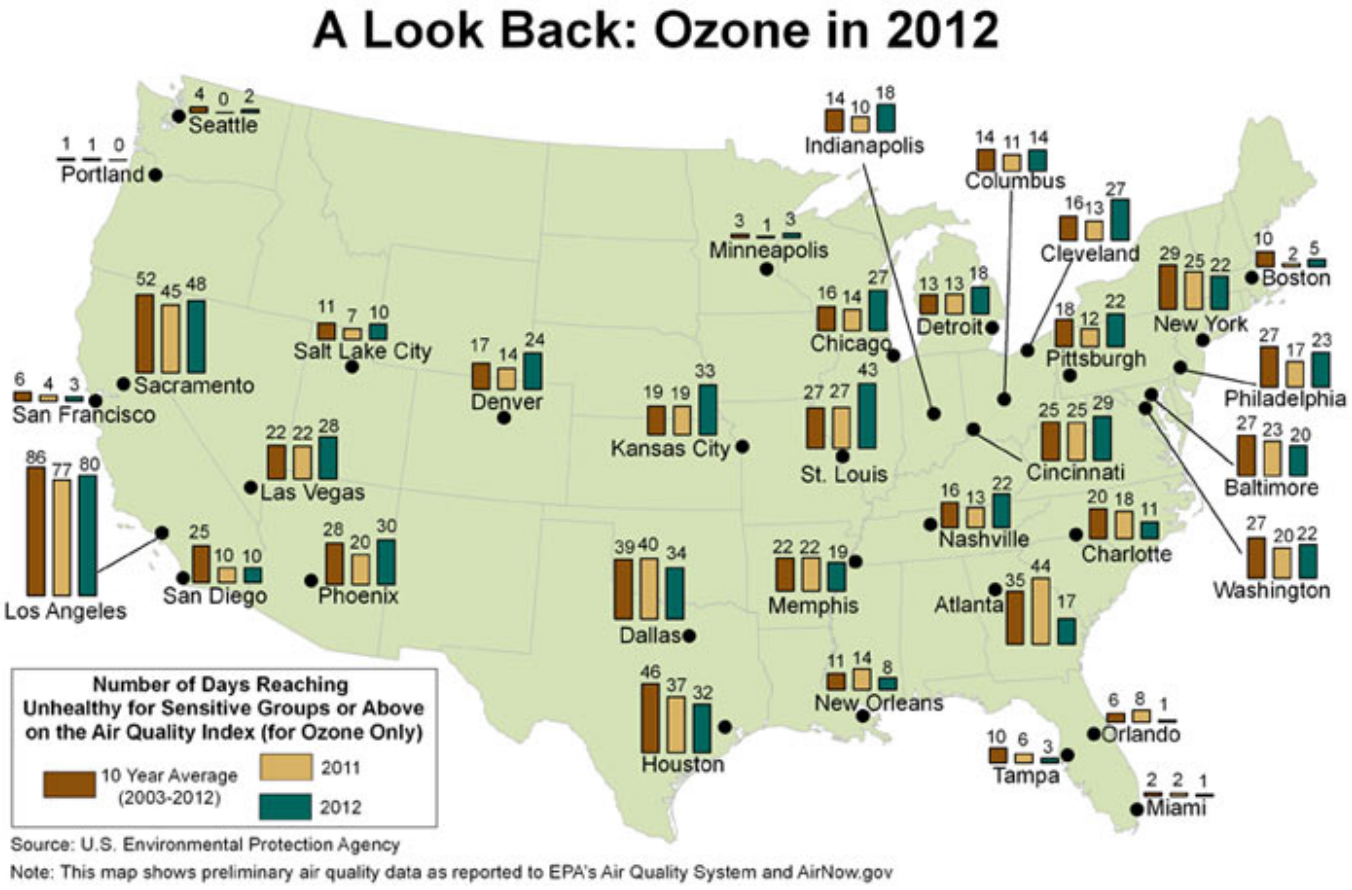
State of Illinois
Illinois Environmental Protection Agency

2012

Illinois Annual Air Quality Report

December 2013

The following information was provided by the U.S. Environmental Protection Agency through the AirNow website, www.airnow.gov:



A Look Back: Ozone in 2012

Many U.S. cities saw an increase in 2012 in the number of days when ozone levels reached "code orange" on the Air Quality Index (AQI), or "unhealthy for sensitive groups." A number of factors influence ozone formation, including emissions from power plants, cars, trucks, buses and industries – and weather conditions. Weather is especially favorable for ozone formation when it's hot, dry and sunny, and winds are calm and light. A warmer-than-average June and August in 2012, combined with the third-hottest summer on record in the continental U.S.*, made conditions favorable for ozone formation in many regions of the country.

Information sources: Preliminary air quality data as reported to EPA's Air Quality System and AirNow.gov; weather information from the National Climatic Data Center

ILLINOIS ANNUAL AIR QUALITY REPORT 2012

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To Obtain Additional Information

For additional information on air pollution, please call 217-782-7326, or write to:

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Acknowledgements

This document is produced by the Illinois Environmental Protection Agency; Lisa Bonnett, Director.

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

A MESSAGE FROM THE DIRECTOR

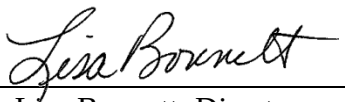
The Illinois EPA has published an Annual Air Quality Report for more than 40 years. Over these past decades, Illinois has made great strides in regard to improving air quality. Illinois air pollution control programs and regulations at both the national and state level have had a significant impact on bringing the state's air quality to the levels we are experiencing today. While some portions of Illinois do fall short of a few of the current National Ambient Air Quality Standards (NAAQS), these areas have achieved compliance with the previous standards and are much closer to achieving compliance with the newly tightened standards than they were twenty, or even ten years ago.

Each day, representatives from the Illinois EPA issue an air quality forecast for fourteen sectors throughout the state. Those forecasts require the examination of current air quality levels, as well as meteorological conditions across the state. Air quality can change significantly as a result of several factors that include temperature, atmospheric pressure, precipitation, wind speed and even wind direction. Agency meteorologists review all of these factors along with modeling data to accurately provide the daily air quality forecasts. At times, representatives from multiple states within our region will consult with one another to determine forecasts.

States, and even regions, will periodically experience unusual weather patterns that will result in an elevated concern for air quality. For Illinois, and much of the country, 2012 was a notable year in terms of meteorology and its impact to air quality. As noted in the U.S. EPA write-up included on the inside cover, "weather is especially favorable for ozone formation when it's hot, dry and sunny, and winds are calm and light." In Illinois, high temperature records were broken throughout the state in 2012. For St. Louis Metro-East and Chicago, 2012 was the warmest year on record, and it was the second warmest recorded year in Springfield. The Metro-East region had 26 record highs broken or tied, with 23 consecutive days of 90+ degree temperatures and 10 consecutive days of 100+ degree temperatures. The Chicago region experienced record breaking weather early, registering the warmest March on record. The region's summer season (June, July and August) had no days where more than one inch of rain was recorded. The seasonal rain total was just 6.63 inches compared to the normal 12.05 inches.

The 2012 Annual Air Quality Report reflects the extraordinary weather experienced throughout the year. As you will see in the executive summary, ozone levels resulted in multiple days at the Red or Unhealthy category according to the Air Quality Index. A higher number of Orange or Unhealthy for Sensitive Group days were also recorded in 2012. Although such levels do cause concern at the time they are experienced, 10-year air quality trends show that Illinois continues to make progress and improvements on air quality overall.

It is a goal of the Illinois EPA to provide residents with accurate and current air quality information. Individuals can view daily air quality data through the Agency's website at www.epa.state.il.us/air/air-quality-menu.html. For additional question and/or comments regarding this report or other air pollution control programs, please contact the Illinois EPA.



Lisa Bonnett, Director

Illinois Annual Air Quality Report 2012

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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 2012. Data is presented for the six criteria pollutants (those for which air quality standards have been developed - particulate matter (PM_{10} and $PM_{2.5}$), ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead) along with some heavy metals, nitrates, sulfates, volatile organic and toxic compounds. Monitoring was conducted at 75 different site locations collecting data from more than 170 instruments.

In terms of the Air Quality Index (AQI) air quality during 2012 was either good or moderate 86 percent of the time throughout Illinois. There were 11 days (all for 8-hour ozone) when air quality in some part of Illinois was considered unhealthy (category red). This compares with zero unhealthy days in 2011. There were 40 days (34 for 8-hour ozone and 6 for $PM_{2.5}$) when air quality in some part of Illinois was considered unhealthy for sensitive groups (category orange). This compares with 31 Unhealthy for Sensitive Groups days reported in 2011. Air quality trends for the criteria pollutants are continuing to show downward or stable trends well below the level of the standards. Percentage changes over the ten year period 2003 – 2012 are as follows. 24-hour Particulate Matter (PM_{10}) 8 percent decrease, annual Particulate Matter ($PM_{2.5}$) 21 percent decrease, 1-hour Sulfur Dioxide 50 percent decrease, annual Nitrogen Dioxide 30 percent decrease, 8-hour Carbon Monoxide 48 percent decrease, Lead 5 percent decrease, and 8-hour Ozone 1 percent decrease.

Stationary point source emission data has again been included. The data in the report reflects information contained in the Emission Inventory System (EIS) as of December 31, 2012. Emission estimates are for the calendar year 2012 and are for the pollutants: particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides and carbon monoxide. Emission trends of these pollutants have been given for the years 1998 to the present. Emissions reported with the Annual Emissions Report have been provided starting with 1998 and are currently available through 2011. 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 re-form nitrogen dioxide, completing the cycle. A build-up of ozone above the equilibrium concentration defined by the reaction cycle 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 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 (0.05 parts per million) for 4 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 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 sulfur dioxide 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 photochemical 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 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 visibility 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 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 gas 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 NO_x 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 NO_x 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 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.

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. No safe level of lead in the blood has been identified. Clinical, epidemiological and toxicological studies have demonstrated exposure to lead has a broad range of health effects.

Since 1990 over 6,000 new health studies have been conducted. These studies have shown that children are the most susceptible to the damaging effects of lead because they are more likely to ingest lead due to hand-to-mouth activity and early body development. Lead exposure has been found to interfere with the developing nervous system including the brain. This can potentially lead to intelligence quotient loss, poor academic achievement, permanent learning disabilities and behavioral problems. These effects can persist into early adulthood.

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.

Other potential effects from lead exposure are weakened immune systems, restlessness, headaches, increased blood pressure and cardiovascular disease.

Illinois Ambient Air Quality Standards and Episode Levels

Consistent with the intent of the Environmental Protection Act of the State of Illinois, 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.

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})	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	35 ug/m^3	Same as Primary
Sulfur dioxide	1-hour	75 ppb	None
	3-hour	None	0.5 ppm
Carbon Monoxide	1-hour	35 ppm	None
	8-hour	9 ppm	None
Ozone	1-hour	0.12 ppm	Same as Primary
	8-hour	0.075 ppm	Same as Primary
Nitrogen Dioxide	Annual Arithmetic Mean	53 ppb	Same as Primary
	1-hour*	100 ppb	None
Lead	Rolling 3-Month Mean	0.15 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 millimeters of mercury and 25 degrees celcius).
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 2012

OZONE

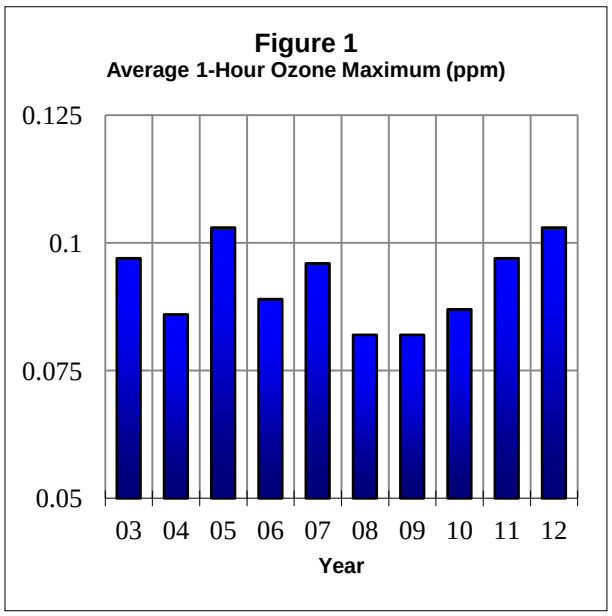
Monitoring was conducted at 38 locations during at least part of the April-October "ozone season" and at least 75 percent data capture was obtained at 35 sites.

Four sites recorded hourly concentrations above the former 0.12 parts per million (ppm) 1-hour standard. Zion recorded the highest 1-hour concentration of 0.138 ppm followed by Evanston with a concentration of 0.129 ppm. This compares with the highest concentration of 0.139 ppm in 2011 at the University of Chicago. The highest value in the St. Louis Metro East area was 0.125 ppm recorded at Maryville compared with a high in 2011 of 0.109 ppm at Jerseyville.

