ILLINOIS ANNUAL AIR QUALITY REPORT 2004

Illinois Environmental Protection Agency
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Acknowledgements

This document is produced by the Illinois Environmental Protection Agency; Douglas P. Scott, Director.

Illinois EPA Bureau of Air personnel contributed their time and expertise to the development of this publication.

A MESSAGE FROM THE DIRECTOR

In terms of air quality in Illinois, the year 2004 was exceptional. Air quality in Illinois was either good or moderate more than 98 percent of the time throughout Illinois. The year marked the best air quality the State has experienced since the Agency began monitoring for air pollutants. Additionally, 2004 was the first year in which none of the air quality monitors in Illinois recorded levels above the federal eight-hour standard for ozone.

This document, the 34th Annual Air Quality Report, consists of data collected from a large network of air monitoring equipment throughout the State of Illinois. The Illinois EPA operates and maintains more than 80 air monitoring sites featuring over 200 instruments, which measure air pollutants and toxic compounds.

The cover of this report shows trends of both ground-level ozone and fine particulate matter. The eight-hour standard for ozone (85 parts per billion) and fine particulate matter standard (15 micrograms per cubic meter, annually) are currently the most stringent federal standards for those pollutants. While annual trends show the statewide levels well below the federal standards, there are still some areas in Illinois that do not meet these standards. The Illinois EPA reaffirms its commitment to improve air quality, in those areas that do not meet current standards, throughout the State and in the region.

The 2004 Annual Air Quality Report has been developed to provide information to businesses, organizations and individual citizens. The Illinois EPA takes pride in the achievements the State has made in regards to air quality. We continue our commitment to work further with individuals, businesses and industry to continue environmental gains in Illinois. Please contact the Illinois EPA with comments and/or questions regarding this report or air pollution control programs.

Douglas P. Scott
Director

Illinois Annual Air Quality Report 2004

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EXECUTIVE SUMMARY

This report presents a summary of air quality data collected throughout the State of Illinois during the calendar year -

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 re-form nitrogen dioxide, completing the cycle. A build-up 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; however, 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

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 healthy exercising persons, at short-term ozone concentrations between 0.15 and 0.25 ppm.

Ozone exposure increases the sensitivity of the lung to bronchoconstrictive agents such as histamine, acetylcholine and allergens, as well as increasing the 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

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 particulate 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 pollution levels can generally be achieved through the use of low sulfur content fuels or the use of chemical sulfur removal systems.

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 large distances and come back to earth as a major constituent of acid precipitation. Many of the resultant health problems attributed to SO_2 may be a result of the oxidation of SO_2 to other compounds.

The effects of SO_2 on health 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 (CO) is motor vehicles. The USEPA 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 (O_3) and a group of chemicals called peroxyacetylnitrates (PAN) 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 over 90%. Currently stationary sources, such as lead smelters, battery manufacturers, iron and steel producers and others can contribute significant amounts of lead to their immediate vicinity.

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

Pollutant	Averaging Time	Standard	
		Primary	**Secondary**
Standard units are micrograms per cubic meter (ug/m^3) and parts per million (ppm)			
Particulate Matter 10 micrometers (PM_{10})	Annual Arithmetic Mean	50 ug/m^3	Same as Primary
	24-hour	150 ug/m^3	Same as Primary
Particulate Matter 2.5 micrometers ($PM_{2.5}$)	Annual Arithmetic Mean	15.0 ug/m^3	Same as Primary
	24-hour	65 ug/m^3	Same as Primary
Sulfur dioxide	Annual Arithmetic Mean	0.03 ppm	None
	24-hour	0.14 ppm	None
	3-hour	None	0.5 ppm
Carbon Monoxide	1-hour	35 ppm	Same as Primary
	8-hour	9 ppm	Same as Primary
Ozone	1-hour/day	0.12 ppm	Same as Primary
	8-hour/day	0.08 ppm	Same as Primary
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm	Same as Primary
Lead	Quarterly Arithmetic Mean	1.5 ug/m^3	Same as Primary

The $PM_{2.5}$ standards are referenced to local conditions of temperature and pressure rather than standard conditions (760 mm and 25 deg C).
Note: The State of Illinois has not adopted the $PM_{2.5}$ or 8-hour ozone standards at this time.

Table 2: Illinois Air Pollution Episode Levels

Pollutant	Advisory	Yellow alert	Red Alert	Emergency
Particulate Matter	2-hour	24-hour	24-hour	24-hour
micrograms per cubic meter	420	350	420	500
Sulfur Dioxide	2-hour	4-hour	4-hour	4-hour
parts per million	0.30	0.30	0.35	0.40
Carbon Monoxide	2-hour	8-hour	8-hour	8-hour
parts per million	30	15	30	40
Nitrogen Dioxide	2-hour	1-hour	1-hour	1-hour
parts per million	0.40	0.60	1.20	1.60
		or	or	or
		24-hour	24-hour	24-hour
		0.15	0.30	0.40
Ozone	1-hour	1-hour	1-hour	1-hour
parts per million	0.12	0.20	0.30	0.50

SECTION 2: STATEWIDE SUMMARY OF AIR QUALITY FOR 2004

OZONE

Figure 2 shows for each year the statewide average of the 4th highest 8-hour ozone value for the same period 1995-2004. This trend is generally downward since 1995 as well.

Overall, Illinois's weather was much below normal in terms of meteorological conditions favorable to ozone formation and transport Statewide.

September was the most conducive month in terms of meteorological conditions Statewide followed by May. In terms of conducive days, the Chicago area had 50 percent below the average number and the Metro-East area had 56 percent below average.

PARTICULATE MATTER

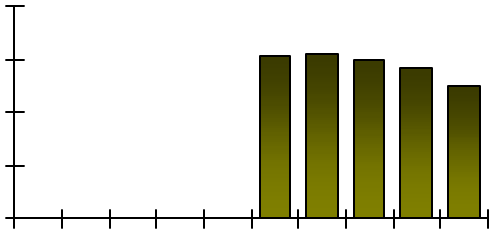
Monitoring was conducted at 37 sites for $PM_{2.5}$. Valid annual averages were obtained for 36 of the 37 sites. A total of 6 sites recorded averages above 15.0 ug/m^3, the level of the annual standard compared with 9 sites in 2003 and 14 sites in 2002. The Statewide average of annual averages was 12.5 ug/m^3 in 2004 compared with 14.1 ug/m^3 in 2003 and 14.9 ug/m^3 in 2002. **Figure 3** shows the trend of the Statewide annual averages for $PM_{2.5}$ for the period 2000-2004. There were no exceedances of the 24-hour standard of 65 ug/m^3 in 2004. The Statewide peak of 54.3 ug/m^3 was recorded in Schiller Park. The Statewide average of the 98th percentile of 24-hour averages was 30.9 ug/m^3 in 2004 compared with 34.1 ug/m^3 in 2003 and 33.9 ug/m^3 in 2002.

In 2001 there were 16 sites monitoring PM_{10}. The Statewide average in 2004 was 26 ug/m^3 compared with 27 ug/m^3 in 2003 and 27 ug/m^3 in 2002.

For PM_{10} the Statewide average of the maximum 24-hour averages in 2004 was 70 ug/m^3 compared with 75 ug/m^3 in 2003 and 78 ug/m^3 in 2002. **Figure 4** depicts this trend for the period 1995-2004.

No sites exceeded the primary annual standard of 50 ug/m^3. The highest annual average was 38 ug/m^3 in Granite City - 2040 Washington. The lowest annual was 19 ug/m^3 in Carbondale. There were no exceedances of the 24-hour primary standard of 150 ug/m^3. The highest 24-hour average was recorded in Lyons township with a value of 120 ug/m^3 compared with a high 24-hour value of 138 ug/m^3 at Granite City - 2040 Washington in 2001.

Figure 3
Particulate Matter (PM2.5)



and manganese. The highest 24

SECTION 3: AIR QUALITY INDEX

The Air Quality Index (AQI) is the national standard method for reporting air pollution levels to the general public in 2004. An index such as the AQI 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 AQI uses a single number and a short descriptor to define the air quality in an easy-to-remember and easy-to-understand way, taking all the pollutants into account.

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

- Ozone (O_3)
- Sulfur dioxide (SO_2)
- Carbon monoxide (CO)
- Particulate matter (PM_{10})
- Particulate matter ($PM_{2.5}$)
- Nitrogen dioxide (NO_2)

In each case (except $PM_{2.5}$ which uses a lower value), the short-term primary NAAQS corresponds to a AQI of 100 and a descriptor of Unhealthy for Sensitive Groups, the Significant Harm level corresponds to a AQI of 500 and a descriptor of Hazardous, and the episode criteria correspond to intermediate hundreds. NO_2 does not have short-term NAAQSs; AQI begins at 201 for it. For the AQI the health effects and cautionary statements are pollutant-specific. **Table 3** lists those for 8-hour ozone as an example.

