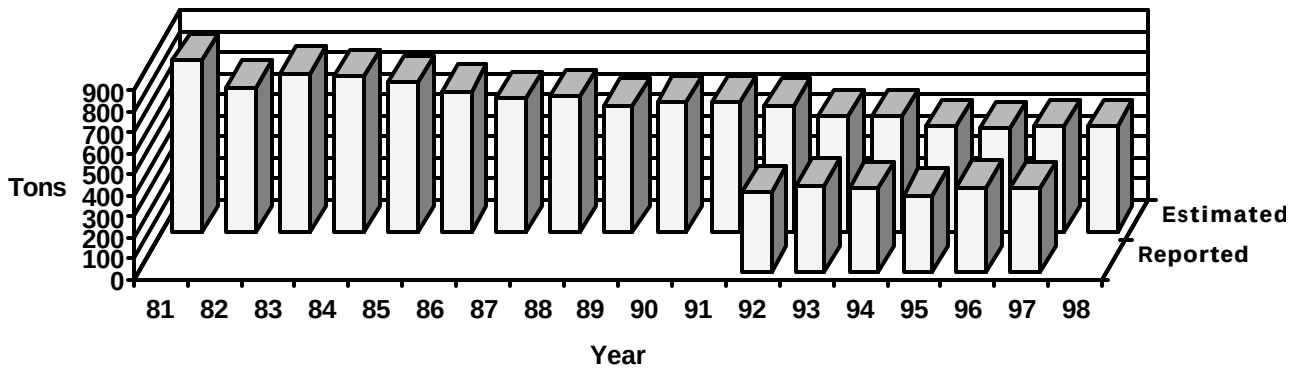


Table 10 provides the distribution of nitrogen oxide emissions. Since fuel combustion contributes significantly to nitrogen oxide emissions, that category has been broken further into subcategories in **Table 11**.

The large percentage of nitrogen oxide emissions from fuel combustion sources is due to the high temperatures that occur when the fuel is combusted. At these high temperatures, the nitrogen in the atmosphere and fuel combines with oxygen to form nitrogen oxides (NO_x).

As in the case of sulfur dioxide, the emissions of nitrogen oxides from the remaining categories is due to fuel combustion. But here, generation of nitrogen oxides is not exclusively limited to oil. Combustion of natural gas also generates nitrogen oxides.

Table 11 distinguishes between external and internal fuel combustion. External combustion sources are typically boilers and heaters while internal combustion sources are typically engines and turbines.

Table 10: Distribution of Nitrogen Oxide Emissions for 1998

Category	Estimated Emissions in tons	Category Contribution	Cumulative Percent
Fuel Combustion	458,502.5	90.0%	90.0%
Petroleum Industry	20,558.3	4.0%	94.0%
Mineral Products	11,426.6	2.2%	96.2%
Primary Metal Production	7,694.7	1.5%	97.7%
Secondary Metal Production	3,521.2	0.7%	98.4%
In-process Fuel Use	1,959.2	0.4%	98.8%
Chemical Manufacturing	1,746.2	0.3%	99.2%
Solid Waste Disposal	1,475.5	0.3%	99.5%
All Other Categories	2,792.0	0.5%	100.0%

Table 11: Distribution of Fuel Combustion Nitrogen Oxide Emissions for 1998

Category	Estimated Emissions in tons	Category Contribution	Cumulative Percent
*Electric Generation	379,438.9	82.8%	82.8%
*Industrial	51,547.4	11.2%	94.0%
**Industrial	14,775.3	3.2%	97.2%
*Commercial/Institutional	6,680.3	1.5%	98.7%
**Electric Generation	3,470.0	0.8%	99.4%
All Other Categories	2,590.6	0.6%	100.0%

* = External Fuel Combustion
** = Internal Fuel Combustion

APPENDIX A
AIR SAMPLING NETWORK

DESCRIPTION OF THE AIR SAMPLING NETWORK

The Illinois air monitoring network is composed of instrumentation owned and operated by both the Illinois Environmental Protection Agency and by cooperating local agencies. A directory of cooperating local agencies within Illinois and the environmental agencies of adjacent states can be found in Table 13. This network has been designed to measure ambient air quality levels in the various Illinois Air Quality Control Regions (AQCR). Historically, each AQCR was classified on the basis of known air pollutant concentrations or, where these were not known, estimated air quality. A map of the AQCR's in Illinois and overlapping into surrounding states can be found at the end of this section.

Many local agencies and volunteers cooperate and support the operation of the Illinois air monitoring network (see Directory of Cooperating Agencies). The network contains both continuous and intermittent instruments. The continuous instruments operate throughout the year, while noncontinuous instruments operate intermittently based on the schedule shown in Table 14. This is the official noncontinuous sampling schedule used by the Illinois EPA during 1997.

The Illinois network is deployed along the lines described in the Illinois State Implementation Plan. An updated air monitoring plan is submitted to USEPA each year for review. In accordance with USEPA air quality monitoring requirements as set forth in Title 40 of the Code of Federal Regulations, Part 58 (40 CFR 58), four types of monitoring stations are used to collect ambient air data. The types of stations are distinguished from one another on the basis of the general monitoring objectives they are designed to meet

The SLAMS /NAMS /PAMS/ SPMS designations for the sites operated within the State of Illinois are provided by site in the Site Directory (Appendix A.2). All of the industrial sites are considered to be SPMS. Table 15 is a summary of the distribution of SLAMS/NAMS/PAMS/SPMS by pollutant.

1. **State/Local Air Monitoring Station (SLAMS) Network -** The SLAMS network is designed to meet a minimum of four basis monitoring objectives:

   a. To determine the highest concentrations expected to occur in the area covered by the network.

   b. To determine representative concentrations in areas of high population density.

   c. To determine the air quality impact of significant sources or source categories.

   d. To determine general background concentration levels.

2. **National Air Monitoring Station (NAMS) Network -** The NAMS network is a subset of stations selected from the SLAMS network with emphasis given to urban and multisource areas. The primary objectives of the NAMS network are:

   a. To measure expected maximum concentrations.

TABLE A1

ILLINOIS AMBIENT AIR MONITORING NETWORK
DIRECTORY OF COOPERATING AGENCIES IN ILLINOIS

Village of Bedford Park
P.O. Box 128
Argo, Illinois 60501
708/458-2067
Fax 708/458-2079

Bensenville Public Works Department
700 W. Irving Park Road
Bensenville, Illinois 60106
708/766-8200
Fax 708/350-0260

Chicago Department of the Environment
30 N. LaSalle Street, 25th Floor
Chicago, Illinois 60602
312/744-7606
Fax 312/744-6451

Cook County Department of Environmental Control
1500 Maybrook Drive, Room 202
Maywood, Illinois 60153
708/865-6165
Fax 708/865-6361

DuPage County Health Department
111 N. County Farm Road
Wheaton, Illinois 60187
708/682-7400
Fax 708/462-9249

Kane County Health Department
600 Lincoln Avenue
Elgin, Illinois
630/208-3801
Fax 630/208-5147

Lake County Health Department
Environmental Health Division
3010 Grand Avenue
Waukegan, Illinois 60085
847/360-6700
Fax 847/249-4972

Quincy Department of Public Works
730 Main Street
Quincy, Illinois 62301
217/228-4527
Fax 217/228-4585

Southern Illinois University
Center for Environmental Health & Safety
1400 Poultry Center Drive
Carbondale, Illinois 62901-6898
618/453-7180
Fax 618/453-7192

Will County Environmental Health Department
501 Ella Avenue
Joliet, Illinois 60433
815/727-8490
Fax 815/727-8484

Winnebago County Department of Public Health
401 Division
Rockford, Illinois 61104
815/962-5092
Fax 815/962-4203

TABLE A1

DIRECTORY OF AIR POLLUTION AGENCIES IN ADJACENT STATES

Indiana Dept. of Environmental Management
100 N. Senate
Indianapolis, Indiana 46204
317/232-8611
Fax 317/233-6647

Iowa Dept. of Natural Resources
Wallace State Office Building
900 E. Grand Ave.
Des Moines, Iowa 50319-0034
515/281-5145
Fax 515/281-8895

Kentucky Dept. for Environmental Protection
Air Quality Division
803 Schenkel Lane
Frankfort, Kentucky 40601
502/573-3382
Fax 502/573-3787

Michigan Dept. of Natural Resources
Air Quality Division
P.O. Box 30260
Lansing, Michigan 48909
517/373-7023
Fax 517/373-1265

Missouri Dept. of Natural Resources
Division of Environmental Quality
P.O. Box 176
205 Jefferson Street
Jefferson City, Missouri 65102
573/751-4817
Fax 573/751-2706

Wisconsin Dept. of Natural Resources
Bureau of Air Management
P.O. Box 7921
101 S. Webster
Madison, Wisconsin 53707
608/266-7718
Fax 608/267-0560

Table A2
1998 - Noncontinous Sampling Schedule

January

S	M	T	W	T	F	S
				1	2	3
4	**5**	6	7	8	9	10
11	12	13	14	15	16	**17**
18	19	20	21	22	**23**	24
25	26	27	28	**29**	30	31

February

S	M	T	W	T	F	S
1	2	3	**4**	5	6	7
8	9	**10**	11	12	13	14
15	**16**	17	18	19	20	21
22	23	24	25	26	27	**28**

March

S	M	T	W	T	F	S
1	2	3	4	5	**6**	7
8	9	10	11	**12**	13	14
15	16	17	**18**	19	20	21
22	23	**24**	25	26	27	28
29	**30**	31				

April

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	**11**
12	13	14	15	16	**17**	18
19	20	21	22	**23**	24	25
26	27	28	**29**	30		

May

S	M	T	W	T	F	S
					1	2
3	4	**5**	6	7	8	9
10	**11**	12	13	14	15	16
17	18	19	20	21	22	**23**
24	25	26	27	28	**29**	30
31						

June

S	M	T	W	T	F	S
	1	2	3	**4**	5	6
7	8	9	**10**	11	12	13
14	15	**16**	17	18	19	20
21	**22**	23	24	25	26	27
28	29	30				

July

S	M	T	W	T	F	S
			1	2	3	**4**
5	6	7	8	9	**10**	11
12	13	14	15	**16**	17	18
19	20	21	**22**	23	24	25
26	27	**28**	29	30	31	

August

S	M	T	W	T	F	S
						1
2	**3**	4	5	6	7	8
9	10	11	12	13	14	**15**
16	17	18	19	20	**21**	22
23	24	25	26	**27**	28	29
30	31					

September

S	M	T	W	T	F	S
		1	**2**	3	4	5
6	7	**8**	9	10	11	12
13	**14**	15	16	17	18	19
20	21	22	23	24	25	**26**
27	28	29	30			

October

S	M	T	W	T	F	S
				1	**2**	3
4	5	6	7	**8**	9	10
11	12	13	**14**	15	16	17
18	19	**20**	21	22	23	24
25	**26**	27	28	29	30	31

November

S	M	T	W	T	F	S
1	2	3	4	5	6	**7**
8	9	10	11	12	**13**	14
15	16	17	18	**19**	20	21
22	23	24	**25**	26	27	28
29	30					

December

S	M	T	W	T	F	S
		1	2	3	4	5
6	**7**	8	9	10	11	12
13	14	15	16	17	18	**19**
20	21	22	23	24	**25**	26
27	28	29	30	**31**		

15 Every 6 Day Sampling Schedule

b. To measure concentrations in areas where poor air quality is combined with high population exposure.

c. To provide data useable for the determination of national trends.

d. To provide data necessary to allow the development of nationwide control strategies.

3. Photochemical Assessment Monitoring Station (PAMS) Network - The PAMS network is required in serious, severe, and extreme ozone non-attainment areas to obtain detailed data for ozone, precursors (NOx and VOC), and meteorology. VOC and NOx sampling is required for the period June - August each year. Ozone sampling occurs during the ozone season, April - October. Network design is based on four monitoring types. In Illinois PAMS are required in the Chicago metropolitan area only.

a. Type 1 sites are located upwind of the non-attainment area and are located to measure background levels of ozone and precursors coming into the area

b. Type 2 sites are located slightly downwind of the major source areas of ozone precursors.

c. Type 3 sites are located at the area of maximum ozone concentrations.

d. Type 4 sites are located at the domain edge of the non-attainment area and measure ozone and precursors leaving the area.

4. Special Purpose Monitoring Station (SPMS) Network - Any monitoring site that is not a designated SLAMS or NAMS is considered a special purpose monitoring station. Some of the SPMS network objectives are as follows:

a. To provide data as a supplement to stations used in developing local control strategies, including enforcement actions.

b. To verify the maintenance of ambient standards in areas not covered by the SLAMS/NAMS network.

c. To provide data on noncriteria pollutants.

Table A3

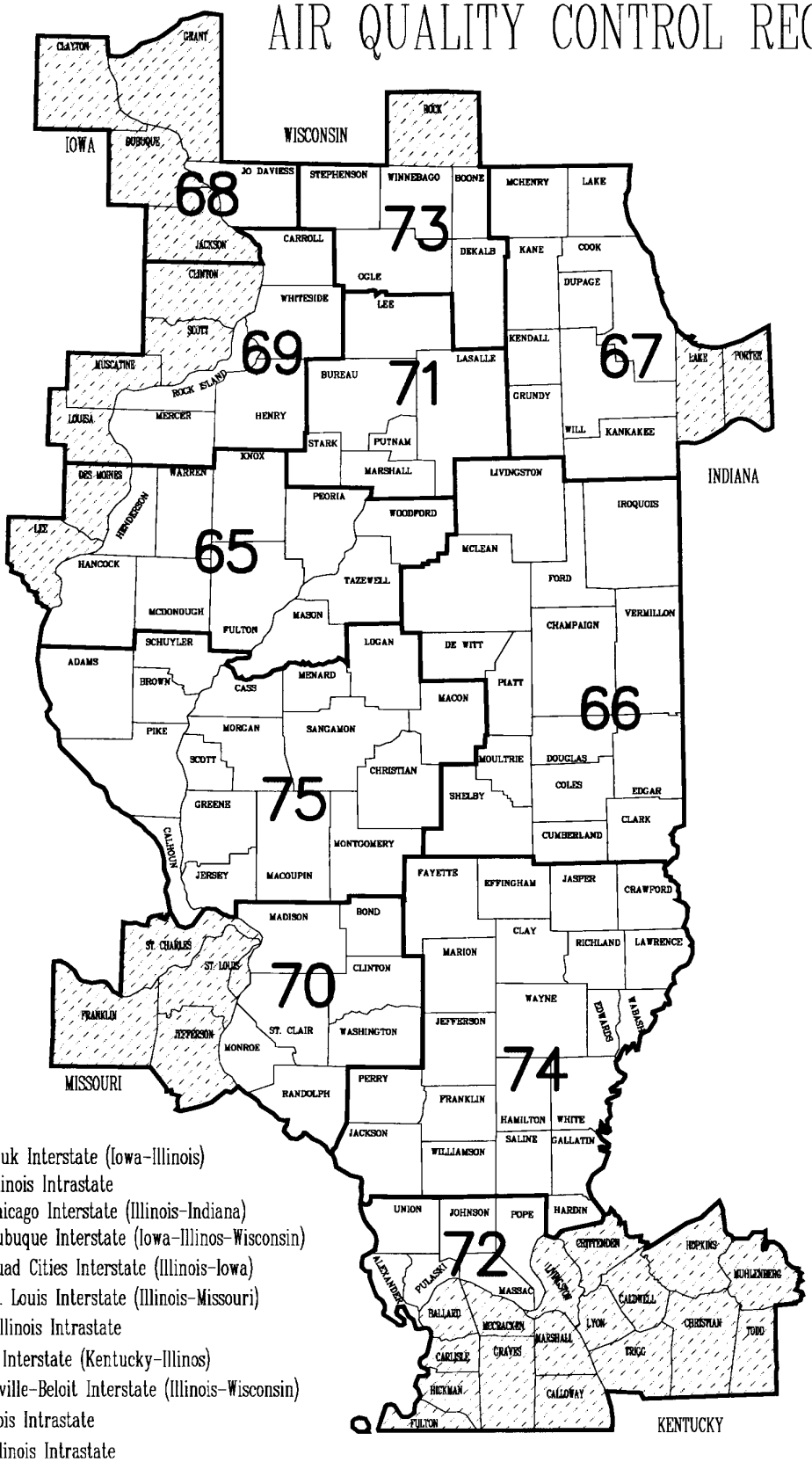
DISTRIBUTION OF AIR MONITORING INSTRUMENTS

	PAMS	NAMS	SLAMS	SPMS	TOTAL
Particulate Matter (PM_{10})	0	15	28	0	43
Total Suspended Particulates (TSP)	0	0	0	19	19
Particulate Matter ($PM_{2.5}$)	0	0	0	10	10
Lead	0	2	17	3	22
Sulfur Dioxide	0	12	15	2	29
Nitrogen Dioxide	4	2	5	0	11
Ozone	4	11	26	2	43
Carbon Monoxide	0	2	8	0	10
Volatile Organic Compounds	4	0	0	0	4
Wind Systems	4	0	0	22	26
Solar Radiation	4	0	0	6	10
Meteorological	4	0	0	0	4
Total	24	44	99	64	231

There were several changes to the monitoring network from 1997 to 1998. A new ozone and nitrogen dioxide site was installed at Chicago - Truman. A new PM2.5 site was installed in Northbrook. The Schiller Park carbon monoxide, nitrogen dioxide, and lead site was moved a few blocks north in the same general area. One of the Chemetco lead sites was moved to a more appropriate location.