Data is also presented to compare with the 8-hour standard of 0.075 ppm. The appropriate statistic for comparison with the 8-hour standard is the fourth highest value, which is averaged over a three year period. There were 23 sites in Illinois that had a fourth high value above 0.075 ppm in 2012 compared with 11 sites in 2011. The highest fourth high value was 0.093 ppm at both Evanston and Zion. The highest level in the St. Louis Metro-East area was 0.089 ppm at Jerseyville. For the three year period 2010 – 2012, 11 sites had a fourth highest average above 0.075 ppm (Table B4).

Figure 1 shows for each year the statewide average of each site's highest hourly ozone value for the ten year period 2003-2012. The graph shows some year-to-year fluctuation with high years in 2005 and 2012 and low years in 2004, 2008 and 2009. The statewide average for 2012 was 0.103 ppm compared with 0.097 ppm in 2011 and 0.087 ppm in 2010.

Statewide, the total number of 1-hour excursion days in 2012 was two compared with two in 2011 and zero in 2010.



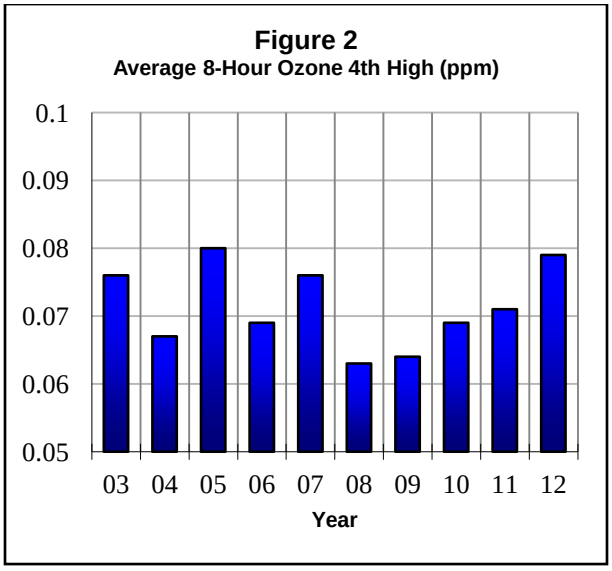


Figure 2 shows for each year the statewide average of the 4th highest 8-hour ozone value for the same period 2003-2012. The statewide average for 2012 was 0.079 ppm

compared with 0.071 ppm in 2011 and 0.069 in 2010.

Overall, Illinois' weather was well above normal in terms of meteorological conditions favorable to ozone formation and transport statewide. July was the most conducive month in terms of meteorological conditions statewide and also had the most 8-hour exceedance days.

PARTICULATE MATTER

Monitoring was conducted at 34 sites for $PM_{2.5}$. Valid annual averages were obtained for 29 of the 34 sites. No sites recorded an average above 15.0 ug/m^3, the level of the annual standard, compared with zero sites in 2011 and zero sites in 2010. The Statewide average of the annual averages was 10.4 ug/m^3 in 2012 compared with 11.2 ug/m^3 in 2011 and 11.6 ug/m^3 in 2010.

Figure 3 shows the trend of the statewide annual averages for $PM_{2.5}$ for the period 2003-2012. There were 17 exceedances of the 24-hour standard of 35 ug/m^3 in 2012 compared with 6 exceedances in 2011 and 31 exceedances in 2010. The statewide peak of 45.3 ug/m^3 was recorded at the Lyons Township station. The statewide average of the 98th percentile of 24-hour averages was 23.2 ug/m^3 in 2012 compared with 25.5 ug/m^3 in 2011 and 26.9 ug/m^3 in 2010.

In 2012 there were four sites monitoring PM_{10}. The statewide annual average was 26 ug/m^3 compared with 23 ug/m^3 in 2011 and 23 ug/m^3 in 2010.

For PM_{10} the statewide average of the maximum 24-hour averages in 2012 was 68 ug/m^3 compared with 69 ug/m^3 in 2011 and 62 ug/m^3 in 2010. **Figure 4** depicts this trend for the period 2003-2012.

No sites exceeded the former primary annual standard of 50 ug/m^3. The highest annual average was 32 ug/m^3 in Granite City. The lowest annual was 17 ug/m^3 in Northbrook.

There were no exceedances of the 24-hour primary standard of 150 ug/m^3. The highest 24-hour average was recorded at Chicago Washington High School with a value of 106 ug/m^3 compared with a high 24-hour value of 92 ug/m^3 in Lyons Township in 2011.

Figure 3
Particulate Matter ($PM_{2.5}$) Annual Trends (ug/m^3)

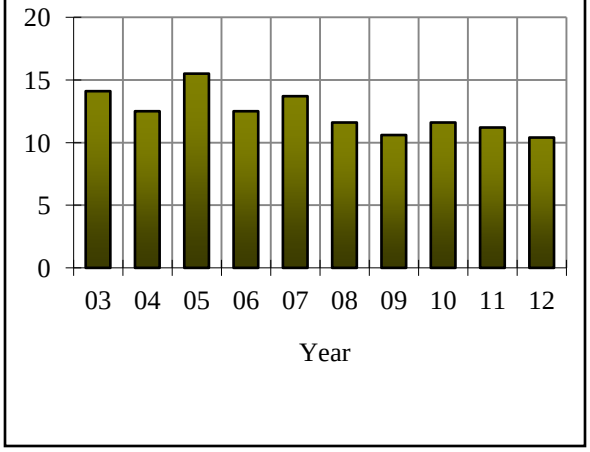
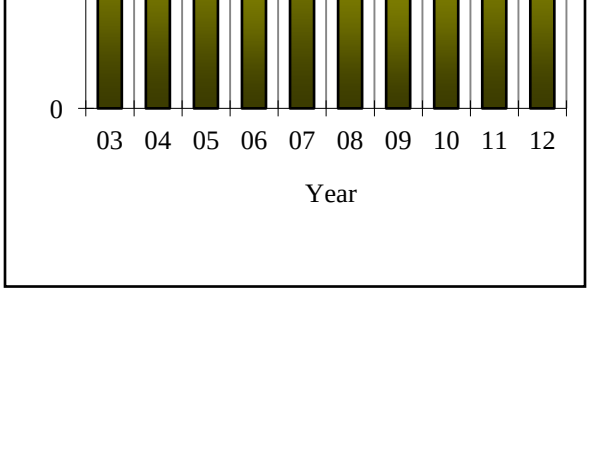


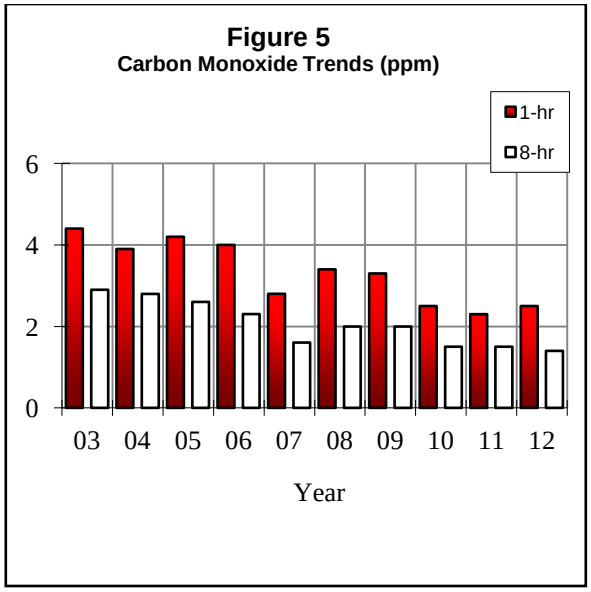
Figure 4
Particulate Matter (PM_{10}) 24-Hour Trends (ug/m^3)



CARBON MONOXIDE

There were no exceedances of either the 1-hour primary standard of 35 ppm or the 8-hour primary standard of 9 ppm in 2012. The highest 1-hour average was 4.1 ppm recorded in Springfield. The highest 8-hour average was 2.3 ppm recorded in Peoria.

Figure 5 shows the trend for the period 2003-2012 for the statewide average of the 1-hour and 8-hour high CO values. The overall trend for both averages is downward. The statewide average of the 1-hour high was 2.5 ppm in 2012 compared with 2.3 ppm in 2011. The statewide average for the 8-hour high was 1.4 ppm in 2012 compared with 1.5 ppm in 2011.



SULFUR DIOXIDE

There were 38 exceedances of the new 1-hour primary standard of 75 ppb in 2012 compared with 42 exceedances in 2011. There were no exceedances of the 3-hour secondary standard of 500 ppb in 2012. The annual and 24-hour primary standards were revoked by USEPA in 2010. The highest 1-hour average was 319 ppb recorded in Pekin compared with 262 ppb in Pekin in 2011. The statewide average of the 1-hour high in 2012 was 69 ppb. This compares with 63 ppb in 2011 and 75 ppb in 2010. The highest 3-hour average of 268 ppb was recorded in Pekin in 2012 compared with 176 ppb in Pekin in 2011. There were two sites over the primary 1-hour standard of 75 ppb for the 2010-2012 period compared to two sites for the 2010-2011 period (Table B17).

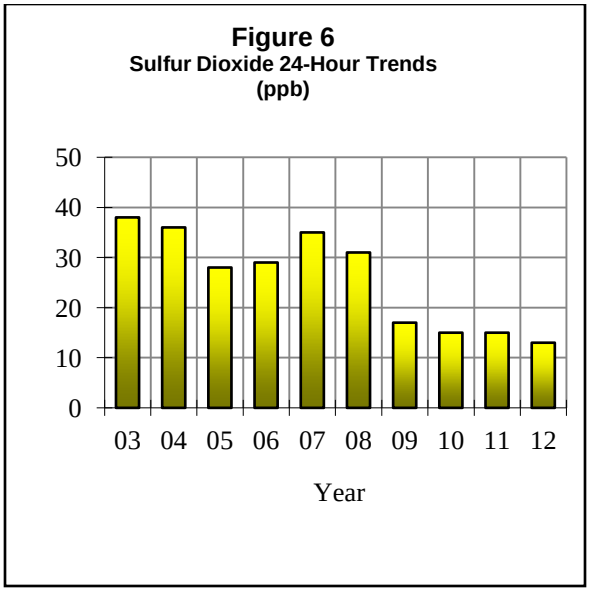
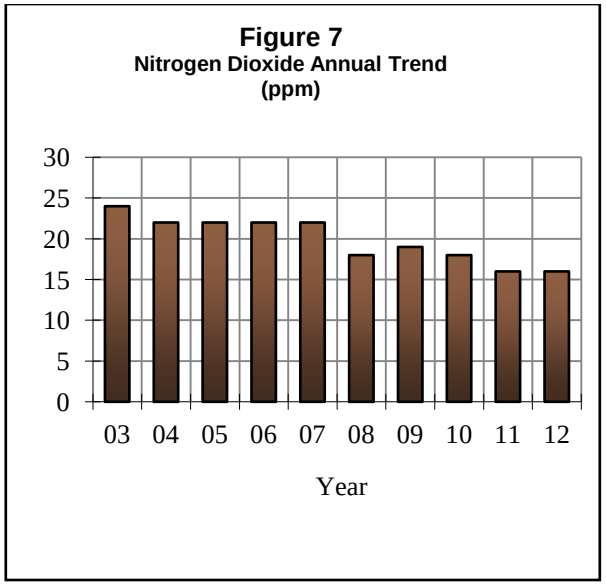


Figure 6 shows the statewide trend for the maximum 24-hour averages for the period 2003-2012. The 24-hour average trend has been overall downward; however a greater degree of year-to-year fluctuations have occurred. The statewide average for 2012 was 13 ppb compared with the 2011 average of 15 ppb. The statewide 1-hour average maximum for 2012 was 69 ppb compared with 63 ppb in 2011 and 75 ppb in 2010.

NITROGEN DIOXIDE

There were no violations of the annual primary standard of 53 ppb recorded in Illinois during 2012. The highest annual average of 22 ppb was recorded at Schiller Park and Chicago CTA. The Statewide average for 2012 was 16 ppb compared with 16 ppb in 2011 and 18 ppb in 2010. There were no violations of the new 1-hour primary standard in 2012 as well. This compares to zero violations in 2011. There were no sites over the 1-hour primary standard of 100 ppb for the 2010-2012 period compared to zero sites for the 2009-2011 period (Table B20).

Figure 7 depicts the trend of statewide averages from 2003-2012. The trend has been generally stable for the period ranging from 16 ppb to 24 ppb. 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. Based on new health studies the lead standard was revised in 2008 from a quarterly mean of 1.5 ug/m^3 to a rolling 3-month maximum mean of 0.15 ug/m^3.