Unhealthy for Sensitive Groups occurs on occasion for 8-hour ozone and $PM_{2.5}$. Unhealthy 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 AQI is computed as follows: data from pollution monitors in an area are collected, and the AQI 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 estimate of the highest 8-hour average for 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
- $PM_{2.5}$ estimate of the 24-hour average for that calendar day
- NO_2 the highest 1-hour average (if above 600 ppb)

Continuous monitors are utilized for all the pollutants including PM_{10} and $PM_{2.5}$.

Table 3: AQI Descriptor Categories and Health Effects

AQI Range	Descriptor Category
0-50	Good (G)
51-100	Moderate (M)
101-150	Unhealthy for Sensitive Groups (USG)
151-200	Unhealthy (UH)

Moderate (M)

Once all the subindices for the various pollutants have been computed, the highest is chosen by inspection. That is the AQI for the area, and the pollutant giving rise to it is the "critical pollutant". Thus if, for Anytown, Illinois, we obtained the following subindices:

O_3 = 45
SO_2 = 23
CO = 19
PM_{10} = 41
$PM_{2.5}$ = 61

Anytown's AQI for that day would be 61, which is in the Moderate category, and the Critical Pollutant would be particulates ($PM_{2.5}$). If data for one of the pollutants used in computing AQI is missing, the AQI 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.

The Illinois EPA issues the AQI for 10 areas, or Sectors, in Illinois (**Table 4**). These correspond to metropolitan areas with populations greater than 100,000.

Illinois AQI's are computed from data up to and including the 3 PM local time readings (4 PM during the May – September portion of the Ozone Season) every weekday. A bulletin giving the AQI numbers, descriptors, critical pollutants, and a forecast of the category for the next day's AQI for each of the sectors is issued over the Illinois Weatherwire, a service of the National Weather Service, about 3:30 PM each work day (4:30 PM during the summer). Almost all TV stations and many radio stations and newspapers receive the Illinois Weatherwire, and are therefore able to inform the public about the AQI either immediately or on the evening news. Also the AQI is available on IEPA's web site (URL http://www.epa.state.il.us/air/aqi/index.html) In the Chicago and Cook County area, AQI's are available on phone recordings maintained by the Cook County Department of Environmental Control and the Chicago Department of the Environment.

If the AQI subindex for any pollutant in any sector should reach or exceed the Unhealthy (or any higher) category late in the afternoon or on weekends when the AQI is not published, the IEPA puts out a special bulletin on the Illinois Weatherwire.

2004 Illinois AQI Summary

In order to present a more representative AQI, 24-hour calendar day $PM_{2.5}$ and PM_{10} values from the total network were used to determine the percentages in **Figure 9** even though some of these values were not available for issuing the daily AQI. Air quality was still in the "Good" category most often in 2004. Most Sectors had a higher frequency of "Good" than "Moderate" and "Unhealthy for Sensitive Groups". The exceptions were the Chicago sector, the South and West Suburbs sector and the Metro-East sector. The Quad Cities, Champaign, Normal, Decatur and Springfield sectors had 75 percent or more of the days in the "Good" category. Within AQI sectors there were 19 occurrences of Unhealthy for Sensitive Groups air quality in in 2004. The sector breakdown for Unhealthy for Sensitive Groups was, 6 in Chicago, 5 in the North & West Suburbs, 4 in South & West Suburbs, 1 in Will County, 1 in Rockford, 1 in Metro-East, and 1 in Peoria. Outside of AQI sectors there were no additional occurrences of Unhealthy for Sensitive Groups. All of the Unhealthy for Sensitive Groups occurrences were due to PM2.5. **Figure 9** presents the AQI statistics for each sector. The pie chart shows the percent of time each sector was in a particular category.

In 2004 there were no ozone advisories issued in the State. An Advisory is declared when ozone levels have reached the level of the 1-hour standard (0.12 ppm) on a particular day and meteorological conditions are such that these levels are expected again the next day.

Table 4: AQI Sectors in Illinois

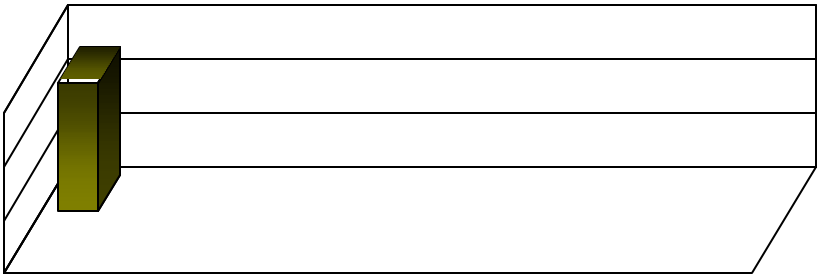
Chicago Metropolitan Area:	
Lake County Sector	Lake County only
North and West Suburbs Sector	Parts of Cook, Du Page, and Mc Henry Counties north of I-290 (the Eisenhower Expressway) and outside of Chicago city limits.

Figure 9: 2004 Air Quality Summaries by Sector

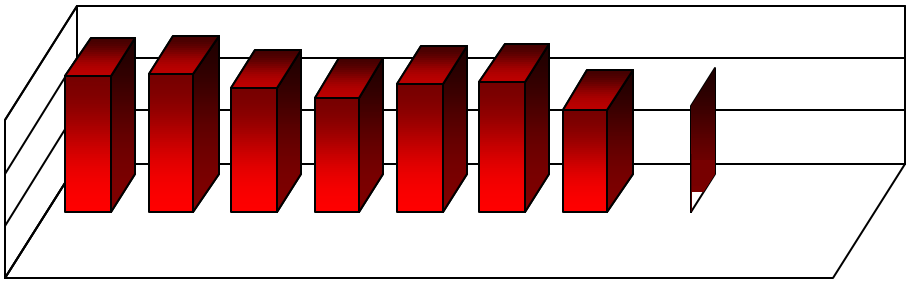
SECTION 4:

VOLATILE ORGANIC MATERIAL

PARTICULATE MATTER



CARBON MONOXIDE



SULFUR DIOXIDE

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 local agencies within Illinois and the environmental agencies of adjacent states can be found in **Table A1**. 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. 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 A2**. This is the official noncontinuous sampling schedule used by the Illinois EPA during 2004.

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 (**Table A4**). All of the industrial sites are considered to be SPMS. **Table A3** 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

DIRECTORY OF REGIONAL AIR POLLUTION AGENCIES

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Environment
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312/744-7606
Fax 312/744-6451

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Environmental Control
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Fax 312/603-9828

Indiana Dept. of Environmental Management
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517/373-7023
Fax 517/373-1265

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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
2004 - 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
29						

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	

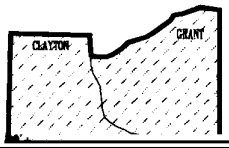
15 Every 6 Day Sampling Schedule 18 Every 3 Day Sampling Schedule

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.