Major change in the particulate network occurred at the end of 1998. Numerous PM10 sites were discontinued as part of the development of the PM2.5 network. Additionally seven lead sites were discontinued because of the success of lead reduction efforts less emphasis on traffic-oriented lead.

AIR QUALITY CONTROL REGIONS



65 - Bulington-Keokuk Interstate (Iowa-Illinois)
66 - East Central Illinois Intrastate
67 - Metropolitan Chicago Interstate (Illinois-Indiana)
68 - Metropolitan Dubuque Interstate (Iowa-Illinos-Wisconsin)
69 - Metropolitan Quad Cities Interstate (Illinois-Iowa)
70 - Metropolitan St. Louis Interstate (Illinois-Missouri)
71 - North Central Illinois Intrastate
72 - Paducah-Cairo Interstate (Kentucky-Illinos)
73 - Rockford-Janesville-Beloit Interstate (Illinois-Wisconsin)
74 - Southeast Illinois Intrastate
75 - West Central Illinois Intrastate

Table A4

1998
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)				
PEORIA COUNTY				
Peoria	Fire Station #8	Ill. EPA	N. 4507.050	NAMS - SO_2, O_3
(1430024)	MacArthur & Hurlburt		E. 279.679	SPMS - WS/WD
Peoria	Commercial Building	Ill. EPA	N. 4508.585	SLAMS - CO
(1430036)	1005 N. University		E. 279.196	
Peoria	City Office Building	Ill. EPA	N. 4508.197	NAMS - PM_{10}
(1430037)	613 N.E. Jefferson		E. 281.675	SLAMS - Pb
				SPMS - TSP
Peoria Heights	Peoria Heights H.S.	Ill. EPA	N. 4513.476	NAMS - O_3
(1431001)	508 E. Glen Ave.		E. 281.660	
TAZEWELL COUNTY				
East Peoria (DISC)	East Peoria Medical Center	Ill. EPA	N. 4504.500	SLAMS - PM_{10}
(1790002)	235 E. Washington		E. 282.200	
Pekin	Fire Station #3	Ill. EPA	N. 4492.693	NAMS - SO_2
(1790004)	272 Derby		E. 275.291	
66 EAST CENTRAL ILLINOIS INTRASTATE				
CHAMPAIGN COUNTY				
Champaign	Booker T. Washington Elem. Sch.	Ill. EPA	N. 4442.017	SLAMS - SO_2, O_3
(0190004)	606 E. Grove		E. 395.248	
Champaign	Post Office	Ill. EPA	N. 4441.819	SLAMS - PM_{10}
(0190005)	600 N. Neil		E. 394.066	
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)				
COOK COUNTY				
Alsip	Village Garage	Cook County DEC	N. 4613.287	SLAMS - O_3, Pb, PM_{10}
(0310001)	4500 W. 123rd St.		E. 439.015	SPMS - TSP, WS/WD,
				$PM_{2.5}$
Bedford Park	APC Laboratory	Cook County DEC	N. 4624.760	SLAMS - SO_2
(0311018)	7800 W. 65th St.		E. 432.241	SPMS - WS/WD
Blue Island	Eisenhower H.S.	Cook County DEC	N. 4612.286	NAMS - PM_{10}
(0312001)	12700 Sacramento		E. 442.003	SLAMS - SO_2
				SPMS - $PM_{2.5}$

Table A4

1998
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Calumet City (0318003)	Trailer 1703 State St.	Cook County DEC	N. 4608.775 E. 452.673	SLAMS - SO_2, NO/NO_2, O_3, CO
Chicago (DISC) (0310041)	Bright Elem. Sch. 10740 S. Calhoun	Cook County DEC	N. 4616.314 E. 453.235	SLAMS - Pb SPMS - TSP
Chicago (0310060)	Carver H.S. 13100 S. Doty	Cook County DEC	N. 4611.597 E. 451.007	NAMS - PM_{10}
Chicago (0310026)	Cermak Pump Sta. 735 W. Harrison	Cook County DEC	N. 4635.707 E. 446.469	SLAMS - Pb SPMS - TSP
Chicago (0310049)	Chicago Ave. Pumping Sta. 805 N. Michigan	Cook County DEC	N. 4638.335 E. 448.269	NAMS - PM_{10}
Chicago (0310063)	CTA Building 320 S. Franklin	Ill. EPA	N. 4636.096 E. 447.365	NAMS - CO, NO/NO_2, SO2 SLAMS - O_3
Chicago (0310014)	Farr Dormitory 3300 S. Michigan Ave.	Cook County DEC	N. 4631.393 E. 448.232	NAMS - PM_{10}^d
Chicago (0310072)	Jardine Water Plant 1000 E. Ohio	Ill. EPA	N. 4638.169 E. 449.597	PAMS - NO/NO_2, O_3, VOC WS/WD, SOL, MET, UV, RAIN
Chicago (DISC) (0310070)	Marsh Elem. Sch. 9810 S. Exchange	Cook County DEC	N. 4618.276 E. 454.020	SLAMS - PM_{10}
Chicago (0310052)	Mayfair Pump Sta. 4850 Wilson Ave.	Cook County DEC	N. 4645.900 E. 437.878	NAMS - Pb SLAMS - PM_{10}^d SPMS - TSP, $PM_{2.5}$
Chicago (0310042)	Sears Tower Wacker @ Adams	Ill. EPA	N. 4636.320 E. 447.265	SPMS - O_3
Chicago (0310050)	Southeast Police Sta. 103rd & Luella	Cook County DEC	N. 4617.220 E. 452.700	NAMS - SO_2 SLAMS - O_3
Chicago (0310032)	South Water Filtration Plant 3300 E. Cheltenham Pl.	Cook County DEC	N. 4622.596 E. 454.663	SLAMS - O_3
Chicago (0311003)	Taft H.S. 6545 W. Hurlbut St.	Cook County DEC	N. 4648.125 E. 434.392	SLAMS - O_3
Chicago (NEW) (0310075)	Truman College 1145 W. Wilson	Cook County DEC	N. 4645.802 E. 445.417	SLAMS - O_3, NO/NO_2

Table A4

1998
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Chicago (0310064)	University of Chicago 5720 S. Ellis Ave.	Cook County DEC	N. 4626.508 E. 450.010	SLAMS - O_3, NO/NO_2 SPMS - SOL, UV
Chicago (0310022)	Washington H.S. 3535 E. 114th St.	Cook County DEC	N. 4615.038 E. 455.155	NAMS - PM_{10}[d] SLAMS - Pb SPMS - TSP, $PM_{2.5}$
Chicago (0310059)	Washington Elem. Sch. 3611 E. 114th St.	Ill. EPA	N. 4615.013 E. 455.389	NAMS - SO_2 SLAMS - PM_{10} SPMS - WS/WD
Cicero (0316001)	Roosevelt H.S. 15th St. & 50th Ave.	Cook County DEC	N. 4634.246 E. 437.728	NAMS - PM_{10}
Cicero (0314002)	Trailer 1820 S. 51st Ave.	Cook County DEC	N. 4633.763 E. 437.541	NAMS - SO_2, NO/NO_2 SLAMS - O_3, CO
Des Plaines (0314006)	Forest Elem. Sch. 1375 5th St.	Cook County DEC	N. 4653.049 E. 425.055	SLAMS - O_3
Evanston (0317002)	Water Pumping Sta. 531 E. Lincoln	Ill. EPA	N. 4656.695 E. 444.260	NAMS - O_3 SPMS - WS/WD
Hoffman Estates (0314101)	Hoffman Estates H.S. 1100 W. Higgins Rd.	Cook County DEC	N. 4656.069 E. 408.304	SLAMS - PM_{10}
Lemont (0311601)	Trailer 729 Houston	Cook County DEC	N. 4613.184 E. 417.532	SLAMS - SO_2, O_3
Lyons (0311701)	Fire Station #22 4043 Joliet Ave.	Cook County DEC	N. 4629.580 E. 431.913	SLAMS - PM_{10}[d]
Lyons Township (0311016)	Village Hall 50th St. & Glencoe	Ill. EPA	N. 4627.820 E. 430.886	SLAMS - PM_{10} SPMS - $PM_{2.5}$
Maywood (0316003)	Maybrook Civic Center 1500 Maybrook Dr.	Cook County DEC	N. 4635.705 E. 431.435	NAMS - Pb
Maywood (0316004)	Maybrook Civic Center 1505 S. First Ave.	Cook County DEC	N. 4635.695 E. 431.200	NAMS - CO
Merrionette Park (0311019)	Meadow Lane Sch. 1800 Meadow Lane Dr.	Cook County DEC	N. 4614.060 E. 441.949	SLAMS - PM_{10} SPMS - $PM_{2.5}$
Midlothian (0311901)	Bremen High Sch. 15205 Crawford Ave.	Cook County DEC	N. 4607.103 E. 440.416	SLAMS - PM_{10} SPMS - $PM_{2.5}$

Table A4

1998
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Northbrook	Northbrook Water Plant	Ill. EPA	N. 4665.543	PAMS - O_3, NO/NO_2, VOC
(0314201)	750 Dundee Rd.		E. 434.140	WS/WD, SOL, MET
Schiller Park (NEW)	IEPA Trailer	Ill. EPA	N. 4646.130	SLAMS - CO, NO/NO_2, Pb
(0313103)	4743 Mannheim Rd.		E. 427.377	SPMS - TSP, WS/WD
South Holland (DISC)	Thornwood H.S.	Cook County DEC	N. 4603.512	SLAMS - PM_{10}
(0313701)	170th St. & S. Park Ave.		E. 449.555	
Summit	Graves Elem. Sch.	Cook County DEC	N. 4625.756	SLAMS - PM_{10}, Pb
(0313301)	60th St. & 74th Ave.		E. 433.074	SPMS - TSP
DUPAGE COUNTY				
Bensenville (DISC)	Treatment Plant	Ill. EPA	N. 4644.118	SLAMS - PM_{10}, Pb
(0431003)	711 E. Jefferson		E. 422.938	SPMS - TSP
Lisle	Morton Arboretum	Ill. EPA	N. 4629.361	SLAMS - SO_2, O_3
(0436001)	Route 53		E. 410.891	SPMS - WS/WD
Naperville	City Hall	Ill. EPA /	N. 4624.841	SLAMS - PM_{10}[d]
(0434002)	400 S. Eagle St.	DuPage Co. Health Dept.	E. 404.230	
KANE COUNTY				
Elgin	Larsen Junior H.S.	Ill. EPA	N. 4655.844	NAMS - O_3
(0890005)	665 Dundee Rd.		E. 394.654	
Geneva	Delnor Comm. Hosp.	Ill. EPA/	N. 4636.982	SPMS - PM_{10}
(0892001)	300 Randall Rd.	Kane Co. Health Dept.	E. 388.691	
LAKE COUNTY				
Deerfield	Woodland Park Sch.	Ill. EPA	N. 4669.608	NAMS - O_3
(0970001)	1321 Wilmont Rd.		E. 428.584	
Libertyville	Butterfield Elem. Sch.	Ill. EPA	N. 4682.279	SLAMS - O_3
(0973001)	1441 Lake St.		E. 419.062	SPMS - WS/WD
Waukegan	North Fire Station	Ill. EPA	N. 4693.854	NAMS - O_3
(0971002)	Golf & Jackson Sts.		E. 430.744	SPMS - WS/WD
Zion	Camp Logan	Ill. EPA	N. 4701.735	PAMS - O_3, NO/NO_2, VOC (0971007)
	Illinois Beach State Park		E. 433.384	WS/WD, SOL, MET
Mc HENRY COUNTY				
Cary	Cary Grove H.S.	Ill. EPA	N. 4674.862	NAMS - O_3
(1110001)	1st St. & Three Oaks Rd.		E. 397.562	

Table A4

1998
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
WILL COUNTY				
Braidwood	Com Ed Training Center	Ill. EPA	N. 4563.890	PAMS - O_3, NO/NO_2, VOC
(1971011)	36400 S. Essex Road		E. 400.178	WS/WD, SOL, MET
				SLAMS - CO
Joliet	Pershing Elem. Sch.	Ill. EPA	N. 4597.636	NAMS - PM_{10}
(1971002)	Midland & Campbell Sts.		E. 406.854	SLAMS - Pb[d]
				SPMS - TSP[d]
Joliet	Water Plant West	Ill. EPA	N. 4590.279	NAMS - SO_2
(1970013)	Rte. 6 & Young Rd.		E. 401.284	SLAMS - PM_{10}[d]
				SPMS - WS/WD
Rockdale (DISC)	Volunteer Fire Dept.	Ill. EPA	N. 4595.330	SLAMS - PM_{10}
(1971009)	Midland & Otis		E. 406.953	
South Lockport	Fitness Forum	Ill. EPA	N. 4603.045	SLAMS - O_3
(1971008)	2021 Lawrence		E. 412.075	
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)				
ROCK ISLAND COUNTY				
East Moline (DISC)	City Hall	Ill. EPA	N. 4598.836	NAMS - PM_{10}
(1610001)	915 16th Ave.		E. 713.616	SLAMS - Pb
				SPMS - TSP
Moline	Water Treatment Plant	Ill. EPA	N. 4598.361	NAMS - SO_2, O_3
(1610003)	30 18th St.		E. 707.461	SPMS - WS/WD, SOL
Rock Island (DISC)	City Hall	Ill. EPA	N. 4597.904	SLAMS - PM_{10}
(1613001)	1528 3rd Ave.		E. 702.190	
MADISON COUNTY				
Alton	Clara Barton Elem. Sch.	Ill. EPA	N. 4308.245	SLAMS - SO_2, O_3, PM_{10}
(1190008)	409 Main St.		E. 747.375	SPMS - WS/WD
Edwardsville	RAPS Trailer	Ill. EPA	N. 4297.793	SLAMS - O_3
(1192007)	Poag Road		E. 757.118	SPMS - WS/WD, SOL
Granite City	Fire Station #1	Ill. EPA	N. 4287.661	NAMS - PM_{10}[d]
(1191007)	23rd & Madison		E. 748.745	
Granite City	Air Products	Ill. EPA	N. 4286.516	NAMS - PM_{10}
(1190010)	15th & Madison		E. 747.561	
Granite City	YMCA Building	Ill. EPA	N. 4287.364	SLAMS - CO, SO_2
(1190017)	2001 Edison		E. 747.923	

Table A4

1998
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)				
MADISON COUNTY				
Granite City (DISC) (1190022)	Plaza Furniture 2420 Nameoki Road	Ill. EPA	N. 4287.673 E. 750.333	SLAMS - PM_{10}
Granite City (1190023)	VFW Building 2040 Washington	Ill.EPA	N. 4287.099 E. 748.427	NAMS - PM_{10} SLAMS - Pb^d SPMS - TSP^d, $PM_{2.5}$
Maryville (1191009)	Southwest Cable TV 200 W. Division	Ill. EPA	N. 4290.389 E. 242.739	SLAMS - O_3 SPMS - WS/WD
South Roxana (1191010)	S. Roxana Grade Sch. Michigan St.	Ill. EPA	N. 4301.635 E. 755.442	SLAMS - SO_2
South Roxana (DISC) (1191011)	Village Hall 211 Sinclair Ave.	Ill. EPA	N. 4301.923 E. 754.922	SLAMS - PM_{10}
Wood River (1193007)	Water Treatment Plant 54 N. Walcott	Ill. EPA	N. 4305.084 E. 751.138	NAMS - SO_2, O_3, PM_{10} SLAMS - Pb SPMS - TSP, $PM_{2.5}$
Wood River (1193009)	VIM Test Station 1710 Vaughn Road	Ill. EPA	N. 4305.709 E. 754.190	SLAMS - SO_2
Rural Madison County (DISC) (1191012)	Chemetco Site 1-N	Chemetco	N. 4298.318 E. 751.915	SPMS - Pb
Rural Madison County (1191013)	Chemetco Site 2-E	Chemetco	N. 4297.892 E. 752.506	SPMS - Pb
Rural Madison County (1191015)	Chemetco Site 4-SE	Chemetco	N. 4297.470 E. 752.268	SPMS - Pb
Rural Madison County (NEW) (1191016)	Chemetco Site 5-N	Chemetco	N. 4298.370 E. 751.935	SPMS - Pb
RANDOLPH COUNTY				
Houston (1570001)	Baldwin Site #2 County Rds. 25.0 N. & 23.5 E.	Ill. EPA	N. 4228.843 E. 255.741	SLAMS - SO_2, O_3
ST. CLAIR COUNTY				
East St. Louis (1630010)	RAPS Trailer 13th & Tudor	Ill. EPA	N. 4277.363 E. 747.251	NAMS - SO_2, PM_{10} SLAMS - NO/NO_2, Pb, O_3 SPMS - TSP, WS/WD