There were no violations of the former quarterly lead standard of 1.5 ug/m3. There were three violations of the new rolling 3-month maximum mean standard for the 2010 to 2012 period. Violoations were recorded at Granite City - 15th & Madison with a value of 0.42 ug/m^3, Chicago Perez with a value of 0.29 ug/m^3 and Decatur Mueller with a value of 0.20 ug/m^3. This compares with a statewide high of 0.42 ug/m^3 for 2009 to 2011 at Granite City 15th & Madison.

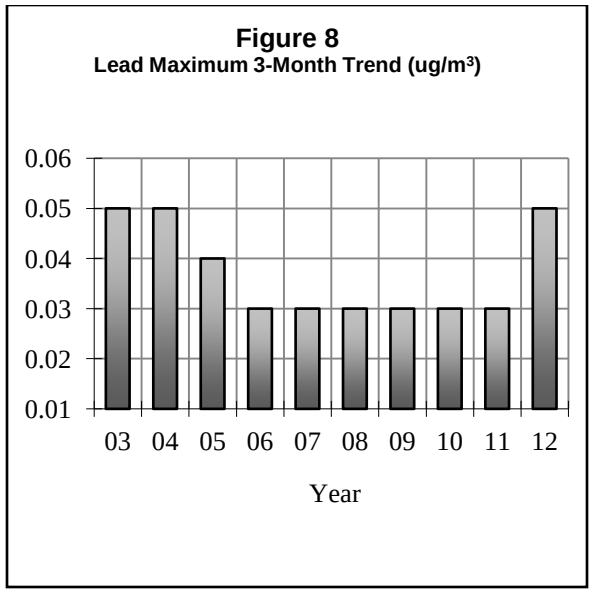


Figure 8 shows the trend of the statewide non-source maximum monthly averages from 2003-2012. The chart shows concentrations fluctuating between 0.03 ug/m^3 and 0.05 ug/m^3. In 2010, several source oriented monitors were installed and one non-source monitor was discontinued. Currently, not enough data exists for the source oriented sites to establish a trend. However, the statewide average for all sites was 0.11 ug/m^3 in 2012 compared to 0.08 ug/m^3 in 2011 and 0.12 ug/m^3 in 2010.

FILTER ANALYSIS RESULTS

The total suspended particulate samples were analyzed, in addition to lead, for specific metals. Several of the metals analyzed (arsenic, beryllium, cadmium, chromium, manganese, and nickel) have known toxic properties. Other metals such as iron can be used as tracers to help identify sources of high particulate 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 0.097 ug/m^3 measured in Granite City. The highest annual average of 0.005 ug/m^3 was also recorded at Granite City. There were no measurable beryllium 24-hour averages recorded statewide. Chicago – Washington and Sterling recorded the highest cadmium concentrations with a maximum 24-hour average of 0.007 ug/m^3 at both sites. The highest annual average of 0.002 ug/m^3 was also recorded at Chicago - Washington. The highest 24-hour chromium average was 0.099 ug/m^3 recorded at Schiller Park. Maywood had the highest annual average at 0.019 ug/m^3. The highest iron and manganese values were recorded in south Chicago and the high traffic areas of Maywood. The highest 24-hour average for nickel was recorded at Chicago - Washington with a value of 0.018 ug/m^3. The highest annual average was in Maywood with an average of 0.010 ug/m^3. In general metal concentrations were higher in 2012 than in 2011.

TOXIC COMPOUNDS

Sampling for toxic compounds other than metals (see Filter Analysis Section) was conducted at Northbrook and Schiller Park. Most compounds were below the method detection limits. The highest compounds were toluene, formaldehyde, benzene, acetaldehyde, and acrolein.

$PM_{2.5}$ SPECIATION

$PM_{2.5}$ samples are also analyzed for numerous constituents at 5 sites. The major constituents (inorganic elements, ammonium, nitrate, sulfate, elemental and organic carbon) are listed in **Table B27**. In general, approximately 57% is ammonium nitrate and ammonium sulfate, 36% is elemental and organic carbon and 8% is inorganic elements.

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 2012. 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 the short-term primary NAAQS corresponds to 100 on the AQI scale – the end of the Moderate category. The next concentration above the NAAQS would begin the Unhealthy for Sensitive Groups category at 101 on the AQI scale. The significant harm level corresponds to an AQI of 500 and a descriptor of Hazardous, and the episode criteria correspond to intermediate hundreds.

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 highest 1-hour or 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

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
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy
301 and above	Hazardous

Index & Category	Health Effects	Cautionary Statements
101-150, Unhealthy for Sensitive Groups	Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor activity.
151-200, Unhealthy	Greater likelihood of respiratory symptoms and breathing difficulties in active children and adults and people with respiratory disease, such as asthma. Possible respiratory effects in general population.	Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children should limit prolonged outdoor exertion.
201-300, Very Unhealthful	Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma: increasing likelihood of respiratory effects in general population.	Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
301-500, Hazardous	Severe respiratory effects and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma: increasingly severe respiratory effects likely in general population.	Everyone should avoid all outdoor exertion.

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 14 areas, or sectors, in Illinois (**Table 4**). These correspond to metropolitan areas with populations greater than 100,000.

Illinois AQIs are computed from data up to and including the 3 p.m. local time readings (4 PM during the summer 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 to both the National Weather Service and the Illinois EPA website (link below), about 3:30 p.m. each work day (4:30 p.m. during the summer). Almost all TV stations and many radio stations and newspapers are able to receive this information to inform the public about the AQI either immediately or on the evening news. Additional AQI and forecast information can be obtained on Illinois EPA's web site (http://www.epa.state.il.us/air/aqi/index.html) and EPA's AirNow website (http://www.airnow.gov). The AirNow website shows current AQI information for the larger sectors in Illinois as well as other areas around the country. In the Chicago area, AQIs are also available on phone recordings maintained by the Cook County Department of Environmental Control and the Chicago Department of the Environment. Residents in the Chicago area can access the Partners For Clean Air website (http://www.cleantheair.org/) which includes a 3-day forecast along with a link for updates on Twitter. AQI information can further be obtained via e-mail and/or cell phones through the EnviroFlash program (http://illinois.enviroflash.info/signup.cfm).

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 Illinois EPA sends out special bulletins to the National Weather Service. The AirNow website and residents subscribed to EnviroFlash program can also receive alerts when high pollution levels are occurring or expected to occur.

2012 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 2012. All sectors had a higher frequency of "Good" than "Moderate" and "Unhealthy for Sensitive Groups". Lake County, Aurora-Elgin, Joliet/Will County, Rockford, Quad Cities, Peoria, Champaign, Normal, Decatur and Springfield sectors had 70 percent or more of the days in the "Good" category. Within AQI sectors there were 127 occurrences of "Unhealthy for Sensitive Groups" air quality in 2012. The sector breakdown for "Unhealthy for Sensitive Groups" was 17 in Lake County, 15 in Chicago, 18 in North & West Suburbs, 16 in South & West, 4 in Aurora-Elgin, 8 in Will County, 1 in Rockford, 7 in Peoria, 6 in Normal, 4 in Champaign, 4 in Decatur, 6 in Springfield, and 21 in Metro-East. Outside of AQI sectors there were 21 additional occurrences of "Unhealthy for Sensitive Groups". There were 13 occurrences of "Unhealthy" air quality in 2012 with 2 in Lake, 4 in Chicago, 4 in North and West Suburbs, and 3 in Metro-East. Outside of AQI sectors there were 2

additional occurrences of "Unhealthy". **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 2012, there were no ozone advisories issued in the State. An advisory is declared when ozone levels have reached the level of the former 1-hour standard (0.125 ppm) on a particular day and meteorological conditions are such that these levels are expected again the next day. There were 12 Air Pollution Action Days issued in 2012. This compares with 5 in 2011.

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.
Chicago Sector	All areas within the city limits of Chicago
South and West Suburbs Sector	Parts of Cook and DuPage Counties south of I-290 and outside of Chicago city limits
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
Champaign Sector	Champaign-Urbana Metropolitan Area
Normal Sector	Bloomington-Normal Metropolitan Area
Decatur Sector	Decatur Metropolitan Area
Springfield Sector	Springfield Metropolitan Area
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: 2012 Air Quality Index Summaries by Sector