AIR QUALITY CONTROL REGIONS



Statewide Map of Air Monitoring Locations

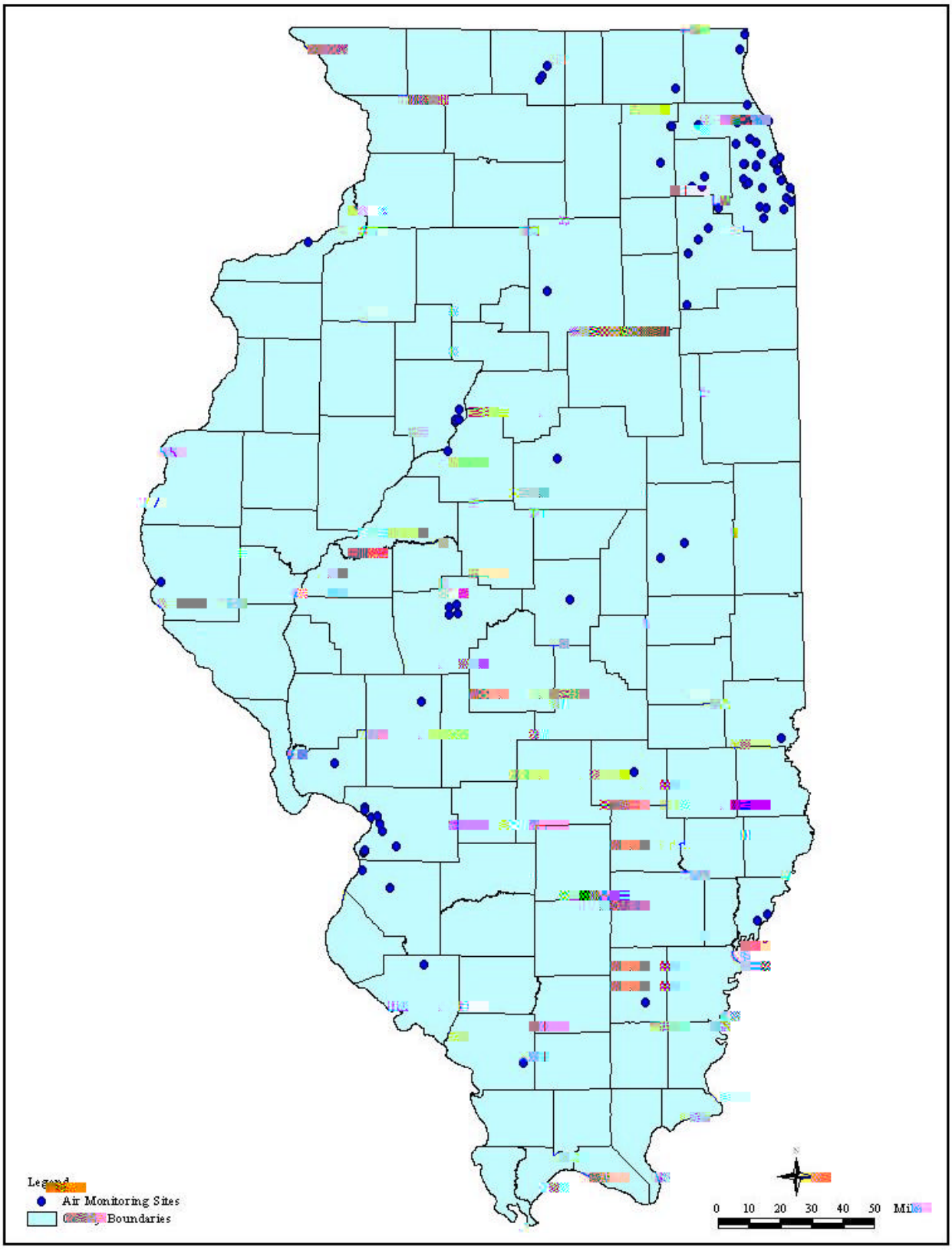


Table A4

2004
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)				
PEORIA COUNTY				
Peoria (1430024)	Fire Station #8 MacArthur & Hurlburt	Ill. EPA	N. 4507.113 E. 279.709	NAMS - SO_2, O_3 SPMS - WS/WD
Peoria (1430036)	Commercial Building 1005 N. University	Ill. EPA	N. 4508.534 E. 279.194	SLAMS - CO
Peoria (1430037)	City Office Building 613 N.E. Jefferson	Ill. EPA	N. 4508.197	NAMS - PM_{10}

(1430037)3 Tw

Table A4

2004
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Chicago (0310060)	Carver H.S. 13100 S. Doty	Cook County DEC	N. 4611.594 E. 450.911	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 (0310063)	CTA Building 320 S. Franklin	Ill. EPA	N. 4636.096 E. 447.365	NAMS - CO, NO/NO_2, SO2
Chicago (0310076)	Com Ed Maintenance Bldg. 7801 Lawndale	Cook County DEC	N. 4622.217 E. 440.658	SLAMS - $PM_{2.5}$/SPEC, O_3^n, NO/NO_2, SO_2^n SPMS – WS/WD,$PM_{2.5}$/SPEC
Chicago (DISC) (0310014)	Farr Dormitory 3300 S. Michigan Ave.	Cook County DEC	N. 4631.367 E. 448.202	SLAMS - $PM_{2.5}$
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 (0310052)	Mayfair Pump Sta. 4850 Wilson Ave.	Cook County DEC	N. 4645.961 E. 437.866	NAMS - Pb SLAMS - $PM_{2.5}$ SPMS - TSP
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 - $PM_{2.5}$
Chicago (0310032)	South Water Filtration Plant 3300 E. Cheltenham Pl.	Cook County DEC	N. 4622.596 E. 454.663	SLAMS - O_3
Chicago (0310057)	Springfield Pump Sta. 1745 N. Springfield. Ave.	Cook County DEC	N. 4640.189 E. 440.009	SLAMS - $PM_{2.5}$/SPEC SPMS - $PM_{2.5}$/SPEC
Chicago (0311003)	Taft H.S. 6545 W. Hurlbut St.	Cook County DEC	N. 4648.125 E. 434.392	SLAMS - O_3
Chicago (0310064)	University of Chicago 5720 S. Ellis Ave.	Cook County DEC	N. 4626.508 E. 450.010	SLAMS - O_3 SPMS - SOL
Chicago (0310022)	Washington H.S. 3535 E. 114th St.	Cook County DEC	N. 4615.038 E. 455.155	SLAMS - Pb, $PM_{2.5}$, PM_{10} SPMS - TSP, $PM_{2.5}$
Cicero (0316005)	Liberty School 13^{th} St. & 50^{th} Ave.	Cook County DEC	N. 4634.780 E. 437.846	SLAMS - $PM_{2.5}$

Table A4

2004
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Cicero	Trailer	Cook County DEC	N. 4633.763	NAMS - SO_2, NO/NO_2
(0314002)	1820 S. 51st Ave.		E. 437.541	SLAMS - O_3, CO
Des Plaines	Regional Office Building	Ill EPA	N. 4656.615	SLAMS - O_3, $PM_{2.5}$
(0314007)	9511 W. Harrison St.		E. 428.577	SPMS - $PM_{2.5}$

4633.763 428.577

Table A4

2004
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
DUPAGE COUNTY				
Lisle	Morton Arboretum	Ill. EPA	N. 4629.361	SLAMS - O_3
(0436001)	Route 53		E. 410.891	SPMS - WS/WD

NapervC7 ref BT 50.25 57 O_3 Tc.0435 Tw ( ) Tj 9 0 TD -0.0816 T86 0 Tc -0.0435 Tw ( ) Tj 36,70.5 0 TD8tm0 ( ) Tj 18 0 TD -0.575 0 TD -0.1693 Tc

Table A4

2004
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)				
MADISON COUNTY				
Alton (1190008)	Clara Barton Elem. Sch. 409 Main St.	Ill. EPA	N. 4308.245 E. 747.375	SLAMS - O_3
Alton (1192009)	SIU Dental Clinic 1700 Annex. St.	Ill. EPA	N. 4309.690 E. 747.752	SLAMS - $PM_{2.5}$/SPEC
Edwardsville (1192008)	RAPS Trailer Poag Road	Ill. EPA	N. 4297.793 4 2 9 7 . 7 9 3	SLAMS - O_3^d

Table A4

2004
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
ST. CLAIR COUNTY				
East St. Louis	RAPS Trailer	Ill. EPA	N. 4277.363	NAMS --

Table A4

2004
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
WABASH COUNTY				
Mount Carmel (1850001)	Division St.	Public Service of Indiana	N. 4249.965 E. 432.444	SPMS - SO_2
Rural Wabash County (1851001)	South of SR-1	Public Service of Indiana	N. 4246.929 E. 427.104	SPMS - SO_2
75 WEST CENTRAL ILLINOIS INTRASTATE				
ADAMS COUNTY				
Quincy (0010006)	St. Boniface Elem. Sch. 732 Hampshire	Ill. EPA	N. 4421.320 E. 636.351	SLAMS - $PM_{2.5}$, SO_2, O_3 SPMS - WS/WD
JERSEY COUNTY				
Jerseyville (0831001)	Illini Jr. H.S. Liberty St. & County Rd.	Ill. EPA	N. 4332.242 E. 731.369	SLAMS - O_3 ,$PM_{2.5}{}^n$
MACON COUNTY				
Decatur (1150013)	IEPA Trailer 2200 N. 22nd	Ill. EPA	N. 4414.538 E. 335.308	NAMS - SO_2 SLAMS - O_3, $PM_{2.5}$/SPEC SPMS - WS/WD, $PM_{2.5}$
MACOUPIN COUNTY				
Nilwood (1170002)	IEPA Trailer Heaton & Dubois	Ill. EPA	N. 4364.287 E. 258.053	SLAMS - O_3, SO_2, Pb, PM_{10} SPMS - TSP, WS/WD, SOL CO_2, UV
SANGAMON COUNTY				
Springfield (1670006)	Sewage Treatment Plant 3300 Mechanicsburg Rd.	Ill. EPA	N. 4408.650 E. 278.194	NAMS - SO_2 SPMS - WS/WD[d]
Springfield (1670008)	Federal Building 6th St. & Monroe	Ill. EPA	N. 4408.623 E. 273.327	SLAMS - CO
Springfield (1670010)	Public Health Warehouse 2875 N. Dirksen Pkwy.	Ill. EPA	N. 4413.490 E. 277.134	SLAMS - O_3
Springfield (1670012)	Agriculture Building State Fair Grounds	Ill. EPA	N. 4412.240 E. 273.720	SLAMS - $PM_{2.5}$

Table A4

2004
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT

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)
SPEC - $PM_{2.5}$ Speciation
SO_2 - Sulfur Dioxide
NO - Nitr9Tc (10) Tj 517.5 s56 T7172 0 TD 4Tj 517.5 s56 T71727.25 0.75 02 re f 5Wd.25 57(

APPENDIX B
AIR QUALITY DATA SUMMARY TABLES

B.1 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:

.