Table A4

1998
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)		EQUIPMENT
ST. CLAIR COUNTY					
Marissa	Baldwin Site #1	Ill. EPA	N.	4235.505	SLAMS - SO_2
(1631011)	Risdon School Rd.		E.	251.259	SPMS - WS/WD
Sauget	IEPA Trailer	Ill. EPA	N.	4275.123	SLAMS - SO_2
(1631010)	Little Ave.		E.	746.921	
71 NORTH CENTRAL ILLINOIS INTRASTATE					
LA SALLE COUNTY					
Oglesby	308 Portland Ave.	Ill. EPA	N.	4573.105	SLAMS - PM_{10}
(0990007)			E.	328.412	SPMS - WS/WD
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)					
WINNEBAGO COUNTY					
Loves Park	Maple Elem. Sch.	Ill. EPA	N.	4688.756	NAMS - O_3
(2012001)	1405 Maple Ave.		E.	332.098	SPMS - WS/WD, SOL
Rockford	Walker Elem. Sch.	Ill. EPA	N.	4683.537	NAMS - O_3
(2010009)	1500 Post St.		E.	328.760	
Rockford	Fire Dept. Administration Bldg.	Ill. EPA /	N.	4681.324	SLAMS - Pb^d
(2010010)	204 S. 1st St.	Winn. Co. Hlth. Dept.	E.	327.670	SPMS - TSP^d
Rockford	City Hall	Ill. EPA	N.	4681.390	SLAMS - CO
(2010011)	425 E. State		E.	327.817	
Rockford (DISC)	Beyer Elem. Sch.	Ill. EPA /	N.	4679.472	SLAMS - PM_{10}
(2010012)	333 15th St.	Winn. Co. Hlth. Dept.	E.	327.299	
74 SOUTHEAST ILLINOIS INTRASTATE					
EFFINGHAM COUNTY					
Effingham	Central Junior H.S.	Ill. EPA	N.	4325.131	SLAMS - O_3
(0491001)	Route 45 South		E.	366.053	SPMS - WS/WD, SOL
HAMILTON COUNTY					
Dale	Dale Elem. School	Ill. EPA	N.	4206.378	SPMS - O_3
(0650001)	SR 142		E.	368.939	
JACKSON COUNTY					
Carbondale	Maintenance Bldg.	Ill. EPA	N.	4177.177	SLAMS - PM_{10}
(0770004)	607 E. College	SIU	E.	305.348	

Table A4

1998
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
74 SOUTHEAST ILLINOIS INTRASTATE				
WABASH COUNTY				
Mount Carmel	Division St.	Public Service	N. 4249.965	SPMS - SO_2
(1850001)		of Indiana	E. 432.444	
Rural Wabash County	South of SR-1	Public Service	N. 4246.929	SPMS - SO_2
(1851001)		of Indiana	E. 427.104	
75 WEST CENTRAL ILLINOIS INTRASTATE				
ADAMS COUNTY				
Quincy	St. Boniface Elem. Sch.	Ill. EPA /	N. 4421.358	SLAMS - PM_{10}, SO_2, O_3
(0010006)	732 Hampshire	City (PM_{10})	E. 636.388	SPMS - WS/WD
JERSEY COUNTY				
Jerseyville	Illini Jr. H.S.	Ill. EPA	N. 4332.169	SLAMS - O_3
(0831001)	Liberty St. & County Rd.		E. 730.997	
MACON COUNTY				
Decatur (DISC)	Grant Elem. Sch.	Ill. EPA	N. 4413.735	NAMS - PM_{10}
(1150002)	2300 Geddes		E. 335.358	SLAMS - Pb
				SPMS - TSP
Decatur	IEPA Trailer	Ill. EPA	N. 4414.538	NAMS - SO_2
(1150013)	2200 N. 22nd		E. 335.308	SLAMS - O_3
				SPMS - WS/WD
MACOUPIN COUNTY				
Nilwood	IEPA Trailer	Ill. EPA	N. 4364.287	SLAMS - O_3, SO_2, Pb
(1170002)	Heaton & Dubois		E. 258.053	PM_{10}[d]
				SPMS - TSP, WS/WD, SOL CO_2, UV
SANGAMON COUNTY				
Springfield	Sewage Treatment Plant	Ill. EPA	N. 4408.650	NAMS - SO_2
(1670006)	I55 & I72 at Old 36		E. 278.194	SPMS - WS/WD
Springfield	Federal Building	Ill. EPA	N. 4408.623	SLAMS - CO
(1670008)	6th St. & Monroe		E. 273.327	
Springfield	Public Health Warehouse	Ill. EPA	N. 4413.490	SLAMS - O_3
(1670010)	2875 N. Dirksen Pkwy.		E. 277.134	
Springfield	Agriculture Building	Ill. EPA	N. 4412.240	SLAMS - PM_{10}
(1670012)	State Fair Grounds		E. 273.720	

Summary of Equipment Codes for the Site Directory

TSP	- Total Suspended Particulates
PM_{10}	- Particulate Matter (10 microns or smaller)
$PM_{2.5}$	Particulate Matter (2.5 microns or smaller)
SO_2	- Sulfur Dioxide
NO	- Nitric Oxide
NO_2	- Nitrogen Dioxide
CO	- Carbon Monoxide
CO_2	- Carbon Dioxide
O_3	- Ozone
Pb	- Lead
WS/WD	- Wind Speed and Wind Direction
SOL	- Total Solar Radiation
MET	- Temperature, Relative Humidity, Barometric Pressure
UV	- Ultra-violet Radiation
RAIN	- Rainfall
VOC	- Volatile Organic Compounds
(n)	- Instrument installed during 1998
(d)	- Instrument removed during 1998
NEW	- Site started during 1998
DISC	- Site discontinued during or at the end of 1998

SLAMS Designations

NAMS	- National Air Monitoring Site
PAMS	- Photochemical Assessment Monitoring Site
SLAMS	- State and Local Air Monitoring Site
SPMS	- Special Purpose Air Monitoring Site

UTM Coordinates

N.	- Northing Coordinate (in kilometers)
E.	- Easting Coordinate (in kilometers)

APPENDIX B
AIR QUALITY DATA SUMMARY TABLES

AIR QUALITY DATA INTERPRETATION

In order to provide a uniform procedure for determining whether a sufficient amount of air quality data has been collected by a sensor in a given time period (year, quarter, month, day, etc.) to accurately represent air quality during that time period, a minimum statistical selection criteria was developed.

In order to calculate an annual average for noncontinuous parameters, a minimum of 75% of the data that was scheduled to be collected must be available, i.e., 45 samples per year for an every-six-day schedule (total possible of 60 samples). Additionally, in order to have proper quarterly balance, each site on an every sixth day schedule should have at least 10 samples per calendar quarter. This provides for a 20% balance in each quarter if the minimum required annual sampling is achieved.

For lead results which must be compared to a quarterly standard, 75% of the possible samples in each quarter must be obtained. Thus for a valid lead quarterly average, a total of 12 values must be available.

PM_{10} and $PM_{2.5}$ samplers operate on one of three sampling frequencies:

- Every-day sampling (68 samples required each quarter for 75% data capture)
- Every-third-day sampling (23 samples required each quarter for 75% data capture)
- Every-six-day sampling (12 samples required each quarter for 75% data capture).

To calculate an annual PM_{10} or $PM_{2.5}$ mean, arithmetic means are calculated for each quarter in which valid data is recorded in at least 75% of the possible sampling periods. The annual mean is then the arithmetic average of the four quarterly means.

To determine an annual average for continuous data 75% of the total possible yearly observations are necessary, i.e., a minimum of 6570 hours (75% of the hours available) were needed in 1998. In order to provide a balance between the respective quarters, each quarter should have at least 1300 hours which is 20% of the 75% minimum annual requirement. To calculate quarterly averages at sites which do not meet the annual criteria, 75% of the total possible observations in a quarter are needed, i.e., a minimum of 1647 hours of 2200 hours available. Monthly averages also require 75% of the total possible observations in a month, i.e., 540 hours as a minimum. Additionally, for short-term running averages (24 hour, 8 hour, 3 hour) 75% of the data during the particular time period is needed, i.e, 18 hours for a 24-hour average, 6 hours for an 8-hour average and 3 hours for a 3-hour average.

For ozone, a valid day for 1-hour samples must have 75% of the hours between 9 a.m. and 9 p.m. otherwise it is considered missing. A missing day can be considered valid if the peak ozone concentration on the preceding and succeeding days is less than 0.090 ppm. The expected exceedences are actual exceedences adjusted for the percent of missing days. For 8-hour samples, running averages are computed for each hour which includes the next seven hours as well. A valid 8-hour averages has at least 6 valid 1-hour averages. A valid 8-hour day contains at least 75% (18) of the possible 8-hour running averages. Complete sampling over a three year period requires an average of 90% valid days with each having at least 75% valid days.

Data listed as not meeting the minimum statistical selection criteria in this report were so noted after evaluation using the criteria

above. Although short term averages (3, 8, 24 hours) have been computed for certain sites not meeting the annual criteria, these averages may not be representative of an entire year's air quality. In certain circumstances where even the 75% criteria is met, the number and/or magnitude of short term averages may not be directly comparable from one year to the next because of seasonal distributional differences.

For summary purposes, the data is expressed in the number of figures to which the raw data is validated. Extra figures may be carried in the averaging technique, but the result is rounded to the appropriate number of figures. For example, the values 9, 9, 10 are averaged to give 9; whereas the values 9.0, 9.0, 10.0 are averaged to 9.3. The raw data itself should not be expressed to more significant figures than the sensitivity of the monitoring methodology allows.

In comparing data to the various air quality standards, the data are implicitly rounded to the number of significant figures specified by that standard. For example, to exceed the 0.12 ppm hourly ozone standard, an hourly value must be 0.125 ppm or higher, to exceed the 9 ppm CO 8-hour standard, an 8-hour average must be 9.5 ppm or higher. Peak averages, though, will be expressed to the number of significant figures appropriate to that monitoring methodology.

National Ambient Air Quality Standards (NAAQS) for particulate matter (PM_{10}), sulfur dioxide (SO_2) and carbon monoxide (CO) have short-term standards for ambient air concentrations (24 hours or less) not to be exceeded more than once per year. In the case of ozone, the expected number of exceedances (one hour per day greater than 0.12 ppm) may not average more than one per year in any period of three consecutive years. The 8-hour ozone standard is concentration based and as such is the average of the fourth highest value each year over a three year period. The standards are promulgated in this manner in order to protect the public from excessive levels in pollution both in terms of acute and chronic health effects.

The following data tables detail and summarize air quality in Illinois in 1998. The tables of rankings list the sites with valid annual averages from highest to lowest. The tables of short term exceedences list those sites which exceeded any of the short term primary standards (24 hours or less). The detailed data tables list averages and peak concentrations for all monitoring sites in Illinois.

Table B1

1998
OZONE IN EXCESS OF THE PRIMARY STANDARD OF ONE HOUR PER DAY GREATER THAN 0.12 PARTS PER MILLION

STATION	ADDRESS	DATE	MAXIMUM VALUE (PPM)
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)			
COOK COUNTY			
Evanston	531 Lincoln	Sep 6	0.133
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)			
ST. CLAIR COUNTY			
East St. Louis	13th & Tudor	Sep 4	0.140
75 WEST CENTRAL ILLINOIS INTRASTATE			
JERSEY COUNTY			
Jerseyville	Liberty St.	Sep 12	0.125

Table B2

1998
OZONE

STATION	ADDRESS	NUMBER OF DAYS VALID APR-OCT	NUMBER OF DAYS GREATER THAN 0.12 PPM	HIGHEST SAMPLES (parts per million) 1-HOUR 1ST	1-HOUR 2ND	1-HOUR 3RD	1-HOUR 4TH	8-HOUR 1ST	8-HOUR 2ND	8-HOUR 3RD	8-HOUR 4TH
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)											
PEORIA COUNTY											
Peoria	Hurlburt & MacArthur	213	0	0.086	0.086	0.084	0.084	0.079	0.079	0.076	0.075
Peoria Heights	508 E. Glen	209	0	0.094	0.083	0.082	0.082	0.087	0.078	0.076	0.076
66 EAST CENTRAL ILLINOIS INTRASTATE											
CHAMPAIGN COUNTY											
Champaign	606 E. Grove	211	0	0.111	0.105	0.100	0.093	0.090	0.089	0.084	0.083
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)											
COOK COUNTY											
Alsip	4500 W. 123rd St.	212	0	0.111	0.100	0.099	0.097	0.089	0.086	0.083	0.078
Calumet City	1703 State St.	206	0	0.088	0.086	0.085	0.083	0.078	0.074	0.070	0.069
Chicago - CTA	320 S. Franklin	212	0	0.092	0.090	0.087	0.085	0.079	0.075	0.074	0.069
Chicago - Jardine	1000 E. Ohio	214	0	0.106	0.104	0.095	0.093	0.086	0.082	0.079	0.079
Chicago - SWFP	3300 E Cheltenham	213	0	0.106	0.092	0.092	0.091	0.093	0.081	0.081	0.080
Chicago - SE Police	103rd & Luella	211	0	0.114	0.109	0.088	0.086	0.090	0.088	0.072	0.069
Chicago - Taft	6545 W. Hurlbut	213	0	0.089	0.083	0.079	0.075	0.076	0.069	0.065	0.065
Chicago - Truman	1145 W. Wilson	204	0	0.107	0.106	0.097	0.093	0.091	0.083	0.080	0.077
Chicago - University	5720 S. Ellis	214	0	0.100	0.090	0.087	0.087	0.088	0.075	0.075	0.070
Cicero	1830 S. 51st Ave.	201	0	0.092	0.091	0.084	0.084	0.077	0.073	0.071	0.071
Des Plaines	1375 5th St.	213	0	0.091	0.090	0.090	0.088	0.082	0.080	0.078	0.078
Evanston	531 Lincoln	201	1	0.133	0.107	0.106	0.099	0.095	0.093	0.090	0.086
Lemont	729 Houston	207	0	0.101	0.086	0.086	0.083	0.078	0.076	0.073	0.070
Northbrook	750 Dundee Rd.	214	0	0.111	0.104	0.097	0.097	0.092	0.085	0.084	0.084
DuPAGE COUNTY											
Lisle	Morton Arboretum	211	0	0.114	0.097	0.085	0.082	0.086	0.071	0.068	0.068
KANE COUNTY											
Elgin	665 Dundee	205	0	0.097	0.092	0.091	0.085	0.077	0.077	0.075	0.074
LAKE COUNTY											
Deerfield	1321 Wilmot Rd.	214	0	0.106	0.095	0.094	0.093	0.088	0.083	0.082	0.077
Libertyville	1441 Lake St.	211	0	0.095	0.094	0.091	0.087	0.082	0.077	0.076	0.074
Waukegan	Golf & Jackson	214	0	0.121	0.107	0.104	0.101	0.105	0.091	0.090	0.088
Zion	Camp Logan	208	0	0.124	0.105	0.105	0.104	0.107	0.092	0.091	0.087
McHENRY COUNTY											
Cary	1st St. & Three Oaks	214	0	0.094	0.092	0.086	0.085	0.085	0.079	0.079	0.078
WILL COUNTY											
Braidwood	36400 S. Essex Rd.	211	0	0.102	0.095	0.092	0.091	0.089	0.086	0.086	0.081
South Lockport	2021 Lawrence	208	0	0.100	0.089	0.089	0.086	0.079	0.078	0.074	0.073