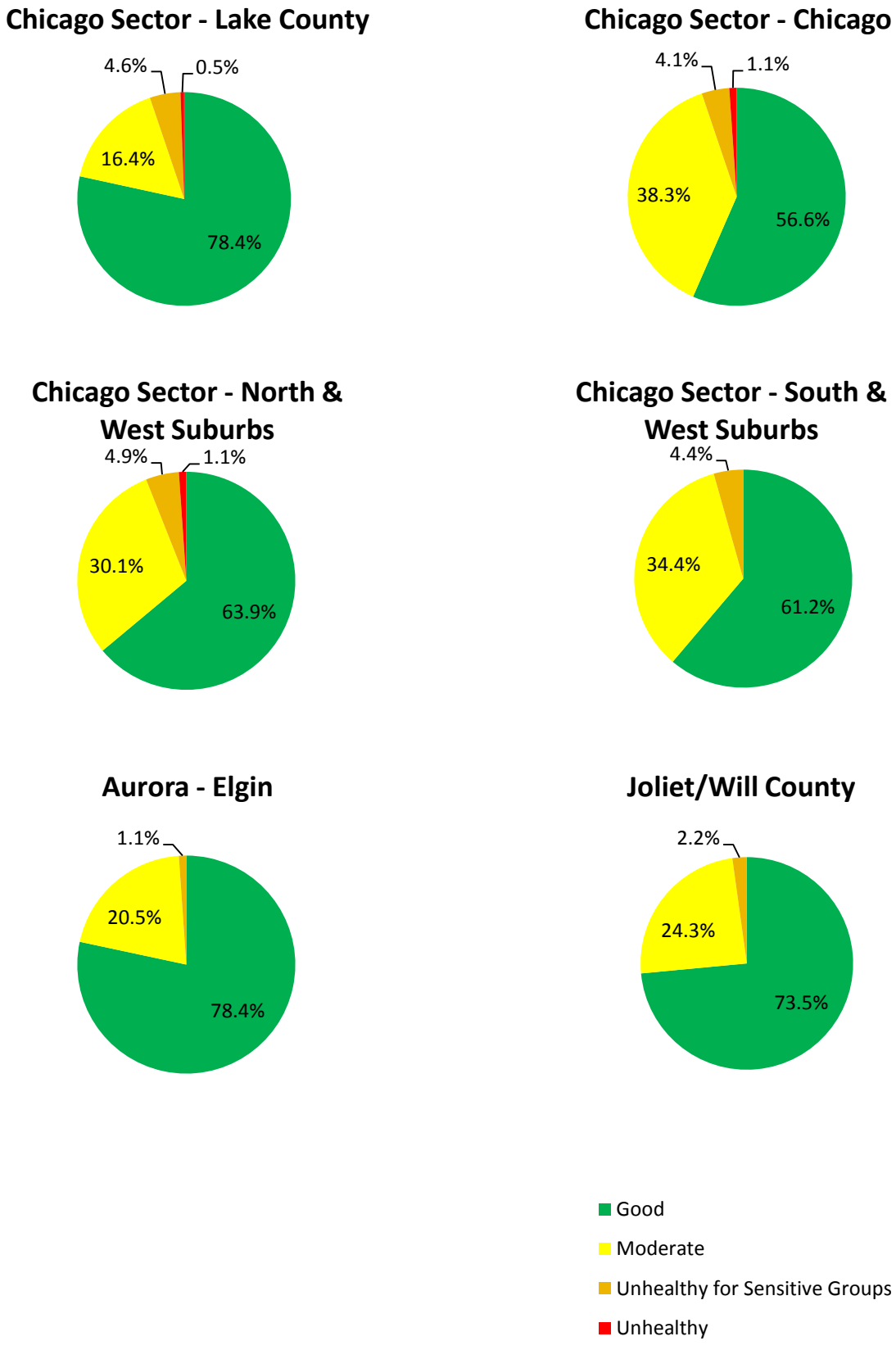


Figure 9: 2012 Air Quality Index Summaries by Sector

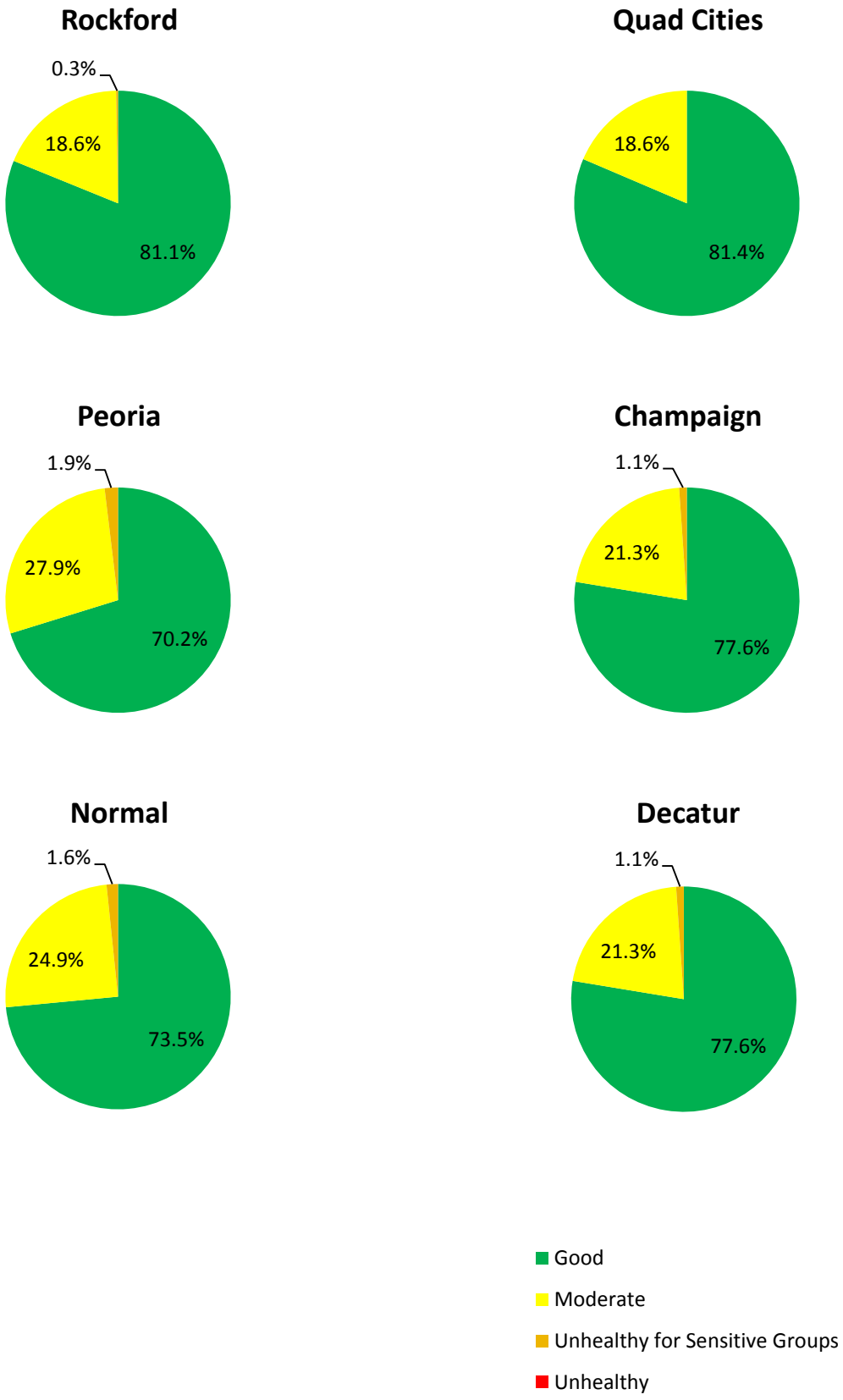
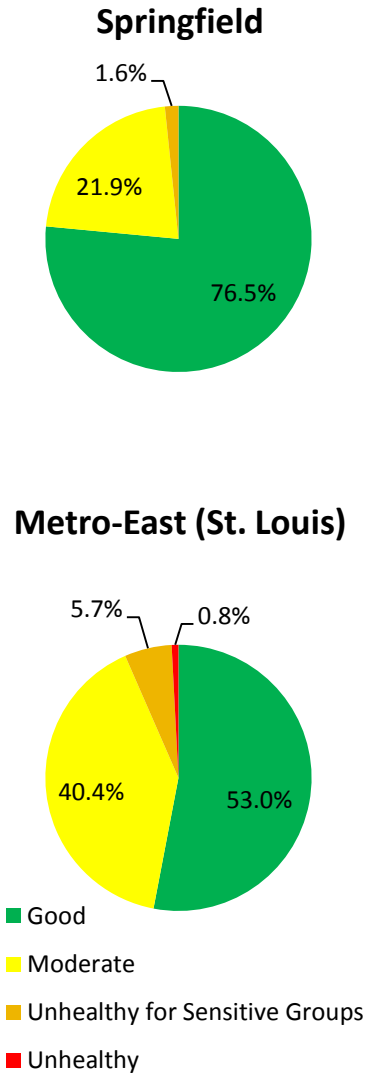


Figure 9: 2012 Air Quality Index Summaries by Sector



SECTION 4: STATEWIDE SUMMARY OF POINT SOURCE EMISSIONS

Since the late 1970s, the Illinois EPA's 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.

In March 1999, the Division introduced a new emission inventory system known as Illinois Stationary Source Inventory System (ISSIS). This new inventory system, which was developed in Oracle, built upon the structure of the annual emission reporting system (CAERS - Computerized Annual Emission Reporting System) previously developed. Up until then, inventory data resided both in EIS and CAERS. Data from EIS was loaded annually into CAERS. ISSIS did away with this requirement. Now inventory data resides in one database.

ISSIS currently includes emission data on approximately 6,500 active sources (including 1,900 Registration of Smaller Sources, ROSS) throughout the State. The ISSIS 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. Reported emissions and Agency calculated emissions are stored separately.

Also in March, 1999, the group responsible for the entry of emission inventory data was switched from the Permit Section to the Inventory Unit of the Compliance and Systems Management Section. The Inventory Unit, now in the Air Quality Planning Section, uses permit applications, the issued permit and data reported on annual emission reports to compile the inventory.

The following tables and graphs are an analysis of the emissions data contained in ISSIS at the end of 2012. It is important to note emissions contained in the ISSIS 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 Inventory Unit has been updating its estimated emissions to more accurately reflect the reported emissions.

To calculate the distribution of emissions for the individual categories, the source classification code (SCC) field was used from the ISSIS. The SCC is an eight digit code that breaks emission units into logical categories. SCCs are provided by the USEPA.

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

VOLATILE ORGANIC MATERIAL

Figure 10
Volatile Organic Material
Emission Trend (1000s of Tons/Year)

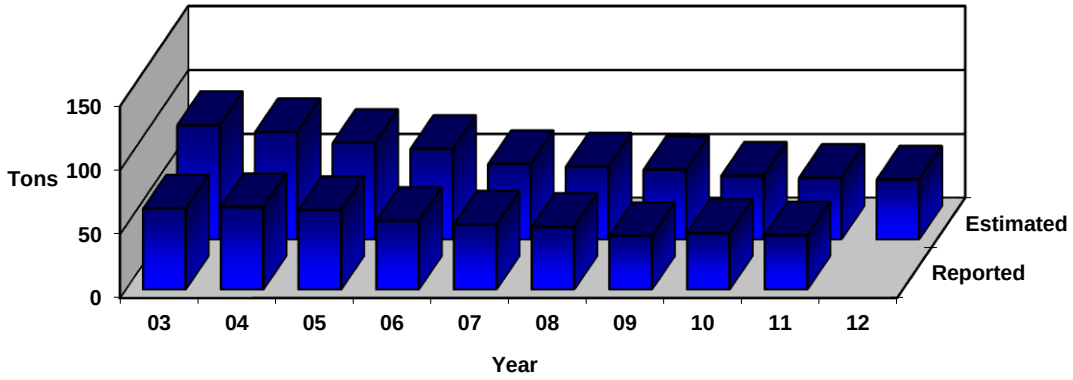


Table 5: Volatile Organic Material Emissions - 2012

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Food/Agriculture	10,209.9	21.74%	21.74%
Surface Coating Operations	6,892.8	14.68%	36.42%
Chemical Manufacturing	6,639.2	14.14%	50.56%
Fuel Combustion	3,877.7	8.26%	58.82%
Printing/Publishing	3,522.2	7.50%	66.32%
Petroleum Product Storage	2,706.9	5.76%	72.09%
Petroleum Industry	2,054.5	4.38%	76.46%
Rubber and Plastic Products	1,991.6	4.24%	80.70%
Mineral Products	1,494.1	3.18%	83.88%
Bulk Terminal/Plants	1,087.2	2.32%	86.20%
Secondary Metal Production	760.2	1.62%	87.82%
Organic Chemical Storage	742.6	1.58%	89.40%
Fabricated Metal Products	582.8	1.24%	90.64%
Primary Metal Production	527.3	1.12%	91.76%
Organic Solvent Use	495.0	1.05%	92.82%
Dry Cleaning (petroleum based)	462.1	0.98%	93.80%
All Other Categories	2,910.7	6.20%	100.00%

PM10

Figure 11
PM10 Emission Trend
(1000s of Tons/Year)

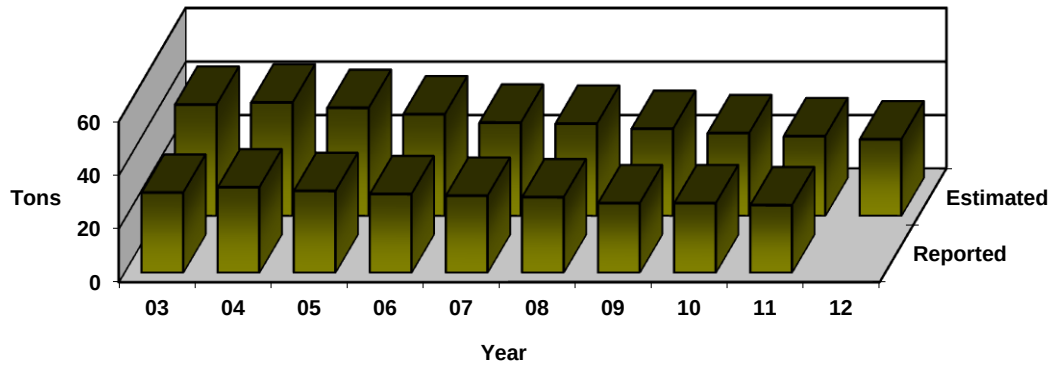


Table 6: Distribution of PM10 Emissions – 2012

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	10,764.5	37.61%	37.61%
Food/Agriculture	6,355.6	22.20%	59.81%
Mineral Products	5,052.2	17.65%	77.46%
Secondary Metal Production	1,232.5	4.31%	81.77%
Primary Metal Production	1,222.5	4.27%	86.04%
Petroleum Industry	1,007.8	3.52%	89.56%
Chemical Manufacturing	872.9	3.05%	92.61%
Solid Waste Disposal	576.9	2.02%	94.62%
Process Cooling	422.4	1.48%	96.10%
Fabricated Metal Products	227.5	0.79%	96.89%
All Other Categories	889.1	3.11%	100.00%

CARBON MONOXIDE

Figure 12
Carbon Monoxide Emission Trend (1000s of Tons/Year)

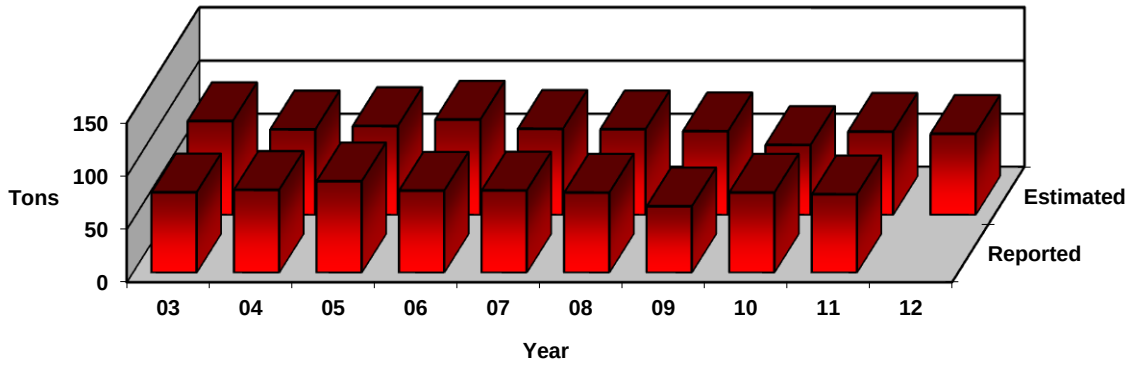


Table 7: Distribution of Carbon Monoxide Emissions - 2012

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	35,322.3	46.32%	46.32%
Primary Metal Production	21,723.5	28.49%	74.81%
Petroleum Industry	4,095.1	5.37%	80.18%
Food/Agriculture	2,857.8	3.75%	83.93%
Mineral Products	3,195.9	4.19%	88.12%
Secondary Metal Production	2,563.0	3.36%	91.48%
Solid Waste Disposal	2,526.0	3.31%	94.80%
Chemical Manufacturing	2,266.9	2.97%	97.76%
In-Process Fuel Use	506.2	0.66%	98.43%
Health Services	261.2	0.34%	98.77%
Fabricated Metal Products	224.4	0.29%	99.07%
Oil and Gas Production	219.2	0.29%	99.35%
All Other Categories	493.5	0.65%	100.00%