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 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. Particulate Matter (PM_{10}) has a 24-hour standard which cannot average more than 1 over a three year period (total of 3 in three years). Particulate Matter ($PM_{2.5}$) has a 24-hour standard which is a 3-year average of each year's 98^{th} percentile values. 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 of pollution both in terms of acute and chronic health effects.

The following data tables detail and summarize air quality in Illinois in 2004. 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

2004
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)

NONE

Table B2

2004
OZONE

Table B2

2004
OZONE

		NUMBER OF DAYS GREATER THAN		HIGHEST SAMPLES (parts per million)							
				1-HOUR				8-HOUR			
STATION	ADDRESS	0.12 PPM	0.08 PPM	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)											
ROCK ISLAND COUNTY		5	6	15.75	0.75	8.25					
								5	6	15.75	0.75

Table B3

2004

PARTICULATE MATTER FINE ($PM_{2.5}$)

(micrograms per cubic meter)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	>65 ug/m^3	>40 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	109	0	1	42.5	32.3	31.4	28.9	12.8
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Bondville	Twp. Rd. 500 E.	56	0	0	27.1	23.6	21.8	21.5	10.6
Champaign	606 E. Grove	58	0	0	29.7	24.3	18.9	18.3	10.4
Mc LEAN COUNTY									
Normal	Main & Gregory	57	0	0	33.7	26.0	24.8	23.0	11.5
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Blue Island	12700 Sacramento	118	0	1	40.5	39.0	38.5	32.8	14.1
Chicago-Com Ed	7801 Lawndale	118	0	2	49.0	41.9	39.7	33.3	14.1
Chicago-Farr	3300 S. Michigan Ave.	116	0	2	52.2	40.3	33.4	31.9	13.2
Chicago-Mayfair	4850 Wilson Ave.	348	0	5	49.6	46.5	45.0	43.4	15.3
Chicago-SE Police	103rd & Luella	122	0	2	46.3	40.5	34.2	30.3	13.8
Chicado-Springfield	1745 N. Springfield Ave.	109	0	1	43.6	36.2	33.1	32.0	13.7
Chicago-Washington HS	3535 E. 114th St.	56	0	1	42.6	32.5	32.3	29.3	14.2
Cicero	13th St. & 50th Ave.	118	0	3	51.9	42.8	42.5	39.3	15.2
Des Plaines	9511 W. Harrison	122	0	1	42.5	37.6	35.0	31.2	12.4
Lyons Township	50th St. & Glencoe Ave.	116	0	3	49.1	48.5	42.6	36.6	16.7
Northbrook	750 Dundee Road	119	0	1	41.0	36.9	26.1	25.0	11.2
Schiller Park	4743 Mannheim Rd.	114	0	3	54.3	40.9	40.7	37.6	16.0
Summit	60th St. & 74th Ave.	118	0	3	48.7	42.8	42.4	35.8	14.3
Du PAGE COUNTY									
Naperville	400 S. Eagle St.	56	0	0	39.9	31.9	29.4	26.6	12.7
KANE COUNTY									
Elgin	258 Lovell St.	61	0	0	38.9	25.8	25.3	24.5	11.5
LAKE COUNTY									
Zion	Camp Logan	61	0	0	32.9	26.3	23.5	22.4	10.3

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

Primary 24-Hour Standard 65 ug/m^3; Primary Annual Standard 15.0 ug/m^3

Table B3

2004

PARTICULATE MATTER FINE ($PM_{2.5}$)

(micrograms per cubic meter)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	>65 ug/m^3	>40 ug/m^3	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
Mc HENRY COUNTY									
Cary	1st St. & Three Oaks Rd.	118	0	0	36.2	29.1	27.5	25.0	11.3
WILL COUNTY									
Braidwood	36400 S. Essex Rd.	60	0	0	26.1	23.6	21.4	21.2	10.3
Joliet	Midland & Campbell	49	0	0	35.4	29.1	25.0	24.8	+
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
Rock Island	32 Rodman Ave.	59	0	0	35.5	24.9	23.6	23.3	10.4
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Alton	1700 Annex St.	112	0	0	32.2	30.1	28.9	28.0	11.5
Granite City	23rd & Madison	116	0	1	45.0	35.8	35.4	32.3	15.4
Granite City	2040 Washington	113	0	1	47.9	38.6	35.3	33.8	16.2
Wood River	54 N. Walcott	113	0	0	38.2	36.2	30.0	29.5	13.2
RANDOLPH COUNTY									
Houston	Twp Rds. 150 & 45	61	0	0	29.0	23.0	20.5	19.9	10.9
ST. CLAIR COUNTY									
East St. Louis	13th & Tudor	59	0	0	34.8	30.2	26.2	24.9	14.7
Swansea	1500 Caseyville Ave.	116	0	1	42.2	34.8	26.6	26.3	13.2
71 NORTH CENTRAL ILLINOIS INTRASTATE									
LASALLE COUNTY									
Oglesby	308 Portland Ave.	118	0	0	36.9	26.9	24.5	24.3	11.4
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	204 S. 1st St.	58	0	1	47.9	27.2	23.1	22.8	11.7

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

Primary 24-Hour Standard 65 ug/m^3; Primary Annual Standard 15.0 ug/m^3

Table B3

2004

PARTICULATE MATTER FINE ($PM_{2.5}$)

(micrograms per cubic meter)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	>65 ug/m^3	>40 ug/m^3	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	732 Hampshire	57	0	0	35.4	25.0	20.7	19.3	10.7
JERSEY COUNTY									
Jerseyville	Liberty St.	57	0	0	30.6	25.0	24.3	21.7	11.5
MACON COUNTY									
Decatur	2200 N. 22nd	58	0	0	28.7	26.3	21.5	18.9	11.9

Table B4

2004

SHORT-

Table B4

2004
SHORT-TERM TRENDS
PARTICULATE MATTER ($PM_{2.5}$)

STATION	ADDRESS	1999	2000	2001	2002	2003	2004
		ANNUAL ARITHMETIC MEANS (ug/m^3)					
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
Mc HENRY COUNTY							
Cary	1st St. & Three Oaks Rd.		-	14.8	13.7	12.3	12.2	11.3
WILL COUNTY							
Braidwood	36400 S. Essex Rd.	+					

Table B4

2004
SHORT-TERM TRENDS
PARTICULATE MATTER ($PM_{2.5}$)

STATION	ADDRESS	ANNUAL ARITHMETIC MEANS (ug/m^3) 1999	2000	2001	2002	2003	2004
75 WEST CENTRAL ILLINOIS INTRASTATE							
ADAMS COUNTY							
Quincy	732 Hampshire	-	13.1	12.3	13.7	13.4	10.7
JERSEY COUNTY							
Jerseyville	Libery St.	-	-	-	-	-	11.5
MACON COUNTY							
Decatur	2200 N. 22nd	+	15.0	14.3	14.1	13.6	11.9
SANGAMON COUNTY							
Springfield	State Fair Grounds	15.9	13.4	13.3	13.6	13.0	11.8

- Station not in operation during the year.
+ Did not meet minimum statistical selection criteria (See Appendix B.1).