Primary 1-Hour Standard 0.12 ppm; 8-Hour Standard 0.08 ppm

Table B2

1998
OZONE

STATION	ADDRESS	VALID APR-OCT	NUMBER OF DAYS GREATER THAN 0.12 PPM	HIGHEST SAMPLES (parts per million) 1-HOUR 1ST	2ND	3RD	4TH	8-HOUR 1ST	2ND	3RD	4TH
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)											
ROCK ISLAND COUNTY											
Moline	30 18th St.	209	0	0.092	0.086	0.086	0.080	0.074	0.074	0.072	0.072
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)											
MADISON COUNTY											
Alton	409 Main St.	212	0	0.105	0.102	0.102	0.099	0.088	0.081	0.079	0.079
Edwardsville	Poag Road	213	0	0.124	0.118	0.114	0.105	0.096	0.091	0.091	0.088
Maryville	200 W. Division	211	0	0.113	0.109	0.101	0.101	0.091	0.086	0.085	0.084
Wood River	54 N. Walcott	210	0	0.117	0.108	0.106	0.101	0.094	0.086	0.084	0.084
RANDOLPH COUNTY											
Houston	Twp Rds. 150 & 45	213	0	0.106	0.099	0.099	0.097	0.085	0.084	0.083	0.082
ST. CLAIR COUNTY											
East St. Louis	13th & Tudor	213	1	0.140	0.101	0.098	0.098	0.100	0.082	0.080	0.078
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)											
WINNEBAGO COUNTY											
Loves Park	1405 Maple	202	0	0.083	0.082	0.082	0.081	0.077	0.076	0.074	0.071
Rockford	1500 Post	207	0	0.085	0.085	0.083	0.080	0.076	0.076	0.074	0.073
74 SOUTHEAST ILLINOIS INTRASTATE											
EFFINGHAM COUNTY											
Effingham	Route 45 South	214	0	0.096	0.093	0.092	0.091	0.086	0.084	0.083	0.083
HAMILTON COUNTY											
Dale	Route 142	210	0	0.093	0.089	0.088	0.087	0.085	0.078	0.076	0.075
75 WEST CENTRAL ILLINOIS INTRASTATE											
ADAMS COUNTY											
Quincy	732 Hampshire	207	0	0.102	0.095	0.089	0.083	0.089	0.087	0.077	0.073
JERSEY COUNTY											
Jerseyville	Liberty St.	213	1	0.125	0.122	0.122	0.105	0.101	0.097	0.095	0.091
MACON COUNTY											
Decatur	2200 N. 22nd St.	214	0	0.103	0.094	0.093	0.091	0.083	0.080	0.080	0.078
MACOUPIN COUNTY											
Nilwood	Heaton & DuBois	213	0	0.111	0.109	0.107	0.107	0.085	0.084	0.084	0.079
SANGAMON COUNTY											
Springfield	2875 N. Dirksen	213	0	0.097	0.093	0.093	0.093	0.082	0.079	0.079	0.078

Primary 1-Hour Standard 0.12 ppm; 8-Hour Standard 0.08 ppm

Table B3

1998
PARTICULATE MATTER (PM_{10}) VALUES IN EXCESS OF THE 24-HOUR PRIMARY STANDARD OF 150 MICROGRAMS PER CUBIC METER

STATION	ADDRESS	DATE	VALUE (ug/m^3)
75 NORTH CENTRAL ILLINOIS INTRASTATE			
LASALLE COUNTY			
Oglesby	308 Portland	November 27	168

Table B4

1998
PARTICULATE MATTER (PM_{10})
(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	>150 ug/m^3	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	6-day	60	0	57	52	47	42	26
TAZEWELL COUNTY									
East Peoria	235 E. Washington	6-day	60	0	58	54	49	42	26
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Champaign	600 N. Neil	6-day	57	0	52	51	44	43	24
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd St.	6-day	61	0	72	70	57	54	30
Blue Island	12700 Sacramento	6-day	60	0	66	64	57	57	33
Chicago - Carver	13100 S. Doty	6-day	58	0	72	71	61	59	36
Chicago - CAPS	805 N. Michigan Ave.	6-day	60	0	65	64	62	60	38
Chicago - Farr	3300 S. Michigan Ave.	6-day	59	0	63	58	56	55	31
Chicago - Mayfair	4850 Wilson Ave.	6-day	59	0	86	80	73	70	43
Chicago - Marsh	9810 S. Exchange	6-day	57	0	87	78	71	67	35
Chicago - Washington HS	3535 E. 114th St.	6-day	60	0	71	62	56	55	33
Chicago - Washington ES	3611 E. 114th St.	1-day	362	0	71	64	62	61	27
Cicero	15th St. & 50th Ave.	6-day	59	0	70	70	64	64	34
Hoffman Estates	1100 W. Higgins Rd.	6-day	60	0	67	59	49	48	26
Lyons	4043 Joliet Ave.	6-day	60	0	74	70	64	63	32
Lyons Township	50th St. & Glencoe Ave.	1-day	363	0	111	105	102	100	35
Merrionette Park	1800 Meadow Lane Dr.	6-day	56	0	65	60	60	60	31
Midlothian	15205 Crawford Ave.	6-day	60	0	60	56	52	49	28
South Holland	170th & S. Park Ave.	6-day	58	0	57	55	54	52	30
Summit	60th St. & 74th Ave.	6-day	56	0	81	69	59	52	35
DuPAGE COUNTY									
Bensenville	711 E. Jefferson	6-day	61	0	80	60	57	52	30
Naperville	400 S. Eagle St.	6-day	59	0	50	47	44	43	23
KANE COUNTY									
Geneva	300 Randall Rd.	6-day	55	0	71	69	63	57	24

Primary 24-Hour Standard 150 ug/m^3; Primary Annual Standard 50 ug/m^3

Table B4

1998
PARTICULATE MATTER (PM_{10})
(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	>150 ug/m ^{3}	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
WILL COUNTY									
Joliet	Midland & Campbell Sts.	6-day	58	0	58	47	47	46	23
Joliet	Rte. 6 and Young Rd.	6-day	58	0	53	46	43	43	24
Rockdale	Midland & Otis	6-day	57	0	52	49	49	49	27
ROCK ISLAND COUNTY									
East Moline	915 16th Ave.	6-day	60	0	88	57	55	53	30
Rock Island	1528 3rd Ave.	6-day	58	0	54	49	48	46	26
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Alton	409 Main St.	6-day	60	0	66	64	60	58	32
Granite City	23rd & Madison	6-day	61	0	91	75	68	68	38
Granite City	15th & Madison	6-day	60	0	152	121	92	85	46
Granite City	2420 Nameoki	6-day	57	0	73	67	66	56	32
Granite City	2040 Washington	1-day	355	0	136	120	108	106	40
South Roxana	211 Sinclair	6-day	60	0	61	56	52	50	32
Wood River	54 N. Walcott	6-day	57	0	59	56	55	53	30
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	6-day	59	0	90	82	71	68	37
71 NORTH CENTRAL ILLINOIS INTRASTATE									
LASALLE COUNTY									
Oglesby	308 Portland Ave.	1-day	363	1	168	134	110	101	29
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	333 15th Ave.	6-day	60	0	55	52	48	47	24
74 SOUTHEAST ILLINOIS INTRASTATE									
JACKSON COUNTY									
Carbondale	607 E. College	6-day	58	0	47	45	43	41	23

Primary 24-Hour Standard 150 ug/m^3; Primary Annual Standard 50 ug/m^3

Table B4

1998
PARTICULATE MATTER (PM_{10})
(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	NUMBER OF SAMPLES >150 ug/m ^{3}	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	732 Hampshire	6-day	60	0	49	45	45	42	22
MACON COUNTY									
Decatur	2300 Geddes	6-day	61	0	77	68	59	55	32
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	6-day	58	0	46	44	43	41	22
SANGAMON COUNTY									
Springfield	State Fair Grounds	6-day	59	0	75	65	51	45	25

Primary 24-Hour Standard 150 ug/m^3; Primary Annual Standard 50 ug/m^3

Table B5

1998
SHORT-TERM TRENDS
PARTICULATE MATTER (PM_{10})

STATION	ADDRESS	ANNUAL ARITHMETIC MEANS (ug/m^3) 1993	1994	1995	1996	1997	1998
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	613 N.E. Jefferson	20	21	20	21	26	26
TAZEWELL COUNTY							
East Peoria	235 E. Washington	23	26	23	24	27	26
66 EAST CENTRAL ILLINOIS INTRASTATE							
CHAMPAIGN COUNTY							
Champaign	600 N. Neil	22	25	22	19	22	24
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Alsip	4500 W. 123rd St.	-	-	-	25	25	30
Blue Island	12700 Sacramento	30	36	31	30	28	33
Chicago - Carver	13100 S. Doty	31	36	36	31	31	58
Chicago - CAPS	805 N. Michigan Ave.	30	36	33	32	33	38
Chicago - Farr	3300 S. Michigan Ave.	33	37	34	27	27	31
Chicago - Mayfair	4850 Wilson Ave.	47	44	38	40	38	43
Chicago - Marsh	9810 S. Exchange	+	41	35	32	28	35
Chicago - Washington HS	3535 E. 114th St.	34	36	35	31	+	33
Chicago - Washington ES	3611 E. 114th St.	-	-	-	30	28	27
Cicero	15th St. & 50th Ave.	35	39	37	34	32	34
Hoffman Estates	1100 W. Higgins Rd.	-	-	27	22	21	26
Lyons	4043 Joliet Ave.	29	36	31	28	28	32
Lyons Township	50th St. & Glencoe Ave.	+	46	37	36	34	35
Merrionette Park	1800 Meadow Lane Dr.	-	-		29	26	31
Midlothian	15205 Crawford Ave.	-	-	-	28	25	28
South Holland	170th & S. Park Ave.	27	34	31	28	26	30
Summit	60th St. & 74th Ave.	37	42	39	34	37	35
DuPAGE COUNTY							
Bensenville	711 E Jefferson	19	22	25	23	26	30
Naperville	400 S. Eagle St.	21	20	19	20	23	23
KANE COUNTY							
Geneva	300 Randall Rd.	-	-	-	-	21	24

- Station not in operation during the year.

+ Did not meet minimum statistical selection criteria (See Appendix B.1).

Primary Annual Standard 50 ug/m^3

Table B5

1998
SHORT-TERM TRENDS
PARTICULATE MATTER (PM_{10})

STATION	ADDRESS	ANNUAL ARITHMETIC MEANS (ug/m^3) 1993	1994	1995	1996	1997	1998
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)							
WILL COUNTY							
Joliet	Midland & Campbell Sts.	26	25	24	22	23	23
Joliet	Rte. 6 and Young Rd.	-	20	22	21	24	24
Rockdale	Midland & Otis	+	34	26	24	25	27
ROCK ISLAND COUNTY							
East Moline	915 16th Ave.	21	20	20	20	24	30
Rock Island	1528 3rd Ave.	23	27	24	25	24	26
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
MADISON COUNTY							
Alton	409 Main St.	29	30	30	29	30	32
Granite City	23rd & Madison	33	35	37	33	36	38
Granite City	15th & Madison	44	+	46	39	47	46
Granite City	2420 Nameoki	29	35	31	29	31	32
Granite City	2040 Washington	40	45	41	40	37	40
South Roxana	211 Sinclair	28	32	30	27	29	32
Wood River	54 N. Walcott	26	32	29	26	25	30
ST. CLAIR COUNTY							
East St. Louis	13th St. & Tudor Ave.	33	34	34	33	34	37
71 NORTH CENTRAL ILLINOIS INTRASTATE							
LASALLE COUNTY							
Oglesby	308 Portland Ave.	29	35	31	29	28	29
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)							
WINNEBAGO COUNTY							
Rockford	333 15th Ave.	16	19	19	18	26	24
74 SOUTHEAST ILLINOIS INTRASTATE							
JACKSON COUNTY							
Carbondale	607 E. College	+	20	24	19	22	23

\- Station not in operation during the year.

\+ Did not meet minimum statistical selection criteria (See Appendix B.1).

Primary Annual Standard 50 ug/m^3

Table B5

1998
SHORT-TERM TRENDS
PARTICULATE MATTER (PM_{10})

STATION	ADDRESS	ANNUAL ARITHMETIC MEANS (ug/m^3) 1993	1994	1995	1996	1997	1998
75 WEST CENTRAL ILLINOIS INTRASTATE							
ADAMS COUNTY							
Quincy	732 Hampshire	20	25	23	21	20	22
MACON COUNTY							
Decatur	2300 Geddes	28	29	30	28	27	32
MACOUPIN COUNTY							
Nilwood	Heaton & DuBois	19	20	18	17	19	22
SANGAMON COUNTY							
Springfield	State Fair Grounds	-	-	-	-	23	25

\- Station not in operation during the year.

\+ Did not meet minimum statistical selection criteria (See Appendix B.1).

Primary Annual Standard 50 ug/m^3

Table B6

1998
CARBON MONOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	1-HR >35 PPM	8-HR >9 PPM	HIGHEST SAMPLES (ppm) 1-HOUR AVERAGE 1ST	2ND	3RD	8-HOUR AVERAGE 1ST	2ND	3RD
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)										
PEORIA COUNTY										
Peoria	1005 N. University	8368	0	0	8.0	7.8	7.7	6.5	5.8	4.5
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)										
COOK COUNTY										
Calumet City	1703 State St.	8636	0	0	4.6	4.0	4.0	3.7	3.3	2.6
Chicago - CTA Building	320 S. Franklin	8693	0	0	9.2	7.0	6.4	4.4	4.2	3.3
Cicero	1830 S. 51st Ave.	8691	0	0	5.6	5.5	5.2	3.3	3.1	3.0
Maywood	1505 S. First Ave	8722	0	0	6.3	6.2	6.0	5.1	5.0	4.6
Schiller Park	4743 N. Mannheim	8278	0	0	4.7	4.5	3.9	3.6	2.6	2.6
WILL COUNTY										
Braidwood	36400 S. Essex Rd.	8467	0	0	1.7	1.1	1.0	0.8	0.7	0.7
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)										
MADISON COUNTY										
Granite City	2001 Edison	8418	0	0	6.8	6.0	4.8	3.7	2.9	2.7
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)										
WINNEBAGO COUNTY										
Rockford	425 E. State	8703	0	0	7.8	6.8	6.6	4.2	3.6	3.6
75 WEST CENTRAL ILLINOIS INTRASTATE										
SANGAMON COUNTY										
Springfield	6th & Monroe	8493	0	0	10.2	6.4	3.2	3.1	1.9	1.7

Primary 1-Hour Standard 35 ppm; Primary 8-Hour Standard 9 ppm

Table B7

1998
SULFUR DIOXIDE VALUES IN EXCESS OF THE 24-HOUR PRIMARY STANDARD OF 0.14 PPM OR THE 3-HOUR SECONDARY STANDARD OF 0.5 PPM

STATION	ADDRESS	DATE	AVERAGING TIME	NUMBER OF EXCURSIONS	TIME PERIOD	MAXIMUM AVERAGE
70 METROPOLITAN ST LOUIS INTERSTATE (IL - MO)						
ST CLAIR COUNTY						
Marissa	Risdon School Rd.	Jan 16	3-hour	1	1300-1600	0.656

Table B7

1998
SULFUR DIOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	3-HR > 0.5	24-HR > 0.14	HIGHEST SAMPLES 3-HR AVG. 1ST	3-HR AVG. 2ND	24-HR AVG. 1ST	24-HR AVG. 2ND	ANNUAL ARITHMETIC MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	Hurlburt & MacArthur	8518	0	0	0.144	0.132	0.048	0.048	0.007
TAZEWELL COUNTY									
Pekin	272 Derby	8673	0	0	0.317	0.224	0.125	0.040	0.006
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Champaign	606 E. Grove	8654	0	0	0.049	0.047	0.019	0.014	0.003
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Bedford Park	7800 W. 65th St.	8657	0	0	0.103	0.093	0.035	0.034	0.007
Blue Island	12700 Sacramento	8596	0	0	0.166	0.113	0.062	0.054	0.008
Calumet City	1703 State Sr.	8652	0	0	0.042	0.037	0.017	0.016	0.004
Chicago - CTA	320 S. Franklin	8663	0	0	0.120	0.080	0.041	0.040	0.005
Chicago - SE Police	103rd & Luella	8697	0	0	0.040	0.035	0.016	0.015	0.002
Chicago - Washington ES	3611 E. 114th St.	8583	0	0	0.105	0.068	0.028	0.025	0.005
Cicero	1830 S. 51st Ave.	8673	0	0	0.090	0.078	0.032	0.031	0.005
Lemont	729 Houston	8684	0	0	0.094	0.093	0.038	0.024	0.006
DuPAGE COUNTY									
Lisle	Morton Arboretum	8633	0	0	0.076	0.053	0.026	0.022	0.003
WILL COUNTY									
Joliet	Rte 6 & Young Rd.	8537	0	0	0.073	0.063	0.033	0.022	0.004
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
Moline	30 18th St.	8623	0	0	0.026	0.024	0.009	0.009	0.002