SULFUR DIOXIDE

Figure 13
Sulfur Dioxide Emission
Trend (1000s of Tons/Year)

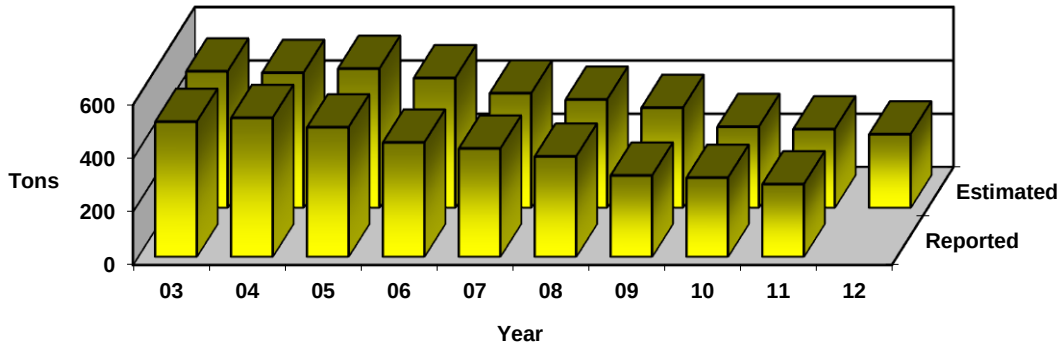


Table 8: Distribution of Sulfur Dioxide Emissions - 2012

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	250,917.3	90.78%	90.78%
Mineral Products	14,409.7	5.21%	95.99%
Petroleum Industry	3,119.6	1.13%	97.12%
Primary Metal Production	2,954.6	1.07%	98.19%
Chemical Manufacturing	1,440.5	0.52%	98.71%
Food/Agriculture	1,365.4	0.49%	99.20%
Solid Waste Disposal	1,215.2	0.44%	99.64%
All Other Categories	989.7	0.36%	100.00%

NITROGEN OXIDES

Figure 14
Nitrogen Oxide Emission
Trend (1000s of Tons/Year)

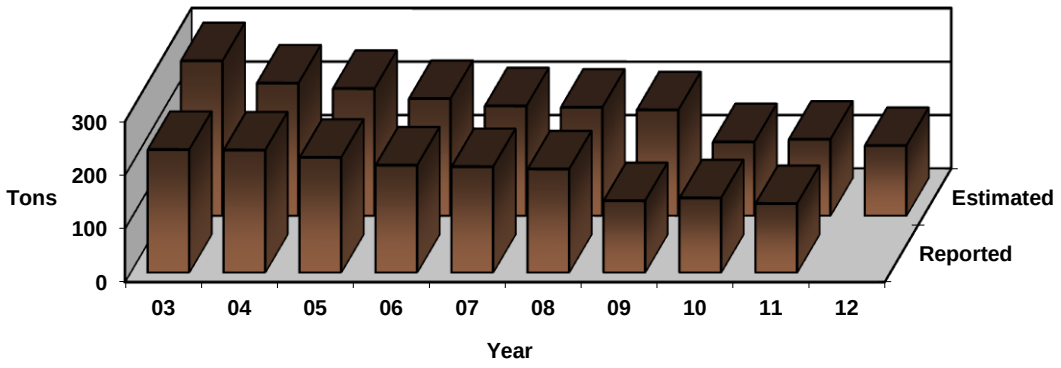


Table 9: Distribution of Nitrogen Oxide Emissions - 2012

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	108,517.2	82.63%	82.63%
Mineral Products	8,904.9	6.78%	89.41%
Petroleum Industry	5,373.0	4.09%	93.50%
Primary Metal Production	1,780.2	1.36%	94.86%
Food/Agriculture	1,415.5	1.08%	95.94%
Chemical Manufacturing	1,395.4	1.06%	97.00%
Solid Waste Disposal	818.0	0.62%	97.62%
Oil and Gas Production	800.4	0.61%	98.23%
In-Process Fuel Use	731.7	0.56%	98.79%
Secondary Metal Production	721.5	0.55%	99.34%
All Other Categories	868.2	0.66%	100.00%

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 I EPA and by cooperating local agencies. 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 A1**. This is the official noncontinuous sampling schedule used by the Illinois EPA during 2011.

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), five types of monitoring stations are used to collect ambient air data. These include State and Local Air Monitoring Stations (SLAMS), National Air Monitoring Stations (NAMS), Photochemical Assessment Monitoring Stations (PAMS), Special Purpose Monitoring Stations (SPMS), and National Core Monitoring Stations (NCore). 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 and NCORE designations for the sites operated within the State of Illinois are provided in the Annual Network Plan (epa.state.il.us/air/monitoring/index.html). All of the industrial sites are considered to be SPMS. **Table A2** is a summary of the distribution of pollutants through the years along with total number of instruments and total number of sites. The site directory is listed in **Table A3** and the monitoring directory is listed in **Table A4.**

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:

Table A1
2012 Noncontinuous Sampling Schedule

a. To measure expected maximum concentrations.

JANUARY						
S	M	T	W	R	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	R	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	R	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	R	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	R	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	R	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	R	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	R	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	R	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	R	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	R	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	R	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					

13 Every 6 Day Sampling Schedule 22 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. 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.

5. National Core Station (NCore) Network - NCore is a multi-pollutant network that integrates several advanced measurement systems. It is anticipated that each state operate at least one NCore site by 2011. In Illinois, Northbrook and Bondville are considered NCore sites. A few of the NCore network objectives are as follows:

a. Support for development of emission strategies and accountability of emission strategy progress through tracking long-term trends of pollutants and their precursors.

b. Support of long-term health assessments that contribute to review of national standards.

c. Support to scientific studies ranging across technological, health and atmospheric process disciplines.

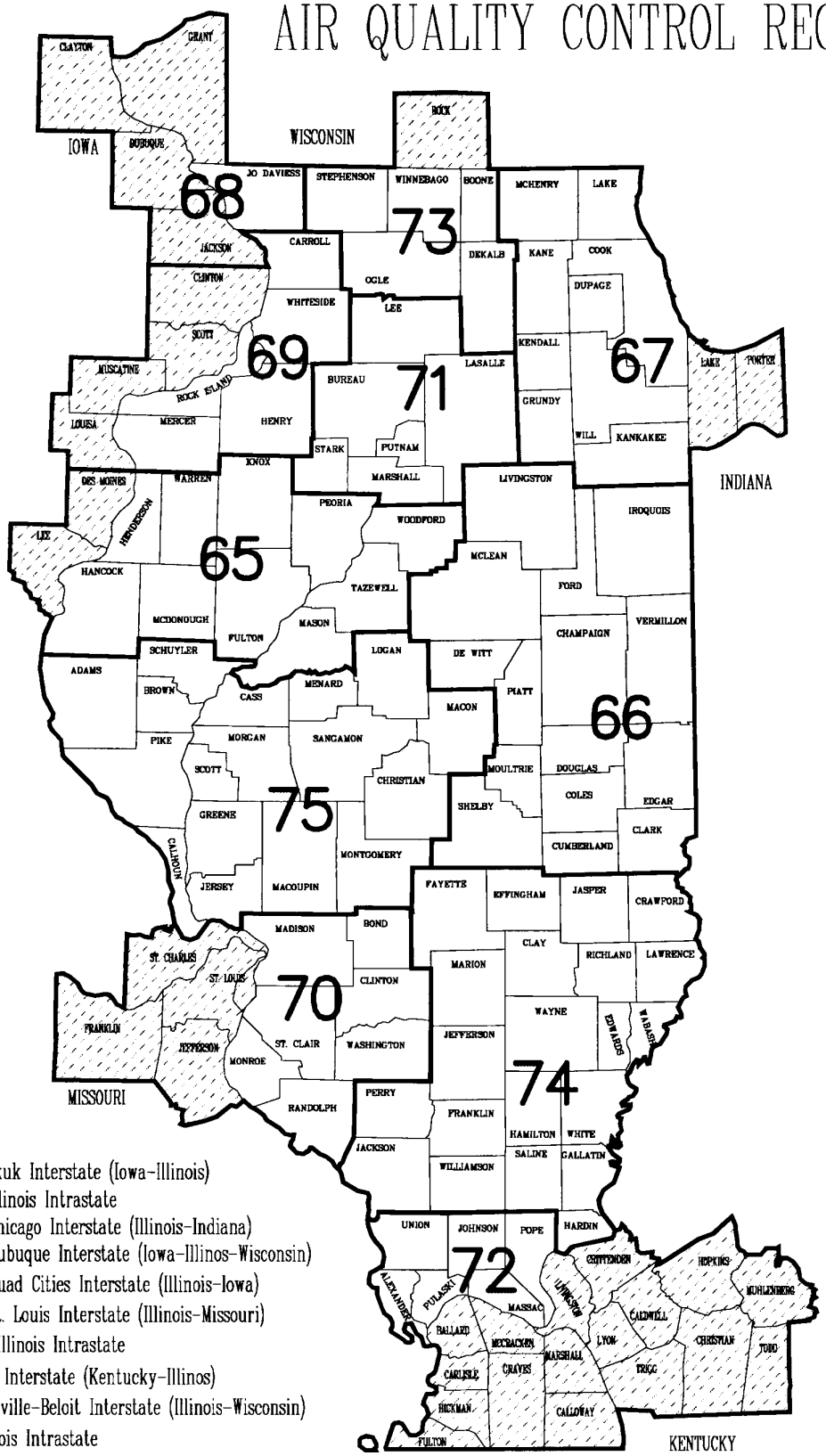
d. Support to ecosystem assessments recognizing that national air quality networks benefit ecosystems assessments.

Table A2
Distribution of Air Monitoring Instruments

	2012	2011	2010	2009	2008
Pariculate Matter ($PM_{2.5}$)	34	34	38	38	38
$PM_{2.5}$ Air Quality Index	12	12	13	13	13
$PM_{2.5}$ Speciation	5	5	5	5	5
Particulate Matter (PM_{10})	5	5	17	17	17
Total Suspended Particulates (TSP)	13	13	18	13	13
Lead	13	13	18	13	13
Continuous Mercury	0	1	1	1	1
Sulfur Dioxide	15	15	19	19	20
Nitrogen Dioxide	7	7	7	7	7
Ozone	38	34	36	36	36
Carbon Dioxide	1	1	1	1	1
Carbon Monoxide	9	9	9	9	9
Volatile Organice Compounds/Toxics	2	2	2	2	2
Wind Systems	17	17	18	18	18
Solar Radiation	2	2	9	9	9
Meteorology	3	3	3	3	4
Total Instruments	176	173	214	204	206
Total Sites	78	75	84	77	77

There were no sites discontinued in the monitoring network from 2011 to 2012. Four ozone sites operated by agencies other than Illinois EPA were added to the Site and Monitoring Directories as well as the data tables. These sites include Bondville, Stockton and Highland operated by USEPA and West Union operated by Indiana Department of Environmental Management. New monitoring sites and monitoring equipment is expected starting in 2013. Two new lead monitors are being planned in Riverdale and Geneva. Ozone will be added to the Schiller Park monitoring site with additional meteorological measurements. A continuous $PM_{2.5}$ monitor will be added to Bondville. A new near-roadway monitoring location measuring nitrogen dioxide will be installed in Chicago by 2014. A second near-roadway nitrogen dioxide monitor is anticipated the following year in Chicago. Carbon monoxide and $PM_{2.5}$ will also be added to a near-road location in future years.

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

Statewide Air Monitoring Site Locations - 2012

See the 2012 Site Directory (Table A3) for additional information.