Primary Annual Standard 15.0 ug/m^3

Table B5

2004

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	HIGHEST SAMPLES 2nd	HIGHEST SAMPLES 3rd	HIGHEST SAMPLES 4th	ANNUAL ARITHMETIC MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	6-day	58	0	54	42	38	37	22
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd St.	6-day	60	0	74	56	47	47	24
Blue Island	12700 Sacramento	6-day	57	0	60	58	51	50	26
Chicago - Carver	13100 S. Doty	6-day	60	0	87	61	60	60	30
Chicago - Washington HS	3535 E. 114th St.	1-day	347	0	93	75	72	67	23
Lyons Township	50th St. & Glencoe Ave.	1-day	352	0	88	84	84	83	33
Midlothian	15205 Crawford Ave.	6-day	58	0	56	52	36	36	21
Summit	60th St. & 74th Ave.	6-day	59	0	62	51	50	48	30
WILL COUNTY									
Joliet	Midland & Campbell Sts.	6-day	59	0	43	40	40	39	19
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	6-day	60	0	85	66	65	63	34
Granite City	2040 Washington	1-day	366	0	93	92	91	87	38
Wood River	54 N. Walcott	6-day	60	0	64	53	45	44	25
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	6-day	59	0	54	54	48	46	29
71 NORTH CENTRAL ILLINOIS INTRASTATE									
LASALLE COUNTY									
Oglesby	308 Portland Ave.	1-day	363	0	126	92	91	83	25
74 SOUTHEAST ILLINOIS INTRASTATE									
JACKSON COUNTY									
Carbondale	607 E. College	6-day	61	0	44	40	38	36	20
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & Dubois	6-day	59	0	32	32	30	28	17

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

Table B6

2004

SHORT-TERM TRENDS

PARTICULATE MATTER (PM_{10})

STATION	ADDRESS	ANNUAL ARITHMETIC MEANS (ug/m^3) 1999	2000	2001	2002	2003	2004
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	613 N.E. Jefferson	23	24	22	21	25	22
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							

Table B7

2004
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	8652	0	0	4.3	3.9	3.8	3.6	3.0	2.4
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)										
COOK COUNTY										
Chicago - CTA Building	320 S. Franklin	8675	0	0	4.5	3.9	3.7	3.2	2.4	1.8
Cicero	1830 S. 51st Ave.	8717	0	0	4.9	4.8	4.7	3.7	2.7	2.6
Maywood	1505 S. First Ave	8570	0	0	3.9	3.9	3.8	3.2	3.2	3.2
Schiller Park	4743 N. Mannheim	8673	0	0	2.5	2.3	2.3	2.0	1.8	1.7
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)										
St. CLAIR COUNTY										
East St. Louis	13th & Tudor	8717	0	0	5.0	4.4	4.1	2.8	2.5	2.2
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)										
WINNEBAGO COUNTY										
Rockford	425 E. State	8697	0	0	3.4	3.2	3.2	2.9	2.7	2.1
75 WEST CENTRAL ILLINOIS INTRASTATE										
SANGAMON COUNTY										
Springfield	6th & Monroe	8724	0	0	2.6	2.3	2.1	1.3	1.2	1.2

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

Table B9

2004
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	8681	0	0	0.084	0.081	0.029	0.026	0.004
TAZEWELL COUNTY									
Pekin	272 Derby	8705	0	0	0.234	0.223	0.087	0.073	0.005
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Bedford Park	7800 W. 65th St.	8712	0	0	0.181	0.179	0.073	0.051	0.007
Chicago - CTA	320 S. Franklin	8630	0	0	0.092	0.071	0.028	0.027	0.003
Chicago – Com Ed	780 Lawndale	8679	0	0	0.051	0.043	0.025	0.017	0.006
Chicago - SE Police	103rd & Luella	8712	0	0	0.050	0.036	0.018	0.014	0.003
Cicero	1830 S. 51st Ave.	8706	0	0	0.085	0.076	0.039	0.028	0.005
Lemont	729 Houston	8709	0	0	0.055	0.045	0.020	0.019	0.006
Northbrook	750 Dundee Rd.	8396	0	0	0.063	0.056	0.040	0.022	0.002
WILL COUNTY									
Joliet	Rte 6 & Young Rd.	8554	0	0	0.049	0.040	0.017	0.014	0.003
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
South Roxana	Michigan Ave.	8729	0	0	0.087	0.085	0.045	0.033	0.005
Wood River	54 N. Walcott	8692	0	0	0.045	0.043	0.018	0.013	0.004
Wood River	1710 Vaughn Rd.	8594	0	0	0.176	0.123	0.054	0.042	0.005
RANDOLPH COUNTY									
Houston	Twp Rd 150 & Twp Rd 45	8709	0	0	0.051	0.023	0.015	0.015	0.002
ST. CLAIR COUNTY									
East St. Louis	13th & Tudor	8589	0	0	0.135	0.101	0.042	0.031	0.003
71 NORTH CENTRAL ILLINOIS INTRASTATE									
LASALLE COUNTY									
Oglesby	508 Portland	8716	0	0	0.296	0.230	0.072	0.066	0.004
74 SOUTHEAST ILLINOIS INTRASTATE									
WABASH COUNTY									
Mount Carmel	Division St	7480	0	0	0.191	0.164	0.073	0.033	0.004
Rural Wabash County	South of SR-1	7974	0	0	0.266	0.177	0.052	0.036	0.003

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

Table B9

2004
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
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	732 Hampshire	8723	0	0	0.037	0.032	0.020	0.019	0.002
MACON COUNTY									
Decatur	2200 N. 22nd St.	8584	0	0	0.042	0.037	0.023	0.023	0.004
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	8592	0	0	0.030	0.019	0.018		

Table B10

2004
SHORT-TERM TRENDS
SULFUR DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1999	2000	2001	2002	2003	2004
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	Hurlburt & MacArthur	0.007	0.006	0.005	0.005	0.004	0.004
TAZEWELL COUNTY							
Pekin	272 Derby	0.005	0.005	0.006	0.005	0.005	0.005
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							

Table B10

2004
SHORT-TERM TRENDS
SULFUR DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1999	2000	2001	2002	2003	2004
75 WEST CENTRAL ILLINOIS INTRASTATE							
[redacted]							

Table B11

2004
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							
Chicago - CTA	320 S. Franklin	8486	0.101	0.092	0.054	0.054	0.029
Chicago - Com Ed	7801 Lawndale	8434	0.084	0.082	0.053	0.046	0.020
Chicago - Jardine [1]	1000 E. Ohio	3351	0.074	0.071	0.037	0.036	+
Cicero	1830 S. 51st Ave.	8655	0.081	0.080	0.049	0.047	0.024
Northbrook	750 Dundee Rd.	8056	0.069	0.069	0.037	0.034	0.016
Schiller Park	4743 N. Mannheim	8251	0.084	0.083	0.061	0.061	0.029
WILL COUNTY							
Braidwood [1]	36400 S. Essex Rd.	3320	0.055	0.028	0.015	0.014	+
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
ST. CLAIR COUNTY							
East St. Louis	13th & Tudor	8667	0.061	0.058	0.032	0.031	0.016

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

Table B12

2004
SHORT-TERM TRENDS
NITROGEN DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1999	2000	2001	2002	2003	2004
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Chicago - CTA	320 S. Franklin	0.032	0.032	0.032	0.032	0.031	0.029
Chicago - Com Ed	7801 Lawndale	-	-	-	0.022	0.022	0.020
Cicero	1820 S. 51st St.	0.027	0.027	0.028	0.023	0.027	0.024
Northbrook	750 Dundee Rd.	0.017	0.018	0.018	0.017	0.018	0.016

Table B13

2004
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	0.01	0.01	0.01	0.01
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Alsip	4500 W. 123rd St.	0	0.02	0.01	0.01	0.01	0.02
Chicago - Cermak	735 W. Harrison	0	0.03	0.06	0.06	0.04	0.05
Chicago - Mayfair	4850 Wilson Ave.	0	0.03	0.03	0.02	0.02	0.02
Chicago - Washington	3535 E. 114th St.	0	0.03	0.03	0.03	0.03	0.03
Maywood	1500 Maybrook Dr.	0	0.03	0.03	0.03	0.03	0.03
Northbrook	750 Dundee Rd.	0	0.01	0.01	0.01	0.01	0.01
Schiller Park	4243 N. Mannheim Rd.	0	0.01	0.01	0.01	0.01	0.01
Summit	60th St. & 74th Ave.	0	0.05	0.02	0.05	0.02	0.04
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
MADISON COUNTY							
Granite City	15th & Madison	0	0.15	0.04	0.04	0.03	0.06
Wood River	54 N. Walcott	0	0.01	0.01	0.02	0.02	0.01
ST. CLAIR COUNTY							
East St. Louis	13th St. & Tudor Ave.	0	0.02	0.05	0.03	0.04	0.03
75 WEST CENTRAL ILLINOIS INTRASTATE							
MACOUPIN COUNTY							
Nilwood	Heaton & DuBois	0	0.01	0.01	0.01	0.01	0.01

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

Primary Quarterly Standard 1.5 ug/m3

Table B14

2004
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
			ARSENIC				**BERYLLIUM**		
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	56	0.003	0.003	0.001	56	0.000	0.000	0.000
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	500 W. 123rd. St.	56	0.023	0.013	0.003	NA			
Chicago - Cermak	735 W. Harrison	57	0.012	0.011	0.003	NA			
Chicago - Mayfair	4850 Wilson Ave	60	0.015	0.011	0.003	NA			
Chicago - Washington	3535 E. 114th St.	59	0.005	0.005	0.002	NA			
Maywood	1500 Maybrook Dr.	57	0.017	0.012	0.003	NA			
Northbrook	750 Dundee Rd.	61	0.004	0.003	0.001	61	0.000	0.000	0.000
Schiller Park	4743 N. Mannheim Rd.	61	0.004	0.004	0.001	61	0.000	0.000	0.000
Summit	60th St. & 74th Ave.	57	0.008	0.008	0.002	NA			
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison								