Primary 24-Hour Standard 0.14 ppm; Primary Annual Standard 0.03 ppm

Table B7

1998
SULFUR DIOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	3-HR > 0.5	24-HR > 0.14	HIGHEST SAMPLES 3-HR AVG. 1ST	3-HR AVG. 2ND	24-HR AVG. 1ST	24-HR AVG. 2ND	ANNUAL ARITHMETIC MEAN
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Alton	409 Main St.	8648	0	0	0.156	0.120	0.087	0.041	0.008
Granite City	2001 Edison	8585	0	0	0.090	0.073	0.025	0.025	0.006
South Roxana	Michigan Ave.	8600	0	0	0.124	0.102	0.044	0.043	0.008
Wood River	54 N. Walcott	8446	0	0	0.099	0.099	0.031	0.029	0.006
Wood River	1710 Vaughn Rd.	2183	0	0	0.208	0.178	0.099	0.052	+
RANDOLPH COUNTY									
Houston	Twp Rd 150 & Twp Rd 45	8449	0	0	0.324	0.291	0.052	0.050	0.005
ST. CLAIR COUNTY									
East St. Louis	13th & Tudor	8656	0	0	0.145	0.117	0.048	0.038	0.008
Marissa	Risdon School Rd.	8686	1	0	0.656	0.359	0.102	0.069	0.005
Sauget	Little Ave.	8657	0	0	0.154	0.148	0.100	0.072	0.008
74 SOUTHEAST ILLINOIS INTRASTATE									
WABASH COUNTY									
Mount Carmel	Division St	6641	0	0	0.097	0.082	0.026	0.025	0.004
Rural Wabash County	South of SR-1	7770	0	0	0.157	0.114	0.035	0.033	0.005
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	732 Hampshire	8686	0	0	0.098	0.081	0.026	0.024	0.004
MACON COUNTY									
Decatur	2200 N. 22nd St.	8604	0	0	0.061	0.057	0.024	0.023	0.005
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	8620	0	0	0.040	0.035	0.022	0.011	0.003
SANGAMON COUNTY									
Springfield	Sewage Plant	8620	0	0	0.210	0.190	0.078	0.061	0.006

Primary 24-Hour Standard 0.14 ppm; Primary Annual Standard 0.03 ppm

Table B8

1998
SHORT-TERM TRENDS
SULFUR DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1993	1994	1995	1996	1997	1998
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	Hurlburt & MacArthur	0.006	0.006	0.007	0.007	0.007	0.007
TAZEWELL COUNTY							
Pekin	272 Derby	0.006	0.007	0.008	0.006	0.007	0.006
66 EAST CENTRAL ILLINOIS INTRASTATE							
CHAMPAIGN COUNTY							
Champaign	606 E. Grove	+	0.004	0.003	0.003	0.004	0.003
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Bedford Park	7800 W. 65th St.	0.008	0.009	0.009	0.007	0.008	0.007
Blue Island	12700 Sacramento	0.008	0.007	0.005	0.005	0.007	0.008
Calumet City	1703 State St.	0.005	0.005	0.005	0.003	0.004	0.004
Chicago -CTA	320 S. Franklin	-	-	+	0.005	0.005	0.005
Chicago - SE Police	103rd & Luella	0.003	0.003	0.003	0.002	0.002	0.002
Chicago - Washington ES	3611 E. 114th St.	0.006	0.005	0.006	0.005	0.006	0.005
Cicero	1830 S. 51st Ave.	0.005	0.005	0.004	0.004	0.006	0.005
Lemont	729 Houston	0.007	0.007	0.005	0.006	0.005	0.006
DuPAGE COUNTY							
Lisle	Morton Arboretum	0.004	0.003	0.003	0.003	0.004	0.003
WILL COUNTY							
Joliet	Rte 6 & Young Rd.	0.004	0.004	0.004	0.004	0.005	0.004
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)							
ROCK ISLAND COUNTY							
Moline	30 18th St.	0.003	0.003	0.003	0.002	0.002	0.002

- Station not in operation during year shown

+ Did not meet minimum statistical selection criteria (See Section B.1)

Primary Annual Standard 0.03 ppm

Table B8

1998
SHORT-TERM TRENDS
SULFUR DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1993	1994	1995	1996	1997	1998
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
MADISON COUNTY							
Alton	409 Main St.	0.007	0.008	0.010	0.009	0.007	0.008
Granite City	2001 Edison	-	-	0.007	0.006	0.006	0.006
South Roxanna	Michigan Ave.	0.011	0.012	0.011	0.010	0.010	0.008
Wood River	54 N. Walcott	0.007	0.006	0.007	0.007	0.006	0.006
Wood River	1710 Vaughn Rd.	-	0.012	0.012	0.011	0.009	+
RANDOLPH COUNTY							
Houston	Twp Rd 150 & Twp Rd 45	0.005	0.006	0.006	0.006	0.005	0.005
ST. CLAIR COUNTY							
East St. Louis	13th & Tudor	0.010	0.010	0.009	0.009	0.009	0.008
Marissa	Risdon School Rd.	0.005	0.007	0.005	0.004	0.005	0.005
Sauget	Little Ave.	0.008	0.008	0.009	0.009	0.009	0.008
74 SOUTHEAST ILLINOIS INTRASTATE							
WABASH COUNTY							
Mount Carmel	Division St.	0.013	0.012	0.011	0.009	0.007	0.004
Rural Wabash County	South of SR-1	0.011	0.011	0.009	0.009	0.007	0.005
75 WEST CENTRAL ILLINOIS INTRASTATE							
ADAMS COUNTY							
Quincy	732 Hampshire	0.003	0.005	0.005	0.004	0.004	0.004
MACON COUNTY							
Decatur	2200 N. 22nd St.	0.005	0.006	0.005	0.005	0.006	0.005
MACOUPIN COUNTY							
Nilwood	Heaton & DuBois	0.003	0.003	0.003	0.002	0.003	0.003
SANGAMON COUNTY							
Springfield	Sewage Plant	0.006	0.006	0.006	0.006	0.006	0.006

- Station not in operation during year shown

+ Did not meet minimum statistical selection criteria (See Section B.1)

Primary Annual Standard 0.03 ppm

Table B9

1998
NITROGEN DIOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES	HIGHEST SAMPLES 1-HOUR 1ST	1-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	ANNUAL ARITHMETIC MEAN
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Calumet City	1703 State St.	8649	0.097	0.092	0.049	0.046	0.025
Chicago - CTA	320 S. Franklin	8348	0.112	0.109	0.068	0.067	0.032
Chicago - Jardine [1]	1000 E. Ohio	3612	0.091	0.090	0.048	0.045	+
Chicago - Truman	1145 W. Wilson	8394	0.094	0.091	0.053	0.049	0.024
Chicago - University	5720 S. Ellis	8695	0.094	0.093	0.051	0.049	0.023
Cicero	1830 S. 51st Ave.	8674	0.104	0.103	0.053	0.052	0.026
Northbrook	750 Dundee Rd.	8616	0.070	0.069	0.033	0.032	0.017
Schiller Park	4743 N. Mannheim	8460	0.103	0.098	0.069	0.062	0.031
LAKE COUNTY							
Zion [1]	Camp Logan	3533	0.065	0.064	0.021	0.020	+
WILL COUNTY							
Braidwood	36400 S. Essex Rd.	8309	0.044	0.042	0.027	0.024	0.009
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
ST. CLAIR COUNTY							
East St. Louis	13th & Tudor	8238	0.065	0.064	0.033	0.033	0.018

[1] PAMS monitor operated only during “ozone season”

\+ Did nor meet minimum statistical selection criteria (See Appendix B.1)

Primary Annual Standard 0.053 ppm

Table B10

1998
SHORT-TERM TRENDS
NITROGEN DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1993	1994	1995	1996	1997	1998
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Calumet City	1703 State St.	0.021	0.024	0.024	0.022	0.024	0.025
Chicago - CTA	320 S. Franklin	0.030	0.032	0.032	0.031	0.034	0.032
Chicago - Truman	1145 W. Wilson	-	-	-	-	-	0.024
Chicago - University	5720 S. Ellis	0.023	0.025	0.027	0.024	0.024	0.023
Cicero	1820 S. 51st St.	0.025	0.026	0.027	0.027	0.027	0.026
Northbrook	750 Dundee Rd.	-	-	-	-	+	0.017
Schiller Park	4743 N. Mannheim	-	-	-	-	-	0.031
WILL COUNTY							
Braidwood	36400 S. Essex Rd.	-	-	+	0.009	0.009	0.009
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
ST. CLAIR COUNTY							
East St. Louis	13th & Tudor	0.019	0.020	0.021	0.020	0.019	0.018

- Station not in operation during year shown

+ Did not meet minimum statistical selection criteria (See Section B.1)

Primary Annual Standard 0.053 ppm

Table B11

1998
LEAD
(micrograms per cubic meter)

STATION	ADDRESS	NUMBER OF QUARTERS >1.5	QUARTERLY AVERAGES 1st	2nd	3rd	4th	ANNUAL MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	613 N.E. Jefferson	0	0.01	0.02	0.02	0.02	0.02
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Alsip	4500 W. 123rd St.	0	0.02	0.02	0.02	0.02	0.02
Chicago - Bright	10740 S. Calhoun	0	0.04	0.03	0.06	0.03	0.04
Chicago - Cermak	735 W. Harrison	0	0.07	0.10	0.05	0.09	0.08
Chicago - Mayfair	4850 Wilson Ave.	0	0.03	0.03	0.03	0.02	0.03
Chicago - Washington	3535 E. 114th St.	0	0.03	0.03	0.04	0.03	0.03
Maywood	1500 Maybrook Dr.	0	0.05	0.05	0.04	0.03	0.04
Schiller Park	4243 N. Mannheim Rd.	0	0.02	0.02	0.02	0.02	0.02
Summit	60th St. & 74th Ave.	0	0.02	0.03	0.04	0.02	0.03
DuPAGE COUNTY							
Bensenville	711 E. Jefferson	0	0.03	0.03	0.03	0.02	0.03
WILL COUNTY							
Joliet	Midland & Campbell Sts.	0	0.01	0.01	0.01	0.01	0.01
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)							
ROCK ISLAND COUNTY							
East Moline	915 16th Ave.	0	0.01	0.01	0.01	0.01	0.01
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
MADISON COUNTY							
Granite City	15th & Madison	0	0.10	0.08	0.06	0.10	0.08
Granite City	2044 Washington	0	0.04	0.06	0.07	0.08	0.06
Wood River	54 N. Walcott	0	0.04	0.09	0.06	0.14	0.08
Chemetco - 1N	Rural County	1	+	2.59	-	-	+
Chemetco - 2E	Rural County	0	0.70	0.33	0.15	0.58	0.43
Chemetco - 4SE	Rural County	0	0.15	0.26	0.06	1.01	0.38
Chemetco - 5N	Rural County	0	-	-	0.83	1.11	+
ST. CLAIR COUNTY							
East St. Louis	13th St. & Tudor Ave.	0	0.04	0.06	0.05	0.10	0.07

- Station not in operation during quarter

+ Station did not meet minimum statistical selection criteria (See Section B.1).

Primary Quarterly Standard 1.5 ug/m3

Table B11

1998
LEAD
(micrograms per cubic meter)

STATION	ADDRESS	NUMBER OF QUARTERS >1.5	QUARTERLY AVERAGES 1st	2nd	3rd	4th	ANNUAL MEAN
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)							
WINNEBAGO COUNTY							
Rockford	204 S. 1st St.	0	0.04	0.03	0.03	0.02	0.03
75 WEST CENTRAL ILLINOIS INTRASTATE							
MACON COUNTY							
Decatur	2300 Geddes	0	0.02	0.02	0.02	0.02	0.02
MACOUPIN COUNTY							
Nilwood	Heaton & DuBois	0	0.01	0.01	0.02	0.02	0.02

Primary Quarterly Standard 1.5 ug/m3

Table B12

1998
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	ARSENIC TOTAL SAMPLES	ARSENIC HIGHEST 1st	ARSENIC HIGHEST 2nd	ARSENIC ARITH. MEAN	BERYLLIUM TOTAL SAMPLES	BERYLLIUM HIGHEST 1st	BERYLLIUM HIGHEST 2nd	BERYLLIUM ARITH. MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	60	0.005	0.004	0.001	60	0.000	0.000	0.000
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	500 W. 123rd. St.	60	0.009	0.007	0.002	NA			
Chicago - Bright	10740 S. Calhoun	59	0.012	0.008	0.002	NA			
Chicago - Cermak	735 W. Harrison	61	0.008	0.007	0.002	NA			
Chicago - Mayfair	4850 Wilson Ave	60	0.011	0.006	0.002	NA			
Chicago - Washington	3535 E. 114th St.	59	0.007	0.006	0.002	NA			
Maywood	1500 Maybrook Dr.	60	0.008	0.005	0.002	NA			
Schiller Park	4743 N. Mannheim Rd.	59	0.004	0.003	0.001	59	0.000	0.000	0.000
Summit	60th St. & 74th Ave.	57	0.007	0.005	0.001	NA			
DuPAGE COUNTY									
Bensenville	711E. Jefferson	62	0.004	0.004	0.001	62	0.000	0.000	0.000
WILL COUNTY									
Joliet	Midland & Campbell Sts.	57	0.003	0.003	0.001	57	0.000	0.000	0.000
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
East Moline	915 16th Ave.	57	0.004	0.002	0.001	57	0.000	0.000	0.000
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	58	0.147	0.026	0.006	58	0.000	0.000	0.000
Granite City	2044 Washington	57	0.109	0.025	0.005	57	0.000	0.000	0.000
Wood River	54 N. Walcott	56	0.087	0.010	0.005	56	0.000	0.000	0.000
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	55	0.010	0.008	0.003	55	0.000	0.000	0.000
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	204 S. 1st St.	58	0.004	0.003	0.001	58	0.000	0.000	0.000
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACON COUNTY									
Decatur	2300 Geddes	59	0.003	0.003	0.001	59	0.000	0.000	0.000
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	59	0.015	0.009	0.001	59	0.000	0.000	0.000

Table B12

1998
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN
			CADMIUM				**CHROMIUM**		
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	60	0.000	0.000	0.000	60	0.007	0.003	0.000
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	60	0.006	0.004	0.002	60	0.015	0.012	0.005
Chicago - Bright	10740 S. Calhoun	59	0.005	0.005	0.002	59	0.023	0.018	0.007
Chicago - Cermak	735 W. Harrison	61	0.017	0.012	0.003	61	0.023	0.018	0.009
Chicago - Mayfair	4850 Wilson Ave	60	0.004	0.003	0.002	60	0.022	0.020	0.007
Chicago - Washington	3535 E. 114th St.	59	0.004	0.004	0.002	59	0.024	0.019	0.007
Maywood	1500 Maybrook Dr.	60	0.007	0.005	0.002	60	0.031	0.030	0.012
Schiller Park	4743 N. Mannheim Rd.	59	0.000	0.000	0.000	59	0.010	0.007	0.002
Summit	60th St. & 74th Ave.	57	0.004	0.004	0.002	57	0.018	0.015	0.005
DuPAGE COUNTY									
Bensenville	711 E. Jefferson	62	0.002	0.002	0.000	62	0.007	0.003	0.001
WILL COUNTY									
Joliet	Midland & Campbell Sts.	57	0.000	0.000	0.000	57	0.003	0.003	0.001
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
East Moline	915 16th Ave.	57	0.005	0.000	0.000	57	0.003	0.003	0.000
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	58	0.012	0.009	0.001	58	0.027	0.017	0.005
Granite City	2044 Washington	57	0.024	0.022	0.002	57	0.038	0.030	0.009
Wood River	54 N. Walcott	56	0.011	0.008	0.001	56	0.003	0.003	0.000
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	55	0.054	0.028	0.006	55	0.007	0.006	0.001
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	204 S. 1st St.	58	0.002	0.002	0.000	58	0.007	0.007	0.001
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACON COUNTY									
Decatur	2300 Geddes	59	0.012	0.005	0.000	59	0.003	0.003	0.001
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	59	0.000	0.000	0.000	59	0.000	0.000	0.000

Table B12

1998
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	IRON TOTAL SAMPLES	IRON HIGHEST 1st	IRON HIGHEST 2nd	IRON ARITH. MEAN	MANGANESE TOTAL SAMPLES	MANGANESE HIGHEST 1st	MANGANESE HIGHEST 2nd	MANGANESE ARITH. MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	60	1.67	1.23	0.48	60	0.104	0.074	0.022
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	60	1.32	1.30	0.58	60	0.112	0.101	0.033
Chicago - Bright	10740 S. Calhoun	59	2.98	2.85	1.12	59	0.607	0.550	0.176
Chicago - Cermak	735 W. Harrison	61	5.63	5.15	1.87	61	0.210	0.206	0.070
Chicago - Mayfair	4850 Wilson Ave	60	7.87	4.16	1.27	60	0.346	0.212	0.063
Chicago - Washington	3535 E. 114th St.	59	5.64	3.35	1.14	59	0.547	0.537	0.155
Maywood	1500 Maybrook Dr.	60	8.85	8.06	3.22	60	0.462	0.408	0.142
Schiller Park	4743 N. Mannheim Rd.	59	2.61	2.39	1.27	59	0.117	0.071	0.031
Summit	60th St. & 74th Ave.	57	6.54	1.43	0.77	57	0.388	0.187	0.041
DuPAGE COUNTY									
Bensenville	711 E. Jefferson	62	3.77	2.20	0.88	62	0.092	0.072	0.028
WILL COUNTY									
Joliet	Midland & Campbell Sts.	57	1.61	1.18	0.47	57	0.054	0.054	0.019
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
East Moline	915 16th Ave.	57	1.16	1.00	0.41	57	0.073	0.068	0.023
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	58	9.34	5.19	2.01	58	0.635	0.353	0.144
Granite City	2044 Washington	57	15.22	9.15	2.97	57	1.511	0.642	0.228
Wood River	54 N. Walcott	56	1.64	1.31	0.55	56	0.074	0.056	0.024
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	55	2.72	2.53	1.03	55	0.146	0.093	0.042
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	204 S. 1st St.	58	1.92	1.82	0.70	58	0.266	0.124	0.031
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACON COUNTY									
Decatur	2300 Geddes	59	2.04	1.44	0.68	59	0.086	0.067	0.024
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	59	0.60	0.54	0.22	59	0.025	0.025	0.007