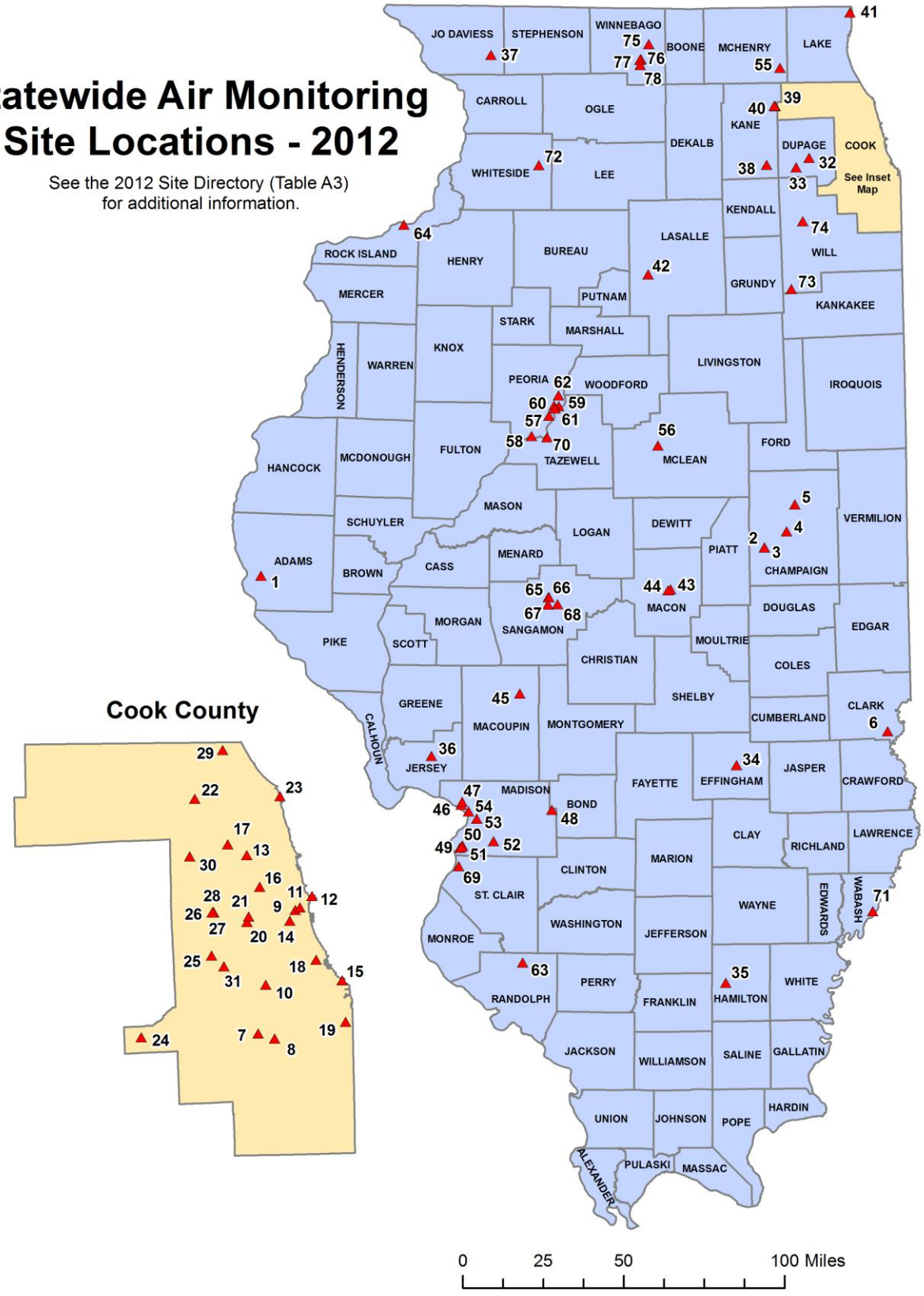


Table A3
2012 Site Directory

Site Map ID	AQS ID	County	City	Address	MSA / Area Represented	Latitude Longitude	Owner / Operator
1	17-001-0007	Adams	Quincy	John Wood Comm. College 1301 South 48th St.	Quincy, IL-MO	+39.91540937 -91.33586832	IL EPA
2	17-019-1001	Champaign	Bondville	State Water Survey Township Rd. 500 E.	Champaign-Urbana, IL	+40.05224171 -88.37254916	IL EPA & State Water Survey
3	17-019-9991	Champaign	Bondville	1173 County Rd. 500 E.	Champaign-Urbana, IL	+40.0518 -88.3723	US EPA
4	17-019-0006	Champaign	Champaign	Ameren Substation 904 N. Walnut	Champaign-Urbana, IL	+40.1237962 -88.229531	IL EPA
5	17-019-0007	Champaign	Thomasboro	North Thomas St.	Champaign-Urbana, IL	+40.244913 -88.188519	IL EPA
6	17-023-0001	Clark	West Union	416 S. State Highway 1 & West Union	Non-MSA County	+39.210883 -87.668416	Indiana Dept. of Environmental Management
7	17-031-0001	Cook	Alsip	Village Garage 4500 W. 123rd St.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.6709919 -87.7324569	Cook County Dept. of Environmental Control
8	17-031-2001	Cook	Blue Island	Eisenhower High School 12700 Sacramento	Chicago-Naperville-Michigan City, IL-IN-WI	+41.66210943 -87.69646652	Cook County Dept. of Environmental Control
9	17-031-0026	Cook	Chicago	Cermak Pump Station 735 W. Harrison	Chicago-Naperville-Michigan City, IL-IN-WI	+41.87372041 -87.64532569	Cook County Dept. of Environmental Control
10	17-031-0076	Cook	Chicago	Com Ed Maintenance Bldg. 7801 Lawndale	Chicago-Naperville-Michigan City, IL-IN-WI	+41.75139998 -87.71348815	Cook County Dept. of Environmental Control
11	17-031-0063	Cook	Chicago	CTA Building 320 S. Franklin	Chicago-Naperville-Michigan City, IL-IN-WI	+41.877628 -87.635027	IL EPA
12	17-031-0072	Cook	Chicago	Jardine Water Plant 1000 E. Ohio	Chicago-Naperville-Michigan City, IL-IN-WI	+41.89581227 -87.60768329	IL EPA
13	17-031-0052	Cook	Chicago	Mayfair Pump Station 4850 Wilson Ave.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.96548483 -87.74992806	Cook County Dept. of Environmental Control
14	17-031-0110	Cook	Chicago	Perez Elementary School 1241 19th St.	H.G. Kramer	+41.855771 -87.657932	Cook County Dept. of Environmental Control
15	17-031-0032	Cook	Chicago	South Water Filtration Plant 3300 E. Cheltenham Pl.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.75583241 -87.54534967	Cook County Dept. of Environmental Control
16	17-031-0057	Cook	Chicago	Springfield Pump Station 1745 N. Springfield Ave.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.912526 -87.722667	Cook County Dept. of Environmental Control

Table A3
2012 Site Directory

Site Map ID	AQS ID	County	City	Address	MSA / Area Represented	Latitude Longitude	Owner / Operator
17	17-031-1003	Cook	Chicago	Taft High School 6545 W. Hurlbut St	Chicago-Naperville-Michigan City, IL-IN-WI	+41.98433233 -87.7920017	Cook County Dept. of Environmental Control
18	17-031-0064	Cook	Chicago	University of Chicago 5720 S. Ellis Ave.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.79078688 -87.60164649	Cook County Dept. of Environmental Control
19	17-031-0022	Cook	Chicago	Washington High School 3535 E. 114th St.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.68716544 -87.53931548	Cook County Dept. of Environmental Control
20	17-031-4002	Cook	Cicero	Cook County Trailer 1820 S. 51st Ave	Chicago-Naperville-Michigan City, IL-IN-WI	+41.85524313 -87.7524697	Cook County Dept. of Environmental Control
21	17-031-6005	Cook	Cicero	Liberty School 13th St. & 50th Ave.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.86442642 -87.74890238	Cook County Dept. of Environmental Control
22	17-031-4007	Cook	Des Plaines	Regional Office Building 9511 W. Harrison St	Chicago-Naperville-Michigan City, IL-IN-WI	+42.06028469 -87.86322543	IL EPA
23	17-031-7002	Cook	Evanston	Water Pumping Station 531 E. Lincoln	Chicago-Naperville-Michigan City, IL-IN-WI	+42.06185724 -87.67416716	IL EPA
24	17-031-1601	Cook	Lemont	Cook County Trailer 729 Houston	Chicago-Naperville-Michigan City, IL-IN-WI	+41.66812034 -87.99056969	Cook County Dept. of Environmental Control
25	17-031-1016	Cook	Lyons Township	Village Hall 50th St & Glencoe	Chicago-Naperville-Michigan City, IL-IN-WI	+41.80116701 -87.8319447	IL EPA
26	17-031-6003	Cook	Maywood	4th District Court Building 1500 Maybrook Dr.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.87220158 -87.8261648	Cook County Dept. of Environmental Control
27	17-031-6006	Cook	Maywood	4th District Court Building 1500 Maybrook Dr.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.8728972 -87.82587249	Cook County Dept. of Environmental Control
28	17-031-6004	Cook	Maywood	Com Ed Maintenance 1505 S. First Ave	Chicago-Naperville-Michigan City, IL-IN-WI	+41.87211684 -87.82908025	Cook County Dept. of Environmental Control
29	17-031-4201	Cook	Northbrook	Northbrook Water Plant 750 Dundee Rd.	Chicago-Naperville-Michigan City, IL-IN-WI	+42.13999619 -87.79922692	IL EPA
30	17-031-3103	Cook	Schiller Park	IEPA Trailer 4743 Mannheim Rd.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.96519348 -87.87626473	IL EPA
31	17-031-3301	Cook	Summit	Graves Elementary School 60th St. & 74th Ave.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.78276601 -87.80537679	Cook County Dept. of Environmental Control
32	17-043-6001	DuPage	Lisle	Morton Arboretum Route 53	Chicago-Naperville-Michigan City, IL-IN-WI	+41.81304939 -88.0728269	IL EPA

Table A3
2012 Site Directory

Site Map ID	AQS ID	County	City	Address	MSA / Area Represented	Latitude Longitude	Owner / Operator
33	17-043-4002	DuPage	Naperville	City Hall 400 S. Eagle St.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.77107094 -88.15253365	IL EPA
34	17-049-1001	Effingham	Effingham	Central Junior High School Route 45 South	Effingham, IL	+39.06715932 -88.54893401	IL EPA
35	17-065-0002	Hamilton	Knight Prairie	Ten Mile Creek DNR Office State Route 14	Mt. Vernon, IL	+38.08215516 -88.6249434	IL EPA
36	17-083-1001	Jerseyville	Jerseyville	Illini Junior High School Liberty St. & County Rd.	St. Louis, MO-IL	+39.11053947 -90.32407986	IL EPA
37	17-085-9991	Jo Daviess	Stockton	10952 E. Parker Rd.	Non-MSA County	+42.2869 -89.9997	US EPA
38	17-089-0007	Kane	Aurora	Health Department 1240 N. Highland	Chicago-Naperville-Michigan City, IL-IN-WI	+41.78471651 -88.32937361	IL EPA
39	17-089-0005	Kane	Elgin	Larsen Junior High School 665 Dundee Rd.	Chicago-Naperville-Michigan City, IL-IN-WI	+42.04914776 -88.27302929	IL EPA
40	17-089-0003	Kane	Elgin	McKinley School 258 Lovell St.	Chicago-Naperville-Michigan City, IL-IN-WI	+42.050403 -88.28001471	IL EPA
41	17-097-1007	Lake	Zion	Camp Logan Illinois Beach State Park	Chicago-Naperville-Michigan City, IL-IN-WI	+42.4675733 -87.81004705	IL EPA
42	17-099-0007	La Salle	Oglesby	308 Portland Ave.	Ottawa-Streator, IL	+41.29301454 -89.04942498	IL EPA
43	17-115-0013	Macon	Decatur	IEPA Trailer 2200 N. 22nd	Decatur, IL	+39.866933 -88.925452	IL EPA
44	17-115-0110	Macon	Decatur	Mueller 1226 E. Garfield	Mueller	+39.862576 -88.940748	IL EPA
45	17-117-0002	Macoupin	Nilwood	IEPA Trailer Heaton & Dubois	St. Louis, MO-IL	+39.39607533 -89.80973892	IL EPA
46	17-119-0008	Madison	Alton	Clara Barton School 409 Main St.	St. Louis, MO-IL	+38.89018605 -90.14803114	IL EPA
47	17-119-2009	Madison	Alton	SIU Dental Clinic 1700 Annex St.	St. Louis, MO-IL	+38.90308534 -90.14316803	IL EPA
48	17-119-9991	Madison	Highland	5403 State Rd. 160	St. Louis, MO-IL	+38.8690 -89.6228	US EPA
49	17-119-0010	Madison	Granite City	Air Products 15th & Madison	St. Louis, MO-IL	+38.69443831 -90.15395426	IL EPA
50	17-119-1007	Madison	Granite City	Fire Station #1 23rd & Madison	St. Louis, MO-IL	+38.70453426 -90.13967484	IL EPA
51	17-119-0024	Madison	Granite City	Gateway Medical Center 2100 Madison Ave.	St. Louis, MO-IL	+38.7006315 -90.14476267	IL EPA