Table B14

2004
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
			IRON				**MANGANESE**		

Table B14

2004
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					
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	56	0.000	0.000	0.000				
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	56	0.016	0.011	0.005				
Chicago - Cermak	735 W. Harrison	57	0.017	0.014	0.007				
Chicago - Mayfair	4850 Wilson Ave	60	0.015	0.013	0.007				
Chicago - Washington	3535 E. 114th St.	59	0.013	0.011	0.006				
Maywood	1500 Maybrook Dr.	57	0.016	0.015	0.010				
Northbrook	750 Dundee Rd.	61	0.000	0.000	0.000				
Schiller Park	4743 N. Mannheim Rd.	61	0.000	0.000	0.000				
Summit	60th St. & 74th Ave.	57	0.021	0.017	0.006				
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	58	0.014	0.013	0.000				
Wood River	54 N. Walcott	60	0.037	0.000	0.001				
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	63	0.000	0.000	0.000				
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	59	0.000	0.000	0.000				

Table B14

2004
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	56	12.7	11.8	4.4	56	18.2	18.0	7.4
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4.4	56			18.2				

Table B15

2003
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

	HIGHEST SAMPLES (ppbc)
	24

Table B15

2003
(JUNE - AUGUST)

VOLATI TD (trORGANIC COMPOUNDS

[redacted]

[redacted]

Table B15

2003
(JUNE - AUGUST)

VOLATILp0.75 0.75 re f 4 576 756 re

Table B16

2004

TOXIC COMPOUNDS[1]
(parts per billion volume)

STATION	ADDRESS	HIGHEST SAMPLES (ppbv) 24-HOUR 1ST	2ND	3RD	4TH	AVERAGE
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)						
COOK COUNTY						
Northbrook	750 Dundee Rd.					
COMPOUNDS						
1,3 Butadiene		0.1	0.1	0.1	0.1	0.0
Methylene Chloride		0.8	0.4	0.4	0.3	0.1
Chlorform		0.7	0.5	0.4	0.4	0.1
Carbon Tetrachloride		0.2	0.2	0.2	0.2	0.1
Tetrachloroethylene		0.2	0.2	0.1	0.0	0.0
Trichlorethylene		0.2	0.2	0.2	0.2	0.1
1,2 Dichloropropane		0.0	0.0	0.0	0.0	0.0
Vinyl Chloride		0.0	0.0	0.0	0.0	0.0
Benzene		1.1	0.8	0.8	0.7	0.3
Toluene		2.0	1.7	1.6	1.5	0.6
Formaldehyde		2.4	2.3	2.2	1.3	0.6
Acetaldehyde		0.6	0.5	0.5	0.5	0.3
Mercury[2]		9.3	8.8	6.7	5.6	1.7
Schiller Park	4743 Mannheim Rd.					
COMPOUNDS						
1,3 Butadiene		1.1	0.4	0.2	0.2	0.1
Methylene Chloride		1.9	0.8	0.5	0.5	0.2
Chlorform		0.1	0.1	0.1	0.1	0.0
Carbon Tetrachloride		0.2	0.2	0.2	0.2	0.1
Tetrachloroethylene		0.2	0.2	0.2	0.2	0.1
Trichlorethylene		0.9	0.5	0.4	0.3	0.1
1,2 Dichloropropane		0.0	0.0	0.0	0.0	0.0
Vinyl Chloride		0.0	0.0	0.0	0.0	0.0
Benzene		1.5	1.4	1.2	0.9	0.4
Toluene		3.8	2.8	2.5	2.3	0.8
Formaldehyde		3.2	3.0	2.9	2.8	1.4
Acetaldehyde		1.5	1.4	1.3	1.0	0.6

[1] - Toxic metals data (As,Be,Cd,Cr,Mn,Ni) summarized in Section B14 Filter analysis Data

[2] - Units of nanograms per cubic meter

Table B17

2004

$PM_{2.5}$ SPECIATION
(micrograms per cubic meter)

STATION	ADDRESS	HIGHEST SAMPLES (ug/m3) 24-HOUR 1ST	2ND	3RD	4TH	ANNUAL AVERAGE
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)						
COOK COUNTY						
Chicago - Com Ed	7801 Lawndale					
MAJOR CONSTITUENTS						
Inorganic Elements		1.6	1.5	1.0	1.0	0.4
Ammonium		6.5	6.0	4.9	4.3	1.5
Nitrate		14.2	10.7	9.4	8.0	2.2
Sulfate		16.6	9.4	7.2	6.1	2.7
Elemental Carbon		2.6	1.5	1.5	1.5	0.7
Organic Carbon		6.1	6.0	5.6	5.6	2.8
Chicago - Springfield	1745 N. Springfield Ave.					
MAJOR CONSTITUENTS						
Inorganic Elements		1.7	1.7	1.5	1.3	0.6
Ammonium		6.6	5.3	5.1	4.6	1.6
Nitrate		15.5	12.8	12.8	8.5	3.0
Sulfate		12.2	10.0	6.9	5.4	2.8
Elemental Carbon		2.6	1.8	1.8	1.5	0.7
Organic Carbon		7.5	7.4	6.8	6.7	4.1

NorthhiDook Tj 33975 0 TD 0 Tc -0.0435 Tw ( ) Tj 37575 0 TD -0.0186 Tc 0.8143 Tw (750 Dundee Rd) Tj 85775 0 TD 0 Tc -0.0435 Tw ( ) Tj 3T 40.5

Table B17

2004

$PM_{2.5}$ SPECIATION
(micrograms per cubic meter)

STATION	ADDRESS	HIGHEST SAMPLES (ug/m3) 24-HOUR 1ST	2ND	3RD	4TH	ANNUAL AVERAGE
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)						
MADISON COUNTY						
Alton	1700 Annex St.					
MAJOR CONSTITUENTS						
Inorganic Elements		1.3	1.2	1.1	1.0	0.5
Ammonium		5.0	3.9	3.7	3.1	1.5
Nitrate		9.3	7.9	7.2	6.0	2.0
Sulfate		14.7	6.3	6.2	5.9	3.1
Elemental Carbon		0.8	0.7	0.7	0.6	0.3
Organic Carbon		8.6	6.2	5.7	5.3	3.2
75 WEST CENTRAL ILLINOIS INTRASTATE						
MACON COUNTY						
Decatur	2200 N. 22nd St.					
MAJOR CONSTITUENTS						
Inorganic Elements		1.5	1.3	1.2	1.2	0.5
Ammonium		4.6	4.3	3.4	3.4	1.6
Nitrate		9.7	7.1	6.8	6.4	2.2
Sulfate		12.6	8.9	6.9	6.1	3.0
Elemental Carbon		1.0	1.0	0.8	0.7	0.4
Organic Carbon		7.9	5.7	5.4	4.7	3.1

APPENDIX C
POINT SOURCE EMISSION INVENTORY SUMMARY TABLES

Table C1

2004
Carbon Monoxide Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
External Fuel Combustion					
Electric Generation	12,119.2	13,208.0	12,939.3	14,120.6	13,247.4
Industrial	11,175.2	9,714.8	10,833.3	11,330.7	10,276.5
Commercial/Institutional	2,655.1	2,504.1	2,713.8	2,667.7	2,822.1
Space Heating	118.3	88.9	64.7	54.5	48.4
Internal Fuel Combustion					
Electric Generation	3,728.5	3,811.0	2,302.7	5,622.9	5,356.3
Industrial	4,165.9	6,564.4	4,653.2	5,642.9	4,818.2
Commercial/Institutional	601.1	735.3	629.4	451.5	652.2
Engine Testing	411.8	366.8	886.4	811.7	589.5
Off Highway 2-stroke Gasoline Engines	20.0	0.0	0.0	0.0	0.0
Fugitive Emissions	1.5	0.0	0.5	0.5	0.0
Industrial Processes					
Chemical Manufacturing	15,642.5	13,780.8	12,618.8	4,172.7	3,514.1
Food/Agriculture	1,114.8	1,000.3	1,063.5	1,093.9	1,329.0
Primary Metal Production	51,029.4	24,201.9	23,021.0	13,969.3	10,028.6
Secondary Metal Production	2,912.6	2,866.4	3,198.0	3,154.6	1,729.8
Mineral Products	3,487.5	4,087.2	9,158.7	9,835.7	9,178.8
Petroleum Industry	6,052.8	5,992.5	5,363.6	5,319.6	7,812.1
Paper and Wood Products	1.1	10.9	26.6	26.6	33.4
Rubber and Plastic Products	34.1	35.9	127.2	18.7	21.0
Fabricated Metal Products	1,236.4	1,266.7	1,307.3	1,380.6	1,527.4
Oil and Gas Production	195.9	98.4	92.2	332.3	413.1
Building Construction	0.0	0.0	0.0	0.0	0.0
Miscelaneous Machinery	5.0	3.9	3.7	3.7	0.1
Electrical Equipment	1.9	2.2	2.7	2.3	2.3
Transportation Equipment	1.2	1.2	1.2	5.8	5.8
Health Services	6.4	18.8	28.4	102.9	169.8
Leather and Leather Products	0.0	0.0	0.0	0.0	0.0
Textile Products	0.4	0.1	0.1	0.0	0.0
1 0.0	0.0 0.00.0				