Table B12

1998
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN
			NICKEL				**SELENIUM**		
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	60	0.000	0.000	0.000	60	0.006	0.006	0.002
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	60	0.036	0.013	0.007	NA			
Chicago - Bright	10740 S. Calhoun	59	0.021	0.020	0.009	NA			
Chicago - Cermak	735 W. Harrison	61	0.017	0.017	0.010	NA			
Chicago - Mayfair	4850 Wilson Ave	60	0.018	0.014	0.008	NA			
Chicago - Washington	3535 E. 114th St.	59	0.020	0.016	0.008	NA			
Maywood	1500 Maybrook Dr.	60	0.023	0.020	0.011	NA			
Schiller Park	4743 N. Mannheim Rd.	59	0.000	0.000	0.000	59	0.005	0.004	0.001
Summit	60th St. & 74th Ave.	57	0.022	0.015	0.008	NA			
DuPAGE COUNTY									
Bensenville	711 E. Jefferson	62	0.000	0.000	0.000	62	0.006	0.004	0.001
WILL COUNTY									
Joliet	Midland & Campbell Sts.	57	0.000	0.000	0.000	57	0.006	0.004	0.001
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
East Moline	915 16th Ave.	57	0.000	0.000	0.000	57	0.005	0.003	0.001
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	58	0.000	0.000	0.000	58	0.005	0.004	0.001
Granite City	2044 Washington	57	0.000	0.000	0.000	57	0.007	0.005	0.002
Wood River	54 N. Walcott	56	0.116	0.046	0.004	56	0.004	0.003	0.002
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	55	0.010	0.000	0.000	55	0.005	0.004	0.001
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	204 S. 1st St.	58	0.000	0.000	0.000	58	0.005	0.005	0.001
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACON COUNTY									
Decatur	2300 Geddes	59	0.013	0.000	0.000	59	0.007	0.004	0.001
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	59	0.000	0.000	0.000	59	0.004	0.004	0.001

Table B12

1998
FILTER ANALYSIS DATA
(micrograms per cubic meter)

VANADIUM

STATION	ADDRESS	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)					
PEORIA COUNTY					
Peoria	613 N.E. Jefferson	60	0.002	0.002	0.000
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)					
COOK COUNTY					
Alsip	4500 W. 123rd. St.	NA			
Chicago - Bright	10740 S. Calhoun	NA			
Chicago - Cermak	735 W. Harrison	NA			
Chicago - Mayfair	4850 Wilson Ave	NA			
Chicago - Washington	3535 E. 114th St.	NA			
Maywood	1500 Maybrook Dr.	NA			
Schiller Park	4743 N. Mannheim Rd.	59	0.005	0.002	0.000
Summit	60th St. & 74th Ave.	NA			
DuPAGE COUNTY					
Bensenville	711 E. Jefferson	62	0.002	0.002	0.000
WILL COUNTY					
Joliet	Midland & Campbell Sts.	57	0.002	0.002	0.000
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)					
ROCK ISLAND COUNTY					
East Moline	915 16th Ave.	58	0.000	0.000	0.000
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)					
MADISON COUNTY					
Granite City	15th & Madison	58	0.022	0.012	0.004
Granite City	2044 Washington	57	0.026	0.025	0.007
Wood River	54 N. Walcoot	56	0.005	0.005	0.001
ST. CLAIR COUNTY					
East St. Louis	13th St. & Tudor Ave.	55	0.008	0.005	0.001
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)					
WINNEBAGO COUNTY					
Rockford	204 S. 1st St.	58	0.002	0.000	0.000
75 WEST CENTRAL ILLINOIS INTRASTATE					
MACON COUNTY					
Decatur	2300 Geddes	59	0.000	0.000	0.000
MACOUPIN COUNTY					
Nilwood	Heaton & DuBois	59	0.002	0.002	0.000

Table B12

1998
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	NITRATES TOTAL SAMPLES	NITRATES HIGHEST 1st	NITRATES HIGHEST 2nd	NITRATES ARITH. MEAN	SULFATES TOTAL SAMPLES	SULFATES HIGHEST 1st	SULFATES HIGHEST 2nd	SULFATES ARITH. MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	60	15.6	14.1	5.5	60	27.5	19.4	8.2
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	60	17.2	13.6	5.4	60	16.8	13.7	6.4
Chicago - Bright	10740 S. Calhoun	59	12.9	12.8	5.0	59	21.6	17.8	7.3
Chicago - Cermak	735 W. Harrison	61	19.8	17.2	6.2	61	22.6	21.2	8.1
Chicago - Mayfair	4850 Wilson Ave	60	18.4	18.3	5.5	60	21.1	14.9	6.9
Chicago - Washington	3535 E. 114th St.	59	11.9	11.7	4.5	59	17.5	16.4	6.9
Maywood	1500 Maybrook Dr.	60	17.9	17.8	5.0	60	23.6	23.4	8.1
Schiller Park	4743 N. Mannheim Rd.	59	15.7	14.2	6.2	59	20.6	16.4	8.3
Summit	60th St. & 74th Ave.	57	18.0	17.8	5.4	57	21.2	19.1	7.0
DuPAGE COUNTY									
Bensenville	711 E. Jefferson	62	16.5	15.1	5.9	62	22.4	19.1	7.9
WILL COUNTY									
Joliet	Midland & Campbell Sts.	57	15.6	14.6	5.5	57	21.1	16.9	8.0
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
East Moline	915 16th Ave.	57	18.0	16.1	5.0	57	12.7	12.4	6.9
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	58	15.0	12.4	5.5	58	27.9	19.0	10.1
Granite City	2044 Washington	57	17.0	12.8	6.0	57	31.0	20.7	10.7
Wood River	54 N. Walcott	56	11.7	10.7	5.0	56	22.2	19.7	9.0
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	55	12.5	9.5	4.8	55	24.7	21.9	10.2
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	204 S. 1st St.	58	24.9	15.1	5.7	58	29.0	18.9	6.8
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACON COUNTY									
Decatur	2300 Geddes	59	14.4	11.4	5.2	59	21.4	17.6	8.9
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	59	10.2	10.0	4.4	59	19.3	17.2	7.7

Table B13

1998
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)								
COOK COUNTY								
Chicago	1000 E. Ohio							
COMPOUNDS								
Ethane						18.0	15.3	8.5
Ethylene						14.7	12.4	4.6
Propane						17.7	14.7	6.6
Propylene						5.4	4.7	1.8
Acetylene						12.9	9.1	4.3
N - Butane						24.9	15.5	5.8
Isobutane						25.3	20.5	5.0
Trans - 2 - Butene						1.7	0.5	0.2
Cis - 2 - Butene						38.2	18.1	1.2
N - Pentane						12.6	6.9	3.4
Isopentane						46.7	36.3	11.1
1 - Pentene						8.9	5.2	0.3
Trans - 2 - Pentene						1.3	0.6	0.1
Cis - 2 - Pentene						0.9	0.6	0.0
3 - Methylpentane						7.6	5.7	2.0
N - Hexane						8.1	5.1	1.6
N - Heptane						6.5	4.1	1.3
N - Octane						1.8	1.3	0.5
N - Nonane						6.1	2.3	0.9
Cyclopentane						3.6	2.6	0.4
Isoprene						1.2	0.9	0.1
2,2 - Dimethylbutane						1.1	0.7	0.1
2,4 - Dimethylpentane						2.1	1.9	0.5
Cyclohexane						6.4	5.4	1.2
3 - Methylhexane						6.6	6.0	1.7
2,2,4 - Trimethylpentane						9.3	5.4	2.5
2,3,4 - Trimethylpentane						2.6	1.6	0.5
3 - Methylheptane						1.4	1.3	0.2
Methylcyclohexane						2.2	1.5	0.5
Methylcyclopentane						5.8	4.1	0.8
2 - Methylhexane						5.0	4.0	0.7
1 - Butene						6.0	5.6	2.0
2,3 - Dimethylbutane						1.1	1.0	0.5
2 - Methylpentane						9.1	7.9	2.4
2,3 - Dimethylpentane						6.0	5.4	1.5
2 - Methylheptane						16.0	11.4	2.0
Benzene						19.6	7.4	2.2

Table B13

1998
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
COMPOUNDS								
Toluene						24.0	15.1	4.2
Ethylbenzene						7.3	3.5	0.9
O - Xylene						8.6	4.4	1.3
M/P Xylene						28.8	12.1	3.1
1,3,5 - Trimethylbenzene						2.7	2.2	0.5
1,2,4 - Trimethylbenzene						6.5	6.0	1.3
N - Propylbenzene						4.1	2.4	0.3
Isopropylbenzene						7.0	5.5	0.8
Styrene						26.1	7.8	1.9
N-Decane						4.2	4.1	1.2
N-Undecane						3.1	2.9	0.6
O-Ethyltolune						3.6	1.5	0.6
M-Ethyltolune						3.7	2.9	0.9
P-Ethyltolune						3.8	3.4	1.0
M-Diethylbenzene						1.7	1.6	0.2
P-Diethylbenzene						1.1	0.9	0.1
1,2,3 Trimethylbenzen						4.3	2.3	0.7
Formaldehyde[1]				9.4	9.0			4.2
Acetaldehyde[1]				22.8	2.8			1.4
Northbrook	750 Dundee Rd.							
COMPOUNDS								
Ethane		45.6	38.4			17.3	15.1	6.5
Ethylene		53.3	23.2			7.0	5.5	2.4
Propane		33.3	21.2			7.7	7.5	3.5
Propylene		20.0	15.5			3.9	2.6	1.3
Acetylene		29.1	21.9			2.9	2.9	1.2
N - Butane		34.2	33.6			7.8	6.8	3.0
Isobutane		44.4	26.2			6.9	4.3	1.4
Trans - 2 - Butene		1.8	1.8			0.5	0.5	0.2
Cis - 2 - Butene		30.0	1.7			1.3	0.3	0.1
N - Pentane		40.4	27.7			8.3	8.3	3.0
Isopentane		88.5	67.6			17.6	16.4	6.2
1 - Pentene		3.0	2.5			0.6	0.5	0.1
Trans - 2 - Pentene		9.7	5.7			1.1	0.7	0.2
Cis - 2 - Pentene		3.0	2.8			0.4	0.4	0.1
3 - Methylpentane		19.5	13.1			3.1	2.8	1.0
N - Hexane		13.5	12.6			3.7	3.5	1.3

[1] Values in ppb (volume)

Table B13

1998
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
N - Heptane		6.9	6.4			1.6	1.5	0.6
N - Octane		12.9	2.6			0.7	0.5	0.2
N - Nonane		16.9	15.4			3.4	2.5	0.5
Cyclopentane		37.9	11.7			1.8	1.6	0.2
Isoprene		22.3	19.5			6.2	5.3	2.5
2,2 - Dimethylbutane		3.0	2.7			0.8	0.7	0.3
2,4 - Dimethylpentane		13.7	11.3			1.8	1.5	0.6
Cyclohexane		2.2	2.0			0.7	0.5	0.2
3 - Methylhexane		9.0	8.4			1.9	1.9	0.8
2,2,4 - Trimethylpentane		38.2	34.5			6.9	5.0	2.1
2,3,4 - Trimethylpentane		11.4	10.8			2.1	1.6	0.6
3 - Methylheptane		3.5	2.7			0.5	0.4	0.2
Methylcyclohexane		19.7	10.5			1.0	1.2	0.3
Methylcyclopentane		24.4	9.8			2.4	2.1	0.8
2 - Methylhexane		8.2	7.8			2.0	1.6	0.7
1 - Butene		3.1	2.2			0.3	0.3	0.1
2,3 - Dimethylbutane		8.4	7.8			1.9	1.4	0.6
2 - Methylpentane		20.5	17.7			4.5	4.1	1.8
2,3 - Dimethylpentane		17.8	14.8			3.3	2.5	1.0
2 - Methylheptane		2.7	2.6			0.5	0.5	0.2
Benzene		16.4	13.7			4.8	3.8	1.8
Toluene		44.8	36.4			13.0	10.8	5.2
Ethylbenzene		6.6	5.7			1.4	1.4	2.0
O - Xylene		13.0	8.8			2.0	1.8	0.8
M/P Xylene		28.3	20.2			5.3	5.2	2.4
1,3,5 - Trimethylbenzene		5.8	5.5			1.2	1.1	0.4
1,2,4 - Trimethylbenzene		13.9	11.8			3.3	2.5	1.1
N - Propylbenzene		7.7	1.9			0.4	0.3	0.4
Isopropylbenzene		3.0	2.7			0.4	0.3	0.1
Styrene		2.8	2.6			0.7	0.7	0.2
N-Decane		1.3	1.3			0.2	0.2	0.3
N-Undecane		3.8	3.7			1.1	1.0	0.4
O-Ethyltolune		8.9	6.7			0.8	0.8	0.2
M-Ethyltolune		8.4	7.2			2.0	1.6	0.7
P-Ethyltolune		4.6	3.7			1.2	0.9	0.3
M-Diethylbenzene		6.9	5.3			1.4	0.8	0.2
P-Diethylbenzene		3.8	3.4			0.6	0.5	0.2
1,2,3 Trimethylbenzen		8.6	6.9			2.3	2.0	0.8
Formaldehyde[1]				6.7	5.8			2.2
Acetaldehyde[1]				2.3	2.2			1.0

[1] Values in ppb (volume)

Table B13

1998
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
LAKE COUNTY								
Zion	Camp Logan							
COMPOUNDS								
Ethane		28.2	15.7			8.9	8.2	4.5
Ethylene		11.4	10.4			3.9	3.3	1.4
Propane		51.9	46.4			7.3	6.9	3.2
Propylene		19.3	6.8			1.6	1.5	.0.5
Acetylene		26.2	5.7			2.2	1.6	0.7
N - Butane		31.6	17.8			4.9	4.7	2.0
Isobutane		18.1	9.6			2.4	2.4	0.9
Trans - 2 - Butene		1.4	0.9			0.4	0.3	0.3
Cis - 2 - Butene		30.4	0.5			1.3	0.1	0.0
N - Pentane		52.2	43.5			11.7	9.7	2.4
Isopentane		34.7	25.0			12.4	11.1	3.9
1 - Pentene		1.0	0.8			0.2	0.2	0.1
Trans - 2 - Pentene		10.0	1.3			0.5	0.3	0.1
Cis - 2 - Pentene		12.6	0.7			0.5	0.2	0.0
3 - Methylpentane		20.2	5.9			2.0	2.0	0.7
N - Hexane		25.4	6.6			2.4	2.2	0.8
N - Heptane		2.8	2.3			0.9	0.9	0.3
N - Octane		13.0	3.2			0.9	0.5	0.1
N - Nonane		1.5	1.4			0.6	0.5	0.1
Cyclopentane		24.7	14.1			1.3	1.3	0.1
Isoprene		47.5	42.9			12.1	11.3	4.8
2,2 - Dimethylbutane		1.1	0.1			0.4	0.3	0.1
2,4 - Dimethylpentane		22.9	2.9			0.9	0.9	0.2
Cyclohexane		1.5	1.5			0.9	0.9	0.1
3 - Methylhexane		3.6	3.1			1.1	1.1	0.4
2,2,4 - Trimethylpentane		14.5	12.4			3.2	3.0	1.2
2,3,4 - Trimethylpentane		17.8	4.1			1.1	1.0	0.3
3 - Methylheptane		8.6	1.0			0.4	0.3	0.1
Methylcyclohexane		19.8	2.0			1.1	0.5	0.1
Methylcyclopentane		25.1	6.5			1.8	1.4	0.4
2 - Methylhexane		17.9	3.2			1.0	1.0	0.3
1 - Butene		1.8	1.0			0.3	0.2	0.1
2,3 - Dimethylbutane		5.4	4.5			1.0	1.0	0.3
2 - Methylpentane		37.1	7.9			3.3	2.7	3.2
2,3 - Dimethylpentane		14.2	3.8			1.3	1.2	0.4
2 - Methylheptane		0.9	0.8			0.2	0.2	0.0
Benzene		12.5	10.4			2.7	2.4	1.1
Toluene		30.2	27.5			8.0	7.2	3.1
Ethylbenzene		6.3	6.3			1.8	1.6	0.4