Table A3
2012 Site Directory

Site Map ID	AQS ID	County	City	Address	MSA / Area Represented	Latitude Longitude	Owner / Operator
52	17-119-1009	Madison	Maryville	Southwest Cable TV 200 W. Division	St. Louis, MO-IL	+38.72657262 -89.95996251	IL EPA
53	17-119-1010	Madison	South Roxana	South Roxana Elementary School Michigan St.	St. Louis, MO-IL	+38.82830334 -90.05843262	IL EPA
54	17-119-3007	Madison	Wood River	Water Treatment Plant 54 N. Walcott	St. Louis, MO-IL	+38.86066947 -90.10585111	IL EPA
55	17-111-0001	McHenry	Cary	Cary Grove High School 1st St. & Three Oaks Rd.	Chicago-Naperville-Michigan City, IL-IN-WI	+42.22144166 -88.24220734	IL EPA
56	17-113-2003	McLean	Normal	ISU Physical Plant Main & Gregory	Bloomington-Normal, IL	+40.51873537 -88.99689571	IL EPA
57	17-143-0110	Peoria	Bartonville	Pump Station Sanitation Rd.	Keystone Steel & Wire	+40.653703 -89.643375	IL EPA
58	17-143-0210	Peoria	Mapleton	Residential 9725 W. Wheeler Rd.	Caterpillar-Mapleton Plant	+40.562633 -89.747114	IL EPA
59	17-143-0037	Peoria	Peoria	City Office Building 613 N.E. Jefferson	Peoria, IL	+40.697007 -89.58473722	IL EPA
60	17-143-0036	Peoria	Peoria	Commercial Building 1005 N. University	Peoria, IL	+40.70007197 -89.61341375	IL EPA
61	17-143-0024	Peoria	Peoria	Fire Station #8 MacArthur & Hurlburt	Peoria, IL	+40.68742038 -89.60694277	IL EPA
62	17-143-1001	Peoria	Peoria Heights	Peoria Heights High School 508 E. Glen Ave.	Peoria, IL	+40.74550393 -89.58586902	IL EPA
63	17-157-0001	Randolph	Houston	IEPA Trailer Hickory Grove & Fallview	Houston, IL	+38.17627761 -89.78845862	IL EPA
64	17-161-3002	Rock Island	Rock Island	Rock Island Arsenal 32 Rodman Ave.	Davenport-Moline-Rock Island, IA-IL	+41.51472697 -90.51735026	IL EPA
65	17-167-0012	Sangamon	Springfield	Agricultural Building State Fair Grounds	Springfield, IL	+39.83192087 -89.64416359	IL EPA
66	17-167-0014	Sangamon	Springfield	Illinois Building State Fair Grounds	Springfield, IL	+39.831522 -89.640926	IL EPA
67	17-167-0008	Sangamon	Springfield	Federal Building 6th St. & Monroe	Springfield, IL	+39.7993092 -89.64760789	IL EPA
68	17-167-0006	Sangamon	Springfield	Sewage Treatment Plant 3300 Mechanicsburg Rd.	Springfield, IL	+39.80061377 -89.59122532	IL EPA

Table A3
2012 Site Directory

Site Map ID	AQS ID	County	City	Address	MSA / Area Represented	Latitude Longitude	Owner / Operator
69	17-163-0010	St. Clair	East St. Louis	RAPS Trailer 13th & Tudor	St. Louis, MO-IL	+38.61203448 -90.16047663	IL EPA
70	17-179-0004	Tazewell	Pekin	Fire Station #3 272 Derby	Peoria, IL	+40.55643203 -89.65402083	IL EPA
71	17-185-0001	Wabash	Mount Carmel	Division St.	Gibson County, IN-Mt. Carmel, IL	+38.397276 -87.773631	Indiana Dept. of Environmental Management
72	17-195-0110	Whiteside	Sterling	Sauk Medical Clinic 705 West 3rd St.	Sterling Steal Co.	+41.788383 -89.706728	IL EPA
73	17-197-1011	Will	Braidwood	Com Ed Training Center 36400 S. Essex Rd.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.22153707 -88.19096718	IL EPA
74	17-197-1002	Will	Joliet	Pershing Elementary School Midland & Campbell Sts.	Chicago-Naperville-Michigan City, IL-IN-WI	+41.52688509 -88.11647381	IL EPA
75	17-201-2001	Winnebago	Loves Park	Maple Elementary School 1405 Maple Ave.	Rockford, IL	+42.33498222 -89.0377748	IL EPA
76	17-201-0011	Winnebago	Rockford	City Hall 425 E. State	Rockford, IL	+42.26767353 -89.08785092	IL EPA
77	17-201-0013	Winnebago	Rockford	Health Department 201 Division St.	Rockford, IL	+42.26308105 -89.09276716	IL EPA
78	17-201-0110	Winnebago	Rockford	J. Rubin & Company 305 Peoples Ave.	Gunite Corporation	+42.240867 -89.091467	IL EPA

Table A4
2012 Monitoring Directory

AQS ID	City	CO	CO2	NO2	Ozone	PM10	PM2.5	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Wind System	Solar	Meteorological
17-001-0007	Quincy															
17-019-0006	Champaign N. Walnut															
17-019-0007	Thomasboro															
17-019-1001	Bondville															
17-019-9991	Bondville															
17-023-0001	West Union															
17-031-0001	Alsip															
17-031-0022	Chicago Washington High School					C										
17-031-0026	Chicago Cermak Pump Station															
17-031-0032	Chicago South Water Filtration															
17-031-0052	Chicago Mayfair Pump Station															
17-031-0057	Chicago Springfield Pump Station															
17-031-0063	Chicago CTA Building															
17-031-0064	Chicago University of Chicago															
17-031-0072	Chicago Jardine Water Plant			1,2												
17-031-0076	Chicago Com Ed Maintenance															
17-031-0110	Chicago Perez Elementary															
17-031-1003	Chicago Taft High School															
17-031-1016	Lyons Township					C										
17-031-1601	Lemont															
17-031-2001	Blue Island															
17-031-3103	Schiller Park															

Active Monitor | Site/Monitor Installed | Site/Monitor Removed

C = Continuous PM10
1 = Operates only during June, July and August
2 = Instrumentation problems in 2012, no data available

Table A4
2012 Monitoring Directory

AQS ID	City	CO	CO2	NO2	Ozone	PM10	PM2.5	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Wind System	Solar	Meteorological
17-031-3301	Summit						■									
17-031-4002	Cicero Cook County Trailer	■		■	■					■						
17-031-6005	Cicero Liberty School						■									
17-031-4007	Des Plaines				■		■									
17-031-4201	Northbrook	T		■	■	■	■	■	■	T	■	■	■	■	■	■
17-031-6003	Maywood 4th District Court												■			
17-031-6004	Maywood Com Ed Maintenance	■														
17-031-6006	Maywood 4th District Court							■								
17-031-7002	Evanston				■									■		
17-043-4002	Naperville						■	■	■							
17-043-6001	Lisle				■									■		
17-049-1001	Effingham				■											
17-065-0002	Knight Prairie				■		■							■		
17-083-1001	Jerseyville				■		■									
17-085-9991	Stockton				■											
17-089-0003	Elgin McKinley School						■									
17-089-0005	Elgin Larsen Jr. High School				■											
17-089-0007	Aurora						■									
17-097-1007	Zion				■									■		■
17-099-0007	Oglesby							■		■				■		
17-111-0001	Cary				■		■	■								
17-113-2003	Normal				■		■									
17-115-0013	Decatur IEPA Trailer				■		■	■		■				■		

Active Monitor	Site/Monitor Installed	Site/Monitor Removed	T = Trace level monitor

Table A4
2012 Monitoring Directory

AQS ID	City	CO	CO2	NO2	Ozone	PM10	PM2.5	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Wind System	Solar	Meteorological
17-115-0110	Decatur Mueller												■			
17-117-0002	Nilwood		■		■					■				■		
17-119-0008	Alton Clara Barton Elementary				■											
17-119-2009	Alton SIU Dental Clinic						■									
17-119-0010	Granite City Air Products					■							■			
17-119-0024	Granite City Gateway Medical Center						■		■							
17-119-1007	Granite City Fire Station #1					C,2	■	■								
17-119-1009	Maryville				■											
17-119-1010	South Roxana									■						
17-119-3007	Wood River				■		■			■						
17-119-9991	Highland				■											
17-143-0024	Peoria Fire Station #8				■					■						
17-143-0036	Peoria Commercial Building	■														
17-143-0037	Peoria City Office Building						■	■						■		
17-143-0110	Bartonville												■			
17-143-0210	Mapleton												■			
17-143-1001	Peoria Heights				■											
17-157-0001	Houston				■		■			■						
17-161-3002	Rock Island				■		■							■		
17-163-0010	East St. Louis	■		■	■		■	■		■				■		
17-167-0006	Springfield Sewage Treatment Plant									■						
17-167-0008	Springfield Federal Building	■														
17-167-0012	Springfield Agricultural Building						■									

Active Monitor	Site/Monitor Installed	Site/Monitor Removed	C = Continuous PM10 2 = Instrumentation problems in 2012, no data available

Table A4
2012 Monitoring Directory

AQS ID	City	CO	CO2	NO2	Ozone	PM10	PM2.5	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Wind System	Solar	Meteorological
17-167-0014	Springfield Illinois Building				■											
17-179-0004	Pekin									■						
17-185-0001	Mount Carmel									■						
17-195-0110	Sterling												■			
17-197-1002	Joliet Pershing Elementary						■									
17-197-1011	Braidwood				■		■									
17-201-0011	Rockford City Hall	■														
17-201-0013	Rockford Health Department						■									
17-201-0110	Rockford J. Rubin & Company												■			
17-201-2001	Loves Park				■									■		

Active Monitor	Site/Monitor Installed	Site/Monitor Removed

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.

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 2012. 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, forward running averages are computed for each hour which includes the next seven hours as well. A valid 8-hour average has at least 6 valid 1-hour averages within the 8-hour period. 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 year 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.

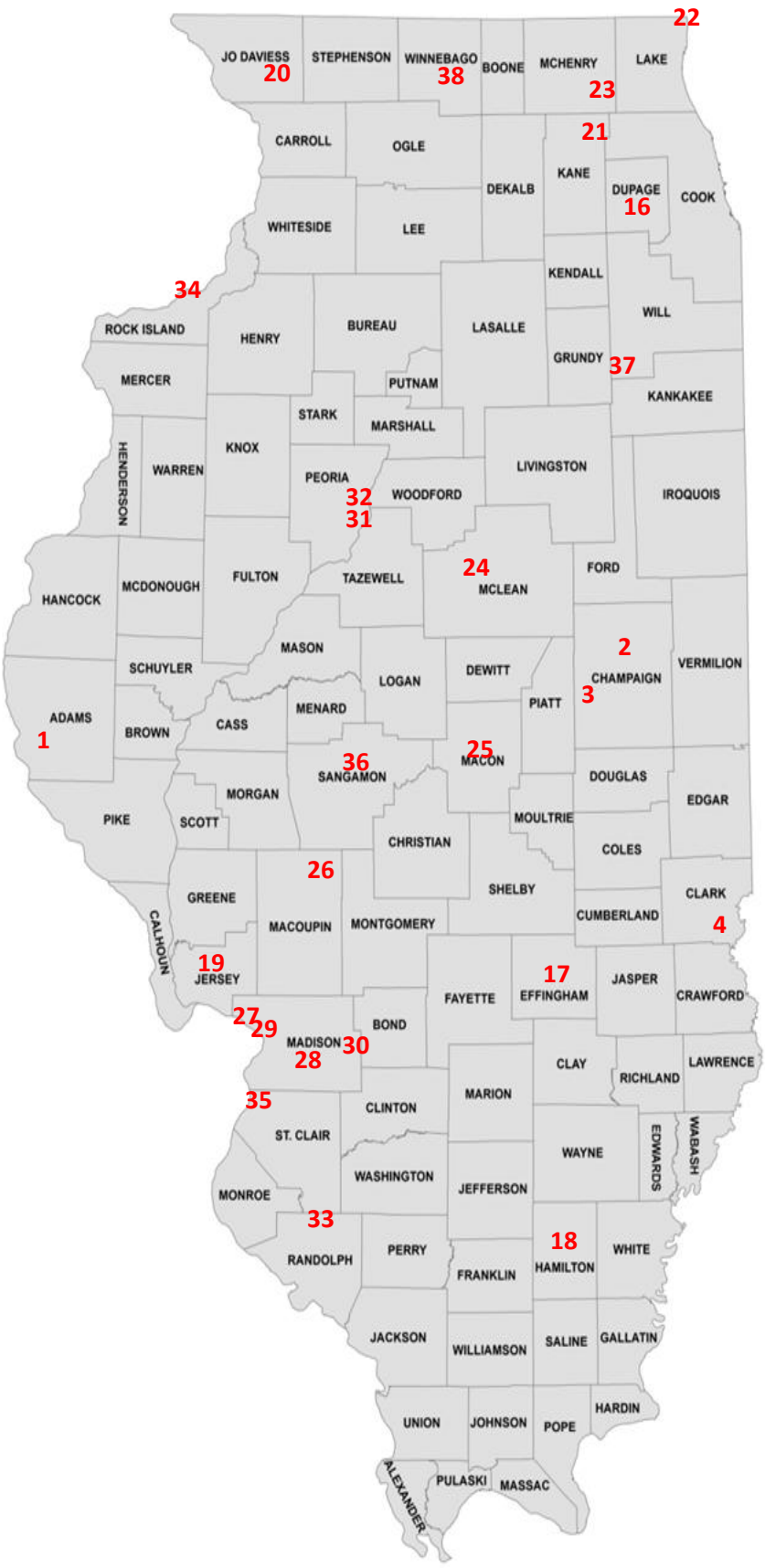
For summary purposes, the data is expressed in the number of figures to which the raw data is validated. Extra figures may be carried in the averaging technique, but the result is rounded to the appropriate number of figures. For example, the values 9, 9, 10 are averaged to give 9; whereas the values 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.