Table C1

2004
Carbon Monoxide Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
Solid Waste Disposal					
Government	1,345.0	1,585.4	2,036.7	3,623.3	3,383.0
Commercial/Institutional	608.8	421.3	309.7	284.7	259.4
Industrial	2,655.6	2,595.6	2,465.0	2,549.3	1,641.5
Site Remediation	0.5	1.0	10.4	20.2	19.3
MACT Processes					
Food and Agriculture Processes	0.0	0.0	0.0	0.0	0.0
Agricultural Chemical Production	0.0	0.0	0.0	0.0	0.0
Styrene or Methacrylate Based Resins	0.0	0.0	0.0	0.0	0.0
Cellulose Based Resins	0.0	0.0	0.0	0.0	0.0
Miscellaneous Resin Production	0.0	0.0	0.0	0.0	0.0
Alkyd Resin Production	0.0	0.0	0.0	0.0	0.0
Vinyl Based Resins	0.0	0.0	0.0	0.0	0.6
Miscellaneous Polymers	0.0	0.0	0.0	0.0	0.0
Fibers Production	0.0	0.0	0.0	0.0	0.0
Consumer Product Mfg Facilities	0.0	0.0	0.0	0.0	0.0

Table C2

2004

Nitrogen Oxides Point f3,O Tw (Table C2) Tj 45.75 0 T71le /mission Distribution (Tons/Yea

Table C2

2004
Nitrogen Oxides Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
Solid Waste Disposal					
Government	820.3	1,108.1	1,248.2	2,015.1	1,417.4
Commercial/Institutional	125.2	99.9	98.3	105.9	110.4
Industrial	666.4	706.1	669.2	826.0	486.2
Site Remediation	4.5	1.1	7.0	23.9	22.8
MACT Processes					
Food and Agriculture Processes	0.0	0.0	0.0	0.0	0.0
Agricultural Chemical Production	0.0	0.0	0.0	0.0	0.0
Styrene or Methacrylate Based Resins	0.0	0.0	0.0	0.0	0.0
Cellulose Based Resins	0.0	0.0	0.0	0.0	0.0
Miscellaneous Resin Production	0.0	0.0	0.0	0.0	0.0
Alkyd Resin Production	0.0	0.0	0.0	0.0	0.0
Vinyl Based Resins	0.0	0.0	0.0	0.0	4.1
Miscellaneous Polymers	0.0	0.0	0.0	0.0	0.0
Fibers Production	0.0	0.0	0.0	0.0	0.0
Consumer Product Mfg Facilities	0.0	0.0	0.0	0.0	0.0
Miscellaneous Processes	0.0	0.0	0.0	0.0	0.0
Paint Stripper Use	0.0	0.0	0.0	0.0	0.0
Phthalate Plasticizers Production	0.0	0.0	0.0	0.0	0.0
Totals	**424,609.4**	**358,263.3**	**301,215.7**	**289,921.3**	**248,245.3**

Table C3

2004
Particulate Matter Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
External Fuel Combustion					
Electric Generation	17,042.7	17,275.6	16,273.9	15,336.4	15,167.5
Industrial	3,788.7	3,116.0	2,980.2	2,938.6	2,961.6
Commercial/Institutional	861.6	714.9	773.7	746.6	684.4
Space Heating	22.4	22.8	20.0	10.8	9.7
Internal Fuel Combustion					
Electric Generation	392.0	624.2	188.2	634.4	784.5
Industrial	114.2	176.3	245.3	509.0	314.5
Commercial/Institutional	43.0	43.7	41.7	28.8	133.5
Engine Testing	39.6	39.6	62.0	46.6	324.1
Off Highway 2-stroke Gasoline Engines	0.1	0.0	0.0	0.0	0.0
Fugitive Emissions	0.0	0.0	0.0	0.1	0.0
Industrial Processes					
Chemical Manufacturing	3,934.0	3,299.0	3,253.8	2,876.1	3,419.6
Food/Agriculture	20,140.4	18,950.1	18,919.3	16,373.6	17,280.1
Primary Metal Production	6,539.9	5,408.2	3,897.2	2,942.3	2,690.3
Secondary Metal Production	7,599.3	6,334.8	4,728.6	4,788.1	2,989.1
Mineral Products	23,872.1	23,458.7	19,984.3	22,432.0	21,164.3
Petroleum Industry	2,930.1	3,061.1	2,442.1	2,540.6	2,924.8
Paper and Wood Products	800.3	451.7	327.5	306.9	282.3
Rubber and Plastic Products	688.1	663.8	580.4	521.2	522.5
Fabricated Metal Products	1,254.5	992.5	943.0	861.7	756.6
Oil and Gas Production	7.2	3.3	11.9	18.4	11.2
Building Construction	0.0	1.5	1.5	1.9	1.8
Miscelaneous Machinery	126.0	94.3	91.2	69.6	61.7
Electrical Equipment	13.0	37.9	24.3	21.4	14.8
Transportation Equipment	72.7	54.7	54.7	73.2	73.6
Health Services	4.2	14.8	31.4	858.0	88.0
Leather and Leather Products	48.7	50.5	4.3	4.3	4.2
Textile Products	10.2	10.4	12.4	2.9	12.8
Printing/Publishing (typesetting)	0.3	0.3	0.3	1.9	1.8
Process Cooling	24.3	259.9	342.3	352.1	416.9
In-Process Fuel Use	201.6	228.9	341.8	356.0	260.0
Miscellaneous Manufacturing	266.4	236.0	142.1	118.0	104.7
Organic Solvent Emissions					
Organic Solvent Use	14.7	9.3	20.0	16.120.0	

148.0

Table C3

2004
Particulate Matter Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
Solid Waste Disposal					

Table C4

2004
Sulfur Dioxide Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
External Fuel Combustion					
Electric Generation					

Table C4

2004
Sulfur Dioxide Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
Solid Waste Disposal					
Government	218.5	301.0	331.0	640.8	372.8
Commercial/Institutional	36.1	37.6	38.0	45.4	37.0
Industrial	569.0	395.3	386.9	528.6	503.8
Site Remediation	3.2	22.4	26.6	27.1	5.6
MACT Processes					
Food and Agriculture Processes	0.0	0.0	472.6	472.6	541.6
Agricultural Chemical Production	0.0	0.0	0.0	0.0	0.0
Styrene or Methacrylate Based Resins	0.0	0.0	0.0	0.0	0.0
Cellulose Based Resins	0.0	0.0	0.0	0.0	0.0
Miscellaneous Resin Production	0.0	0.0	0.0	0.0	0.0
Alkyd Resin Production	0.0	0.0	0.0	0.0	0.0
Vinyl Based Resins	0.0	0.0	0.0	0.0	0.0
Miscellaneous Polymers	0.0	0.0	0.0	0.0	0.0
Fibers Production	0.0	0.0	0.0	0.0	0.0
Consumer Product Mfg Facilities	0.0	0.0	0.0	0.0	0.0
Miscellaneous Processes	0.0	0.0	0.0	0.0	11.0
Paint Stripper Use	0.0	0.0	0.0	0.0	0.0
Phthalate Plasticizers Production	0.0	0.0	0.0	0.0	0.0
Totals	**1,070,058.3**	**653,797.5**	**531,342.7**	**512,320.6**	**507,142.1**