Table B13

1998
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
COMPOUNDS								
O - Xylene		6.5	6.4			2.2	1.7	0.5
M/P Xylene		23.2	23.2			5.5	4.4	1.0
1,3,5 - Trimethylbenzene		2.8	2.4			0.5	0.4	0.1
1,2,4 - Trimethylbenzene		7.0	5.9			2.0	1.7	0.6
N - Propylbenzene		1.1	0.9			0.3	0.3	0.1
Isopropylbenzene		2.6	1.0			0.2	0.2	0.0
Styrene		2.3	1.8			0.4	0.3	0.1
N-Decane		26.1	2.6			1.0	0.3	0.0
N-Undecane		17.0	5.1			2.3	0.7	0.1
O-Ethyltolune		1.8	1.6			0.4	0.4	1.0
M-Ethyltolune		4.3	5.3			1.1	1.0	0.3
P-Ethyltolune		2.7	2.3			0.4	0.3	0.1
M-Diethylbenzene		10.5	1.2			1.4	0.3	0.1
P-Diethylbenzene		2.1	1.3			0.4	0.3	0.1
1,2,3 Trimethylbenzen		4.5	4.1			1.1	1.0	0.3
Formaldehyde[1]				10.7	7.2			1.8
Acetaldehyde[1]				6.8	3.1			0.9
WILL COUNTY								
Braidwood	36400 S. Essex Road							
COMPOUNDS								
Ethane		28.0	20.2			7.0	7.0	3.9
Ethylene		29.4	24.9			4.1	3.2	0.1
Propane		83.7	79.0			11.9	10.4	3.6
Propylene		19.2	13.4			2.6	2.1	0.4
Acetylene		3.4	2.3			1.1	0.7	0.2
N - Butane		77.7	32.6			3.6	3.5	4.6
Isobutane		55.2	12.7			4.4	2.7	0.1
Trans - 2 - Butene		0.6	0.0			0.0	0.0	0.0
Cis - 2 - Butene		0.0	0.0			0.0	0.0	0.0
N - Pentane		14.6	8.8			3.3	2.6	1.0
Isopentane		17.5	16.9			5.0	4.8	1.6
1 - Pentene		0.4	0.4			0.0	0.0	0.0
Trans - 2 - Pentene		0.9	0.1			0.1	0.0	0.0
Cis - 2 - Pentene		12.3	0.0			0.5	0.0	0.0
3 - Methylpentane		24.1	22.7			9.9	6.7	1.7
N - Hexane		9.3	6.8			1.1	1.0	0.3
N - Heptane		5.3	5.2			0.5	0.4	0.1
N - Octane		7.7	5.0			0.6	0.5	0.0

[1] Values in ppb (volume)

Table B13

1998
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
COMPOUNDS								
N - Nonane		4.0	3.3			0.4	0.3	0.4
Cyclopentane		5.2	2.6			1.1	0.2	0.0
Isoprene		9.4	4.5			0.8	0.7	0.2
2,2 - Dimethylbutane		1.5	1.3			0.2	0.1	0.0
2,4 - Dimethylpentane		23.7	11.2			1.0	0.3	0.0
Cyclohexane		2.8	2.6			0.3	0.2	0.0
3 - Methylhexane		7.9	6.6			0.8	0.6	0.1
2,2,4 - Trimethylpentane		11.6	10.9			1.4	1.2	0.2
2,3,4 - Trimethylpentane		18.6	5.5			0.8	0.4	0.1
3 - Methylheptane		9.9	8.8			0.8	0.4	0.0
Methylcyclohexane		11.5	7.4			1.3	0.6	0.1
Methylcyclopentane		4.2	4.1			0.8	0.5	0.1
2 - Methylhexane		18.2	6.2			0.8	0.7	0.1
1 - Butene		16.0	6.8			1.4	0.8	0.1
2,3 - Dimethylbutane		2.1	1.8			0.6	0.2	0.0
2 - Methylpentane		4.8	4.6			1.0	0.8	0.1
2,3 - Dimethylpentane		4.2	2.7			0.3	0.3	0.1
2 - Methylheptane		4.6	3.3			0.5	0.3	0.0
Benzene		14.3	13.5			1.7	1.5	0.7
Toluene		10.4	8.5			4.0	3.0	1.2
Ethylbenzene		9.8	8.9			0.9	0.4	0.2
O - Xylene		4.4	3.8			0.5	0.5	0.1
M/P Xylene		7.0	6.1			1.3	1.2	0.3
1,3,5 - Trimethylbenzene		6.9	4.1			0.4	0.2	0.0
1,2,4 - Trimethylbenzene		4.3	3.1			0.5	0.5	0.1
N - Propylbenzene		5.1	4.8			0.3	0.3	0.0
Isopropylbenzene		6.0	2.6			0.3	0.3	0.0
Styrene		7.0	6.9			0.6	0.6	0.1
N-Decane		5.8	3.3			0.2	0.2	0.1
N-Undecane		7.8	4.4			0.8	0.7	0.2
O-Ethyltolune		9.5	8.4			0.5	0.4	0.1
M-Ethyltolune		4.6	2.3			0.2	0.2	0.0
P-Ethyltolune		7.2	5.7			0.4	0.4	0.1
M-Diethylbenzene		9.6	8.7			0.5	0.5	0.1
P-Diethylbenzene		8.6	3.8			0.5	0.5	0.1
1,2,3 Trimethylbenzen		6.9	4.3			1.0	0.9	0.2
Formaldehyde[1]				3.9	3.6			1.7
Acetaldehyde[1]				1.4	1.3			0.7

[1] Values in ppb (volume)

Table B14

1998

PARTICULATE MATTER FINE ($PM_{2.5}$)

(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	>50 ug/m^3	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd St.	6-day	57	0	34.4	31.7	31.3	26.2	+
Blue Island	12700 Sacramento	6-day	46	0	34.5	32.4	26.4	25.0	+
Chicago-Mayfair	4850 Wilson Ave.	1-day	255	0	56.5	45.8	41.4	41.0	19.5
Chicago-Washington HS	3535 E. 114th St.	6-day	61	0	38.1	30.6	29.1	27.0	14.8
Lyons Township	50th St. & Glencoe Ave.	6-day	61	0	43.6	36.6	32.6	31.1	16.2
Merrionette Park	1800 Meadow Lane	6-day	57	0	34.9	32.6	32.3	27.0	14.0
Midlothian	15205 Crawford	6-day	48	0	38.8	36.2	31.0	27.0	+
Northbrook	750 Dundee Road	6-day	54	0	34.5	32.9	32.5	31.0	+
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	2040 Washington	6-day	60	0	42.8	38.1	31.1	29.7	17.9
Wood River	54 N. Walcott	6-day	60	0	33.5	28.7	28.1	27.4	14.1

\+ Did not meet minimum statistical selection criteria (See Appendix B.1).

Note: These samples were taken with dichotomous samplers and as such are not directly comparable to the $PM_{2.5}$ standards.

Table B15

1998
MERCURY
(nanograms per cubic meter)

STATION	ADDRESS	TOTAL NUMBER OF SAMPLES	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Alsip	4500 W. 123rd St.	53	2.6	2.3	2.3	2.2	1.7
Blue Island	12700 Sacramento	54	3.5	3.1	3.1	3.1	2.0

APPENDIX C
PRECISION AND ACCURACY DATA SUMMARY AND TABLES

C.1 PRECISION AND ACCURACY DATA SUMMARY

The U.S. Environmental Protection Agency (USEPA) regulations governing the SLAMS/NAMS network were published in 40 CFR, Part 58. These regulations specify, in addition to other criteria, the minimum quality assurance requirements for monitoring of pollutants for which National Ambient Air Quality Standards (NAAQS) have been established. This section summarizes one aspect of the quality assurance program, that being, the assessment of the quality of the monitoring data by the determination of the accuracy and precision of the monitoring equipment. Each agency that is responsible for a portion of the SLAMS network is required to perform this precision and accuracy testing. Illinois EPA and Cook County DEC are responsible for the testing of their respective parts of the Illinois SLAMS network. USEPA has established guidelines for evaluating the upper and lower 95% probability limits. The quarterly probability limits for precision data should fall within a range of -15% to +15% and the quarterly probability limits for accuracy data should fall within a range of -20% to +20%. These ranges are only guidelines, but when they are exceeded, procedures should be reviewed to determine the reason for the wide variation in the data.

Table C1

1998
PRECISION DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF SITES	TOTAL SAMPLES	PROBABILITY LIMITS (percent) UPPER 95%	LOWER 95%
SITES OPERATED BY ILLINOIS EPA					
Sulfur Dioxide	1st Quarter	21	242	5	-3
	2nd Quarter	20	243	6	-1
	3rd Quarter	20	242	8	-2
	4th Quarter	21	247	7	-8
	Year		974	6	-4
Ozone	1st Quarter	28	290	8	-8
	2nd Quarter	33	408	6	-8
	3rd Quarter	33	397	9	-7
	4th Quarter	32	319	8	-9
	Year		1414	8	-8
Carbon Monoxide	1st Quarter	7	80	4	-6
	2nd Quarter	7	80	7	-4
	3rd Quarter	7	85	9	-5
	4th Quarter	7	81	8	-8
	Year		326	7	-6
Nitrogen Dioxide	1st Quarter	5	57	4	-9
	2nd Quarter	7	73	2	-11
	3rd Quarter	7	84	7	-10
	4th Quarter	5	55	4	-11
	Year		269	4	-10
Inhalable Particulate PM_{10}	1st Quarter	1	13	5	-12
	2nd Quarter	1	15	4	-10
	3rd Quarter	1	15	-2	-15
	4th Quarter	1	15	16	-26
	Year		58	6	-16
Lead	1st Quarter	1	13	-12	-12
	2nd Quarter	1	14	16	+16
	3rd Quarter	1	13	6	+6
	4th Quarter	1	16	-1	-13
	Year		56	2	-1

Table C1

1998
PRECISION DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF SITES	TOTAL SAMPLES	PROBABILITY LIMITS (percent) UPPER 95%	LOWER 95%
SITES OPERATED BY COOK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL					
Sulfur Dioxide	1st Quarter	6	78	4	-4
	2nd Quarter	6	75	5	-5
	3rd Quarter	6	79	4	-5
	4th Quarter	6	78	4	-4
	Year		310	4	-4
Ozone	1st Quarter	3	40	3	-4
	2nd Quarter	10	126	4	-5
	3rd Quarter	10	126	3	-4
	4th Quarter	10	61	3	-4
	Year		353	3	-4
Carbon Monoxide	1st Quarter	3	39	5	-4
	2nd Quarter	3	48	6	-5
	3rd Quarter	3	40	4	-4
	4th Quarter	3	37	5	-2
	Year		164	5	-4
Nitrogen Dioxide	1st Quarter	4	49	5	-4
	2nd Quarter	4	49	5	-4
	3rd Quarter	4	51	7	-4
	4th Quarter	4	49	7	-3
	Year		198	6	-4
Inhalable Particulate PM_{10}	1st Quarter	1	13	5	-12
	2nd Quarter	1	14	10	-13
	3rd Quarter	1	13	19	-33
	4th Quarter	1	16	13	-7
	Year		56	12	-16
Lead	1st Quarter	1	14	(1)	(1)
	2nd Quarter	1	15	(1)	(1)
	3rd Quarter	1	15	(1)	(1)
	4th Quarter	1	15	(1)	(1)
	Year		58	(1)	(1)

1. All collected samples were below USEPA established minimums. Probability Limits could not be calculated.

Table C2

1998
ACCURACY DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF AUDITS	PROBABILITY LIMITS LEVEL 1 +95%	LEVEL 1 -95%	LEVEL 2 +95%	LEVEL 2 -95%	LEVEL 3 +95%	LEVEL 3 -95%	LEVEL 4 +95%	LEVEL 4 -95%
SITES OPERATED BY ILLINOIS EPA										
Sulfur Dioxide	1st Quarter	5	10	-5	9	-9	6	-10		
	2nd Quarter	4	1	-10	0	-7	1	-7		
	3rd Quarter	5	-3	-10	9	-2	9	-5		
	4th Quarter	8	2	-14	4	-13	6	-14	13	-21
	Year	22	2	-10	5	-8	5	-9	13	-21
Ozone	1st Quarter	7	3	-9	4	-11	4	-12		
	2nd Quarter	13	11	-16	4	-13	3	-10		
	3rd Quarter	12	7	-11	5	-10	3	-8		
	4th Quarter	6	6	-18	9	-18	6	-18		
	Year	38	7	-14	5	-13	4	-12		
Carbon Monoxide	1st Quarter	2	5	-11	1	-1	5	-4		
	2nd Quarter	0 (1)	NA	NA	NA	NA	NA	NA		
	3rd Quarter	2	4	+2	6	0	7	-4		
	4th Quarter	1 (1)	NA	NA	NA	NA	NA	NA		
	Year	5	4	-4	4	0	6	-4		
Nitrogen Dioxide	1st Quarter	1 (1)	NA	NA	NA	NA	NA	NA		
	2nd Quarter	1 (1)	NA	NA	NA	NA	NA	NA		
	3rd Quarter	2	17	+15	28	-6	30	-13		
	4th Quarter	1 (1)	NA	NA	NA	NA	NA	NA		
	Year	5	17	+15	28	-6	30	-13		
Inhalable Particulate PM_{10}	1st Quarter	12			11	-10				
	2nd Quarter	14			-1	-10				
	3rd Quarter	15			9	-12				
	4th Quarter	13			13	-2				
	Year	54			8	-8				
Lead	1st Quarter	3	-1	-7	-1	-9				
	2nd Quarter	3	3	-9	-4	-7				
	3rd Quarter	3	1	-4	-2	-7				
	4th Quarter	3	2	-6	3	-10				
	Year	12	1	-6	-1	-8				

1. Only one or no audits was performed for this parameter during the quarter. Probability Limits could not be calculated.

Table C2

1998
ACCURACY DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF AUDITS	PROBABILITY LIMITS LEVEL 1 +95%	LEVEL 1 -95%	LEVEL 2 +95%	LEVEL 2 -95%	LEVEL 3 +95%	LEVEL 3 -95%	LEVEL 4 +95%	LEVEL 4 -95%
SITES OPERATED BY COOK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL										
Sulfur Dioxide	1st Quarter	2	4	-4	3	0	5	+1		
	2nd Quarter	4	6	-3	8	+2	8	+4		
	3rd Quarter	5	8	-1	9	-2	9	-5		
	4th Quarter	5	5	-6	6	-6	10	-6		
	Year	16	6	-4	6	-2	8	-2		
Ozone	1st Quarter	3	2	-1	1	-1	2	-1		
	2nd Quarter	8	5	-5	4	-2	6	-5		
	3rd Quarter	10	4	-5	4	-6	4	-6		
	4th Quarter	10	5	-8	2	-6	2	-6		
	Year	31	4	-5	3	-4	4	-4		
Carbon Monoxide	1st Quarter	3	3	-2	2	0	1	-1		
	2nd Quarter	3	4	0	5	0	6	-3		
	3rd Quarter	2	0	-5	2	-6	6	-10		
	4th Quarter	2	-2	-2	4	-4	4	-8		
	Year	10	1	-2	3	-3	4	-6		
Nitrogen Dioxide	1st Quarter	1 (1)	NA	NA	NA	NA	NA	NA		
	2nd Quarter	2	6	+1	5	+1	3	+1		
	3rd Quarter	4	1	-5	8	-8	6	-8		
	4th Quarter	1 (1)	NA	NA	NA	NA	NA	NA		
	Year	8	4	-2	6	-4	4	-4		
Inhalable Particulate PM_{10}	1st Quarter	15			-2	-9				
	2nd Quarter	14			-1	-7				
	3rd Quarter	15			3	-7				
	4th Quarter	3			-1	-8				
	Year	47			0	-8				
Lead	1st Quarter	3	1	-2	0	-7				
	2nd Quarter	3	3	-9	-4	-7				
	3rd Quarter	3	1	-4	-2	-7				
	4th Quarter	3	-3	-6	-5	-6				
	Year	12	0	-5	-3	-7				

1. Only one audit was performed for this parameter during the quarter. Probability Limits could not be calculated.

APPENDIX D
POINT SOURCE EMISSION INVENTORY SUMMARY TABLES

Table D1

1998
Point Source Emission Distribution (Tons/Year)

Category	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
External Fuel Combustion					
Electric Generation	23496.4	958527.9	379438.8	3219.5	11364.5
Industrial	4498.1	71512.9	51547.4	1267.0	8659.8
Commercial/Institutional	927.5	17486.0	6680.3	216.2	1946.5
Space Heating	35.7	134.6	656.0	8.4	120.5
Internal Fuel Combustion					
Electric Generation	169.9	434.0	3470.0	306.7	1866.3
Industrial	61.5	150.2	14775.3	3011.2	3204.1
Commercial/Institutional	18.0	16.3	378.2	39.8	179.3
Engine Testing	60.3	96.8	1546.8	117.6	572.8
Off Highway 2-stroke Gasoline	0.1	0.3	4.3	4.5	20.0
Fugitive Emissions	0.2	0.3	5.4	0.2	1.3
Industrial Processes					
Chemical Manufacturing	3858.8	15138.5	1746.2	16092.5	21891.5
Food/Agriculture	23875.8	393.2	632.2	10814.9	198.8
Primary Metal Production	6866.9	7786.0	7694.7	10951.7	44610.6
Secondary Metal Production	5569.4	127.6	3521.2	863.1	2620.6
Mineral Products	20622.1	22259.2	11426.6	1573.0	2621.9
Petroleum Industry	3578.0	98148.5	20558.3	7748.4	1351.7
Paper and wood Products	538.6	0.0	43.3	434.2	10.5
Rubber and Plastic Products	1255.3	0.8	56.0	5562.8	33.2
Fabricated Metal Products	1299.8	208.4	497.0	3821.9	1121.9
Oil and Gas Production	13.4	147.4	334.1	280.6	207.2
Building Construction	16.3	0.0	0.0	0.0	0.0
Miscelaneous Machinery	111.4	3.7	22.2	116.4	24.1
Electrical Equipment	38.3	17.4	6.3	214.1	3.8
Transportation Equipment	89.9	0.0	1.9	73.9	1.2
Health Services	0.4	0.0	0.4	67.5	0.0
Leather and Leather Products	35.1	0.0	0.0	61.8	0.0
Textile Products	13.2	0.0	3.6	11.2	0.5
Printing/Publishing (typesetting)	0.3	0.0	0.0	0.0	0.0
Process Cooling	5.4	0.0	0.0	0.0	0.0
In-Process Fuel Use	220.9	3251.1	1959.2	508.0	637.4
Miscellaneous Manufacturing	325.6	89.0	197.5	335.3	176.9
Organic Solvent Emissions					
Organic Solvent Use	57.5	0.0	2.7	3276.0	0.6
Surface Coating Operations	322.9	32.2	646.3	26998.9	80.3
Petroleum Product Storage	49.6	9.3	2.6	12588.9	69.5
Bulk Terminals/Plants	3.4	0.0	64.0	3221.6	39.0
Printing/Publishing	114.7	0.1	197.9	13145.4	26.7
Petroleum Marketing/Transport	0.6	0.0	3.1	1300.0	0.4
Organic Chemical Storage	17.7	0.0	0.6	944.8	0.4
Organic Chemical Transportation	1.6	0.0	0.0	90.4	0.0
Dry Cleaning	0.0	0.0	0.0	316.7	0.0
Organic Solvent Evaporation	41.7	77.7	80.6	4387.5	200.3

Table D1

1998
Point Source Emission Distribution (Tons/Year)

Category	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Solid Waste Disposal					
Government	226.4	72.9	661.9	308.7	750.2
Commercial/Institutional	342.2	39.1	138.2	51.9	707.4
Industrial	641.2	296.1	664.7	265.5	2794.2
Site Remediation	10.5	3.2	10.5	147.4	1.6
MACT Processes					
Food and Agriculture Processes	0.0	0.0	0.0	0.1	0.0
Styrene or Methacrylate Based Resins	0.0	0.0	0.0	16.0	0.0
Alkyd Resin Production	0.0	0.0	0.0	28.6	0.0
Vinyl Based Resins	185.5	0.1	0.0	108.5	0.0
Consumer Product Manufacturing Facilities	0.0	0.0	0.0	0.9	0.0
Paint Stripper Use	0.9	0.0	0.0	3.8	0.0
Totals	**99619.0**	**1196461.0**	**509676.25**	**134924.0**	**108117.3**

MACT stands for Maximum Achievable Control Technology. Many new SCC codes have been added to begin to identify emission points to begin to determine MACT requirements. Many of these emission points are still associated with the Chemical Manufacturing SCC codes that begin with 301. As time passes, the emissions in the Chemical Manufacturing category will shift to the MACT Processes category.

Table D2

1998
Estimated County Stationary Point Source Emissions (Tons/Year)

County	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Adams	807.2	6399.8	1214.2	2291.6	376.3
Alexander	1387.9	460.5	258.7	63.3	36.0
Bond	103.5	5.2	39.3	23.5	135.7
Boone	181.1	652.8	484.9	1254.9	116.8
Brown	13.1	0.0	1.7	0.6	0.2
Bureau	355.8	17.0	78.0	150.0	25.8
Calhoun	24.1	0.0	0.0	0.0	0.0
Carroll	202.4	117.5	138.4	208.7	58.1
Cass	152.5	0.4	25.1	14.0	5.4
Champaign	910.6	4653.7	2577.3	1240.0	521.2
Christian	1250.6	129435.8	39123.4	193.7	790.1
Clark	192.2	1.9	7.4	46.9	2.7
Clay	92.2	6.5	9.0	190.9	15.3
Clinton	104.2	564.8	1497.1	672.7	229.8
Coles	375.3	111.2	332.2	2292.9	137.5
Cook	20897.0	49162.2	39430.9	40166.4	60224.1
Crawford	1590.6	28573.5	8829.1	1066.7	401.7
Cumberland	52.5	2.1	4.5	30.0	6.8
DeKalb	273.4	6.3	254.1	322.3	33.3
DeWitt	380.4	26.8	201.3	240.2	78.8
Douglas	604.7	14509.4	5947.3	713.8	356.4
DuPage	767.7	421.7	1839.8	2259.3	973.6
Edgar	401.7	202.7	189.6	334.9	61.8
Edwards	81.6	0.0	0.1	583.8	0.5
Effingham	176.7	3.2	97.3	1159.8	19.7
Fayette	263.2	30.5	106.6	276.2	46.4
Ford	860.7	5.1	62.9	785.6	21.6
Franklin	95.8	5.4	15.8	305.5	4.4
Fulton	567.5	11683.1	6801.6	85.1	326.4
Gallatin	95.3	1.0	0.7	7.2	0.2
Greene	74.7	0.0	2.5	36.4	0.3
Grundy	888.6	4897.5	3088.9	1306.9	1956.4
Hamilton	46.0	0.6	4.3	7.0	1.1
Hancock	274.4	4.7	68.6	15.9	3.8

Table D2

1998
Estimated County Stationary Point Source Emissions (Tons/Year)

County	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Hardin	209.4	38.3	35.6	5.1	11.0
Henderson	135.2	0.1	9.4	10.4	4.9
Henry	282.6	39.8	3124.4	783.2	1034.7
Iroquois	556.8	12.8	36.9	145.3	141.4
Jackson	648.2	15341.3	3030.1	1303.1	644.5
Jasper	1271.4	12546.0	7043.9	81.1	467.4
Jefferson	544.6	474.0	293.2	1042.2	47.8
Jersey	56.2	0.0	0.0	17.6	0.0
Jo Daviess	276.6	5.4	383.7	1627.6	1948.2
Johnson	120.5	385.0	48.9	26.7	35.7
Kane	749.0	459.5	1087.4	2209.2	439.9
Kankakee	1562.9	60.9	1591.1	1468.2	583.7
Kendall	171.3	145.9	1710.1	259.9	293.0
Knox	241.3	11.0	328.8	410.1	27.5
Lake	1312.3	7041.1	10531.1	1813.4	1212.1
La Salle	2893.2	3387.6	5745.1	2124.3	588.8
Lawrence	239.5	7543.5	2196.3	2712.5	179.5
Lee	549.0	2978.3	781.9	435.3	208.0
Livingston	686.7	36.9	700.0	900.3	383.9
Logan	592.1	1491.1	522.5	58.2	40.6
McDonough	435.7	1758.1	292.9	126.8	42.7
McHenry	642.5	72.0	430.2	962.7	289.1
McLean	811.0	40.3	911.9	4024.2	129.0
Macon	2575.2	11584.0	6152.9	6241.9	2302.0
Macoupin	208.7	6.3	15.0	99.8	2.4
Madison	5545.2	62912.7	30385.7	11103.6	11163.2
Marion	189.9	14.1	163.6	2047.0	25.6
Marshall	466.5	1417.1	294.6	454.9	29.8
Mason	419.4	1634.1	1995.6	42.7	199.7
Massac	8668.3	97860.7	19106.9	386.3	763.8
Menard	92.8	0.0	0.5	5.4	18.9
Mercer	140.5	0.4	3.7	19.7	1.0
Monroe	133.0	2.8	43.7	27.1	12.9
Montgomery	3143.8	181464.8	38947.8	368.3	641.7

Table D2

1998
Estimated County Stationary Point Source Emissions (Tons/Year)

County	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Morgan	2167.7	27619.3	5715.9	913.5	282.9
Moultrie	202.7	68.6	134.8	309.2	32.4
Ogle	400.1	37.3	606.2	1539.8	243.5
Peoria	2778.3	32933.2	17585.8	2976.6	1186.5
Perry	56.2	9.6	16.1	134.9	3.0
Piatt	289.2	4.2	1982.0	830.5	271.6
Pike	234.2	2771.4	742.4	52.2	72.6
Pope	0.0	0.0	0.0	2.1	0.0
Pulaski	161.0	416.6	53.5	0.5	0.2
Putnam	1022.8	34567.2	6742.5	199.5	402.6
Randolph	3615.9	233845.5	63398.4	1450.6	2161.1
Richland	52.8	0.6	24.4	205.3	12.1
Rock Island	537.2	4111.0	1987.8	4082.1	781.1
St. Clair	1472.8	6076.6	1728.7	3037.1	307.3
Saline	272.2	9.6	6.2	18.5	20.6
Sangamon	840.6	31173.7	17652.9	716.5	871.8
Schuyler	132.1	0.0	25.1	12.3	0.4
Scott	138.9	20.4	23.9	26.4	9.2
Shelby	227.0	0.5	9.8	68.5	2.6
Stark	63.7	0.0	0.1	3.1	0.2
Stephenson	222.8	1.3	200.1	1154.5	128.1
Tazewell	2817.1	47543.0	76407.6	1312.1	1815.0
Union	102.7	882.9	79.6	24.4	58.7
Vermilion	1217.4	21778.6	4847.6	3944.4	694.3
Wabash	296.9	198.3	106.3	29.6	28.5
Warren	263.9	60.8	98.4	48.1	40.6
Washington	236.6	0.0	23.7	280.6	14.6
Wayne	45.6	89.9	503.6	186.4	77.8
White	260.6	1.7	5.4	70.5	0.9
Whiteside	683.3	159.4	406.0	203.1	1249.7
Will	5951.1	76030.0	47865.2	6827.9	5895.5
Williamson	503.9	13205.3	8962.1	251.2	253.0
Winnebago	953.7	105.7	1037.3	2172.1	388.8
Woodford	281.5	10.0	18.7	149.2	7.3

Table D3

Annual Estimated Emissions Trends (Tons)

Year	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
1981	276529	1577992	826427	270814	240421
1982	184716	1404040	693054	233951	163704
1983	185931	1363292	759453	207405	144622
1984	204490	1435066	746367	197418	110922
1985	174102	1406300	715556	191070	107876
1986	164246	1400761	676181	180148	109777
1987	166292	1379407	644511	176406	98213
1988	162124	1393628	653521	165792	127758
1989	212778	1254474	610214	193499	132214
1990	266888	1272445	623466	170378	134744
1991	220903	1239690	619161	154008	148667
1992	163529	1228949	610214	156867	129054
1993	142123	1170549	556460	152288	130097
1994	133275	1158555	555893	140492	127848
1995	119726	1273786	505966	141381	127661
1996	105842	1183278	495267	139445	130040
1997	100038	1197404	510729	136541	117046
1998	99619	1196461	509676	134924	108117

Table D4

Annual Source Reported Emissions Trends (Tons)

Year	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
1992	95902	1045101	381921	143754	112388
1993	90320	1001123	418185	108805	113758
1994	88723	967213	404407	108759	116147
1995	66831	812283	367722	102954	160313
1996	63519	914233	407594	86933	84183
1997	56873	1154195	404154	75720	78406

APPENDIX E

THE BUREAU OF AIR/ DIVISION OF AIR POLLUTION CONTROL

Organization and Programs

The Bureau of Air consists of two divisions: the Division of Air Pollution Control and the Division of Vehicle Inspection and Maintenance. The focus of this section is on the programs of the Division of Air Pollution Control which is responsible for developing, implementing and enforcing regulations to assure that the air we breathe is clean and healthful. This mission is accomplished by finding, correcting and controlling air pollution hazards. The Division of Air Pollution Control also works to prevent air quality problems from occurring in areas which have clean air.

The basic strategy to improve air quality is to control the pollutants which are emitted by industry and motor vehicles. This strategy requires the IEPA to monitor the air, identify emission sources, impose limitations on the amount of emissions which can be released to the air and take the necessary enforcement action against violators.

The Division of Air Pollution Control is divided into five sections: Air Monitoring, Air Quality Planning, Compliance and Systems Management, Permits, and Field Operations. Each of these sections is briefly described below.

Air Monitoring

The Division of Air Pollution Control operates a statewide air quality monitoring network which includes more than 200 monitors. The Air Monitoring Section is responsible for the maintenance of this network, which operates year round monitoring the quality of the air that we breathe.

The IEPA monitors the air for a variety of pollutants including particulate matter, sulfur dioxide, ozone, carbon monoxide, lead and nitrogen dioxide. Specialized sampling projects for other hazardous pollutants are also conducted by the Air Monitoring Section.

Illinois residents can be proud of the IEPA's record of efficiency in data collection. The system ranks as one of the best in the nation with over 90 percent efficiency in the collection of high quality data. This high efficiency rate guarantees that the network is operating with a minimum amount of "down-time" thereby providing the IEPA with a complete and accurate description of air quality in Illinois.

The Air Monitoring Section is also responsible for validating and summarizing the data in this report. It provides notification of air quality exceedances and issues any episodes as required. Special air quality studies are performed which identify pollution trends and evaluate special air quality problems. The Section additionally oversees the source emission monitoring program: continuous emission monitors (cems), stack testing, and excess emissions reporting.

Air Quality Planning

The Air Quality Planning Section is responsible for developing Agency programs which are designed to achieve and maintain National Ambient Air Quality Standards and to prevent deterioration of air quality. This is accomplished by:

- Assessment of strategies and technologies for the elimination or reduction of air pollutant emissions.

- Conducting and reviewing detailed air quality studies using computerized air quality models.
- Proposing and supporting regulatory revisions where they are necessary to attain or maintain healthful air quality.
- Coordination with local planning agencies to ensure compatibility of air quality programs between state and local jurisdictions.

Compliance and Systems Management

The Compliance and Systems Management Section provides Management oversight for all aspects of the compliance program, develops and implements the information management and office automation aspects of the Bureau of Air, and assists in the compilation of the stationary source inventory.

The work of the section is currently focused on the following areas:

- Formulating and interpreting policy regarding the Bureau's Air Pollution Compliance and Enforcement Program.
- Coordinating the Air Pollution Compliance and Enforcement Program with USEPA's Compliance and Enforcement Program.
- Coordinating, through the Bureau's Compliance Decision Group, the work of the Bureau's staff in order to provide an effective and efficient compliance program.
- Develop a comprehensive plan for integrated information management systems for the Bureau.
- Design, develop, and implement information management solutions to effectively and efficiently utilize the Bureau's data resources.
- Administer the Bureau's hardware and software resources.
- Establish on-going performance measurement criteria to evaluate and approve the quality of the Bureau's Stationary Source Inventory.
- Evaluate the Annual Emission Reports provided by Illinois industry.
- Provide training and technical support to personnel regarding the compilation and maintenance of the stationary source inventory system and the effective use of the Bureau's computer resources.

Permits

Permits are required in Illinois prior to construction and operation of emission sources and control equipment. The permit program provides a consistent and systemic way of ensuring that air emission sources are built and operated in compliance with air pollution control regulations.

In a permit application the IEPA requires: a description of the emission source, a list of types and amounts of the contaminants which will be emitted, and a description of the emission control equipment to be utilized. This information is used to determine if the emissions comply with standards adopted by the Illinois Pollution Control Board. Operating permits are granted for periods up to five years, after which they must be renewed. Operating permits for smaller facilities may run indefinitely. When a facility constructs a new emission source or makes modifications to existing emission sources, it must apply for a new construction permit.

Large sources also need a Federal Operating Permit which is administered by the IEPA. Under the Clean Air Act Permit Program (CAAPP) these large sources will be required to consolidate all of their existing State operating permits into one permit which will be available for public review and is subject to Federal oversight.

Field Operations

The Field Operations Section investigates sources of air pollution and works with industry to control air pollution. The major functions of the Field Operations Section include locating and identifying sources of air pollution, determining the amount of pollution emitted and verifying the information which industry submits when applying for a permit. Field Operations also initiates much of the IEPA's enforcement activities when violations are discovered. Approximately 3,000 investigations and inspections are conducted each year.

A directory of the Division of Air Pollution Control follows.

Table E1

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