Table C5

2004
Volatile Organic Material Point Source Emission Distribution (Tons/Year)

Category	2000	2001	2002	2003	2004
External Fuel Combustion					
Electric Generation	1,235.9	1,337.5	1,342.2	1,461.3	1,413.5
Industrial	1,232.2	1,130.6	854.1	814.4	745.4
Commercial/Institutional	250.0	258.2	380.8	344.9	159.8
Space Heating	26.0	18.2	13.4	14.8	13.1
Internal Fuel Combustion					
Electric Generation	443.3	709.2	292.9	639.8	468.5
Industrial	1,979.2	1,932.4	1,022.2	1,066.1	954.9
Commercial/Institutional	79.8	139.1	122.1	78.1	104.9
Engine Testing	93.8	72.5	236.9	232.5	216.7
Off Highway 2-stroke Gasoline Engines	4.5	0.0	0.0	0.0	0.0
Fugitive Emissions	0.0	37.9	19.6	0.3	0.1
Industrial Processes					
Chemical Manufacturing	14,441.9	12,504.9	12,698.4	12,405.2	15,798.3
Food/Agriculture	10,503.5	9,942.7	10,503.8	10,885.9	11,020.4
Primary Metal Production	3,098.3	1,756.9	674.2	645.3	559.1
Secondary Metal Production	1,439.0	1,178.0	1,914.9	1,829.4	1,076.0
Mineral Products	1,661.9	1,476.9	1,694.3	2,543.6	2,225.1
Petroleum Industry	6,049.7	6,027.9	5,197.5	4,292.0	3,029.1
Paper and Wood Products	146.4	198.5	177.0	240.1	269.9
Rubber and Plastic Products	4,487.4	4,096.4	5,061.1	4,607.2	4,322.0
Fabricated Metal Products	1,470.1	1,743.6	1,545.4	1,290.8	1,388.5
Oil and Gas Production	720.9	564.0	252.5	465.7	273.6
Building Construction	0.0	0.0	0.0	0.0	0.0
Miscelaneous Machinery	114.7	31.3	28.7	25.8	23.8
Electrical Equipment	224.5	200.4	185.7	142.2	102.6
Transportation Equipment	26.3	26.3	40.4	267.8	267.5
Health Services	86.6	75.2	81.2	70.6	52.0
Leather and Leather Products	69.2	90.0	108.6	107.0	105.8
Textile Products	4.9	4.9	4.9	7.3	6.2
Printing/Publishing (typesetting)	0.0	0.0	0.0	0.0	0.0
Process Cooling	0.0	10.1	11.6	12.6	117.6
In-Process Fuel Use	235.1	329.7	180.4	141.5	221.3
Miscellaneous Manufacturing	354.5	332.8	287.5	261.7	213.8
Organic Solvent Emissions					
Organic Solvent Use	1,914.4	1,484.4	1,403.8	1,371.0	1,141.8
Surface Coating Operations	22,338.8	20,049.9	17,979.3	16,512.2	13,480.0
Petroleum Product Storage	5,773.7	5,214.4	5,058.6	4,684.1	4,973.4
Bulk Terminals/Plants	1,755.8	2,117.9	2,402.2	2,967.0	2,799.1
Printing/Publishing	11,028.1	11,517.9	9,012.0	10,062.2	8,296.9
Petroleum Marketing/Transport	1,250.8	1,319.1	1,519.7	1,413.0	1,565.6
Organic Chemical Storage (large)	1,184.3	1,147.5	1,222.3	1,042.7	1,188.5
Organic Chemical Transportation	69.8	40.2	38.6	29.0	84.7
Dry Cleaning (petroleum based)	389.0	380.7	457.7	550.9	585.6
Organic Chemical Storage (small)	1.9	1.9	2.9	1.0	0.9
Organic Solvent Evaporation	3,590.0	4,027.4	3,537.6	3,147.4	1,011.8

Table C5

2004

Volatile

Table C6

2004
Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	Particulate Matter	Sulfur Dioxide	Volatile Organic Material
Adams	269.5	341.8	616.2	971.8	924.3
Alexander	192.9	332.6	139.5	934.8	128.4
Bond	183.1	43.7	72.2	13.6	35.7
Boone	230.0	321.3	208.0	14.2	334.1
Brown	16.2	7.3	32.3	1.3	3.9
Bureau	35.3	71.7	262.8	6.9	230.6
Calhoun	0.6	0.7	44.7	0.0	0.0
Carroll	73.6	92.5	175.7	5.4	53.0
Cass	82.4	128.4	128.2	18.1	68.4
Champaign	2,611.4	2,301.5	827.2	1,196.9	1,019.8
Christian	1,162.4	20,130.2	504.2	18,023.6	285.0
Clark	12.1	10.1	123.7	1.1	130.0
Clay	80.0	146.1	89.8	19.2	235.2
Clinton	237.7	899.5	115.4	162.6	160.8
Coles	270.9	186.3	397.8	89.8	641.6
Cook	9,617.1	20,198.8	10,125.4	22,635.4	17,154.8
Crawford	1,320.4	4,530.0	839.5	23,995.8	1,299.6
Cumberland	16.7	3.2	51.5	0.4	16.4
DeKalb	123.8	113.2	236.3	30.2	373.8
DeWitt	135.2	58.1	234.9	16.6	121.3
Douglas	2,060.7	9,890.3	1,279.8	19,180.3	728.4
DuPage	1,719.9	1,841.2	934.5	315.9	2,144.5
Edgar	44.8	70.1	244.8	38.5	415.0
Edwards	5.4	16.8	52.9	0.1	261.8
Effingham	75.1	56.5	211.7	4.8	417.4
Fayette	110.2	294.0	205.4	210.1	250.9
Ford	47.9	71.1	384.3	2.5	655.0
Franklin	23.4	58.0	154.5	0.4	277.7
Fulton	283.4	3,601.7	277.9	10,403.8	32.9
Gallatin	4.5	18.1	175.9	6.4	7.4
Greene	0.0	0.0	98.8	0.1	30.1
Grundy	2,009.7	3,330.7	1,246.2	4,844.2	1,326.8
Hamilton	1.2	5.6	43.5	0.0	8.4
Hancock	2.2	13.8	194.6	4.6	5.6

Table C6

2004
Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	Particulate Matter	Sulfur Dioxide	Volatile Organic Material
Hardin	245.3	25.3	215.2	58.0	37.7
Henderson	19.9	8.3	165.1	1.7	7.0
Henry	608.1	2,088.7	306.9	25.3	313.1
Iroquois	53.4	63.2	471.6	4.7	478.6
Jackson	169.2	177.6	168.2	562.9	77.5
Jasper	1,049.0	5,135.9	1,027.0	17,164.9	165.7
Jefferson	32.2	21.5	195.0	4.9	366.6
Jersey	0.7	0.0	56.0	0.0	29.6
Jo Daviess	269.0	887.9	599.5	1.2	717.6
Johnson	45.1	38.3	102.2	370.3	24.4
Kane	787.9	769.4	1,044.2	104.3	1,981.7
Kankakee	814.7	1,671.2	859.2	18.8	1,293.7
Kendall	620.7	1,150.1	454.0	57.4	665.8
Knox	135.3	259.1	338.3	44.5	354.0
Lake	2,514.7	7,118.3	1,599.5	11,539.3	1,654.9
La Salle	4,829.3	5,604.3	3,658.0	4,117.3	2,456.1
Lawrence	8.9	33.7	80.1	3.6	155.7
Lee	94.6	1,422.6	592.1	442.6	534.4
Livingston	531.7	940.7	634.3	29.5	632.8

Table C6

2004
Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	Particulate Matter	Sulfur Dioxide	Volatile Organic Material
Morgan	465.5	2,970.3	931.3	12,095.4	335.2
Moultrie	3.2	5.5	126.1	0.1	203.4
Ogle	636.1	490.7	747.4	59.1	1,709.6
Peoria	1,967.4	10,960.3	2,752.1	61,046.3	2,889.2
Perry	274.4	63.2	137.1	5.6	49.8
Piatt	217.0	1,112.8	178.3	5.3	77.2
Pike	278.8	1,791.7	443.1	1,867.2	63.2
Pope					

Table C7

Annual Estimated Emissions Trends (Tons)

Year	Carbon Monoxide	Nitrogen Oxides	Particulate Matter	Sulfur Dioxide	Volatile Organic Material
1981	240,421	826,427	276,529	1,577,992	270,814
1982	163,704	693,054	184,716	1,404,040	233,951
1983	144,622	759,453	185,931	1,363,292	207,405
1984	110,922	746,367	204,490	1,435,066	197,418
1985	107,876	715,556	174,102	1,406,300	191,070
1986	109,777	676,181	164,246	1,400,761	180,148
1987	98,213	644,511	166,292	1,379,407	176,406
1988					

163,704

1693,704 1693,704 29. Tc 036377 T01.289,92TD 0 Tc TD -0 ,08 Tc 0 Tw (1 Tw (1988) 848 Tc 0 Tw (1693,70461,395 (169c 0 TTD -0.0708 Tc 0 TD -0.0808 Tc 0364w (180 1693,704
180,142T2.0848 T22Tw (1848 Tc 0MaterialTjj 235jj 29. Tc 0363) Tj3

APPENDIX D

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 Enforcement, 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.

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.

- Coordination of the Bureau's Stationary Source Inventory.

Compliance and Enforcement

The Compliance and Enforcement Section provides Management oversight for all aspects of the compliance program.

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.

- Evaluate the Annual Emission Reports provided by Illinois industry.

- Oversees the source emissions monitoring program including continuous emission monitors (cems), stack testing, and escess emissions reporting

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.

Table D1

BUREAU OF AIR