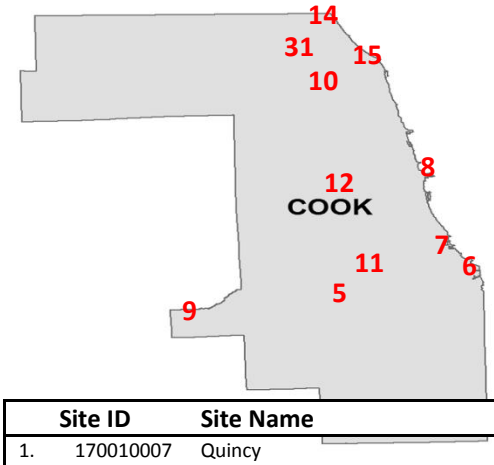
In comparing data to the various air quality standards, the data are implicitly rounded to the number of significant figures specified by that standard. For example, to exceed the 0.12 ppm hourly ozone standard, an hourly value must be 0.125 ppm or higher, to exceed the 9 ppm CO 8-hour standard, an 8-hour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

The National Ambient Air Quality Standard (NAAQS) for carbon monoxide (CO) has a short-term standard for ambient air concentrations not to be exceeded more than once per year. Sulfur dioxide (SO_2) has a 1-hour standard which is the 3-year average of each year's 99^{th} percentile values. Nitrogen dioxide (NO_2) has a 1-hour standard which is the 3-year average of each year's 98^{th} percentile values. 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 2012. 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.

2012 Ozone Monitoring Sites





	Site ID	Site Name
1.	170010007	Quincy
2.	170190007	Thomasboro
3.	170199991	Bondville
4.	170230001	West Union
5.	170310001	Alsip
6.	170310032	Chicago – South Water Filtration Plant
7.	170310064	Chicago – University of Chicago
8.	170310072	Chicago – Jardine Water Plant
9.	170310076	Chicago – Com Ed Maintenance Bldg.
10.	170311003	Chicago – Taft High School
11.	170311601	Lemont
12.	170314002	Cicero
13.	170314007	Des Plaines
14.	170314201	Northbrook
15.	170317002	Evanston
16.	170436001	Lisle
17.	170491001	Effingham
18.	170650002	Knight Prairie
19.	170831001	Jerseyville
20.	170859991	Stockton
21.	170890005	Elgin
22.	170971007	Zion
23.	171110001	Cary
24.	171132003	Normal
25.	171150013	Decatur
26.	171170002	Nilwood
27.	171190008	Alton
28.	171191009	Maryville
29.	171193007	Wood River
30	171199991	Highland
31.	171430024	Peoria
32.	171431001	Peoria Heights
33.	171570001	Houston
34.	171613002	Rock Island
35.	171630010	East St. Louis
36.	171670014	Springfield
37.	171971011	Braidwood
38.	172012001	Loves Park

Table B1
2012 1-Hour Ozone Exceedances

EXCEEDANCES OF THE FORMER 1-HOUR PRIMARY STANDARD OF 0.12 PPM		
Date	**City**	**Concentration**
7/6	Chicago – South Water Filtration	0.128
	Evanston	0.129
	Zion	0.138
7/31	Maryville	0.125
Total Over 0.12 ppm	4	
Total Days Over 0.12 ppm	2	

Table B2
2012 8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.075 PPM						
Date	**City**	**Concentration**		**Date**	**City**	**Concentration**
5/18	Alton	0.081		6/14	Wood River	0.083
	Houston	0.077		6/15	Alsip	0.086
	Jerseyville	0.089			Alton	0.076
	Maryville	0.078			Braidwood	0.076
	Nilwood	0.077			Cary	0.096
	Normal	0.079			Chicago – Com Ed Maintenance	0.081
	Peoria Heights	0.079			Chicago – Jardine Water Plant	0.080
	Wood River	0.080			Chicago – South Water Plant	0.083
5/19	Alsip	0.077			Chicago – Taft High School	0.084
	Chicago – Com Ed Maintenance	0.076			Chicago – University of Chicago	0.081
	Chicago – Jardine Water Plant	0.084			Cicero	0.081
	Chicago – South Water Filtration	0.084			Des Plaines	0.085
	Chicago – University of Chicago	0.081			Elgin	0.087
	Evanston	0.093			Evanston	0.090
	Lemont	0.081			Houston	0.080
	Normal	0.080			Jerseyville	0.085
	Northbrook	0.085			Lemont	0.086
	Zion	0.092			Lisle	0.078
5/23	Houston	0.078			Maryville	0.078
5/24	Chicago – Jardine	0.076			Normal	0.079
	Evanston	0.077			Northbrook	0.094
	Zion	0.081			Peoria Heights	0.078
5/27	Evanston	0.078			Springfield	0.076
	Zion	0.083			Thomasboro	0.078
5/29	East St. Louis	0.082			Wood River	0.077
6/8	Jerseyville	0.080			Zion	0.096
	Zion	0.080		6/23	Lemont	0.078
6/9	Evanston	0.076		6/24	Alsip	0.079
	Jerseyville	0.076			Alton	0.084
	Lemont	0.078			Chicago – Com Ed Maintenance	0.079
	Northbrook	0.078			Chicago – South Water Filtration	0.082
	Zion	0.082			Chicago – University of Chicago	0.080
6/10	Zion	0.082			Cicero	0.080
6/14	Alton	0.081			East St. Louis	0.076
	East St. Louis	0.079			Evanston	0.085
	Houston	0.079			Jerseyville	0.095
	Jerseyville	0.089			Lemont	0.077
	Knight Prairie	0.077			Northbrook	0.081
	Maryville	0.079			Wood River	0.082
	Peoria Heights	0.076			Zion	0.080
	Quincy	0.086		6/27	Alton	0.093

Table B2
2012 8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.075 PPM						
Date	**City**	**Concentration**		**Date**	**City**	**Concentration**
6/27	East St. Louis	0.081		6/30	Northbrook	0.090
	Houston	0.086			Wood River	0.082
	Jerseyville	0.107			Zion	0.089
	Maryville	0.082		7/2	Alton	0.093
	Northbrook	0.077			Chicago – Jardine Water Plant	0.079
	Peoria Heights	0.082			Chicago – South Water Plant	0.086
	Springfield	0.081			Evanston	0.097
	Wood River	0.091			Northbrook	0.087
	Zion	0.079			Peoria Heights	0.076
6/28	Alsip	0.087			Springfield	0.076
	Alton	0.081			Wood River	0.086
	Cary	0.077			Zion	0.090
	Chicago – Com Ed Maintenance	0.083		7/3	Evanston	0.078
	Chicago – Jardine Water Plant	0.092		7/5	Chicago – South Water Plant	0.079
	Chicago – South Water Plant	0.098		7/6	Chicago – Com Ed Maintenance	0.084
	Chicago – University of Chicago	0.081			Chicago – Jardine Water Plant	0.090
	Cicero	0.084			Chicago – South Water Plant	0.103
	Decatur	0.077			Chicago – Taft High School	0.083
	East St. Louis	0.078			Chicago – University of Chicago	0.096
	Effingham	0.092			Cicero	0.100
	Houston	0.081			Northbrook	0.087
	Knight Prairie	0.086			Zion	0.093
	Lemont	0.089		7/7	East St. Louis	0.092
	Maryville	0.095			Knight Prairie	0.080
	Normal	0.080			Wood River	0.084
	Northbrook	0.084		7/8	East St. Louis	0.079
	Quincy	0.081			Houston	0.076
	Springfield	0.079		7/11	Knight Prairie	0.087
	Thomasboro	0.081		7/12	Alsip	0.076
	Wood River	0.081			Alton	0.078
	Zion	0.0.88			Cary	0.080
6/29	Alton	0.089			Chicago – Jardine Water Plant	0.079
	Decatur	0.078			Chicago – South Water Plant	0.076
	East St. Louis	0.086			Elgin	0.076
	Houston	0.090			Evanston	0.077
	Jerseyville	0.080			Jerseyville	0.077
	Knight Prairie	0.091			Northbrook	0.080
	Maryville	0.100			Springfield	0.076
	Wood River	0.091			Wood River	0.077
6/30	Alton	0.078			Zion	0.081
	Evanston	0.090		7/15	Chicago – South Water Plant	0.077

Table B2
2012 8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.075 PPM						
Date	**City**	**Concentration**		**Date**	**City**	**Concentration**
7/19	Knight Prairie	0.076		8/3	Elgin	0.093
7/21	Alsip	0.077			Evanston	0.085
	Chicago – Jardine Water Plant	0.078			Lemont	0.080
	Chicago – South Water Plant	0.080			Lisle	0.081
	Evanston	0.082			Northbrook	0.085
7/22	Jerseyville	0.082			Wood River	0.079
7/23	Chicago – Jardine Water Plant	0.079			Zion	0.080
	Cicero	0.076		8/6	East St. Louis	0.083
	Northbrook	0.077			Maryville	0.076
	Wood River	0.077		8/7	East St. Louis	0.076
7/24	East St. Louis	0.082			Houston	0.078
	Maryville	0.080			Jerseyville	0.096
	Springfield	0.077			Maryville	0.084
7/30	Northbrook	0.079			Wood River	0.098
	Zion	0.080		8/8	Houston	0.081
7/31	East St. Louis	0.091			Knight Prairie	0.085
	Houston	0.078			Maryville	0.077
	Knight Prairie	0.081		8/9	East St. Louis	0.078
	Maryville	0.097			Houston	0.077
	Wood River	0.083			Knight Prairie	0.078
8/1	East St. Louis	0.080			Maryville	0.081
	Houston	0.076		8/15	Jerseyville	0.082
8/2	Chicago – Com Ed Maintenance	0.079		8/23	East St. Louis	0.078
	Chicago – Jardine Water Plant	0.099			Jerseyville	0.085
	Chicago – South Water Plant	0.094			Knight Prairie	0.078
	Chicago – Taft High School	0.086			Maryville	0.076
	Chicago – University of Chicago	0.092			Normal	0.076
	Cicero	0.083			Peoria Heights	0.077
	Decatur	0.078			Wood River	0.087
	Des Plaines	0.081		8/24	Alsip	0.077
	Evanston	0.096			Chicago – Jardine Water Plant	0.085
	Northbrook	0.092			Chicago – South Water Plant	0.081
	Zion	0.079			Cicero	0.076
8/3	Alsip	0.087			Decatur	0.076
	Cary	0.083			Des Plaines	0.076
	Chicago – Com Ed Maintenance	0.096			Effingham	0.077
	Chicago – Jardine Water Plant	0.091			Evanston	0.086
	Chicago – South Water Plant	0.091			Lemont	0.085
	Chicago – Taft High School	0.079			Maryville	0.079
	Chicago – University of Chicago	0.091			Normal	0.079
	Cicero	0.094			Northbrook	0.085

Table B2
2012 8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.075 PPM						
Date	**City**	**Concentration**		**Date**	**City**	**Concentration**
8/24	Peoria Heights	0.081				
	Wood River	0.079				
	Zion	0.095				
8/25	Chicago – Jardine Water Plant	0.090				
	Evanston	0.100				
	Northbrook	0.082				
	Zion	0.103				
8/30	Jerseyville	0.081				

Total Over 0.075 ppm	254
Total Days Over 0.075 ppm	45

Table B3
2012 Ozone Highs

AQS ID	City	Number Of Days 8hr Greater Than 0.075 ppm			4th Highest Samples 1hr (ppm)				4th Highest Samples 8hr (ppm)			
		2012	2011	2010								
17-001-0007	Quincy	2	0	1	95	91	91	78	86	81	75	75
17-019-0007	Thomasboro	2	4	-	85	81	80	79	81	78	75	75
17-019-9991	Bondville	4	3	-	88	87	83	82	81	80	77	77
17-023-0001	West Union	1	0	0	88	81	80	79	79	74	74	72
17-031-0001	Alsip	8	2	1	100	95	93	92	87	87	86	79
17-031-0032	Chicago South Water Filtration	13	4	1	128	121	117	104	103	98	94	91
17-031-0064	Chicago University of Chicago	7	3	1	110	97	96	96	96	92	91	81
17-031-0072	Chicago Jardine Water Plant	13	2	1	120	111	109	104	99	92	91	90
17-031-0076	Chicago Com Ed Maintenance	7	3	0	115	109	93	91	96	84	83	81
17-031-1003	Chicago Taft High School	4	1	1	100	96	93	86	86	84	83	79
17-031-1601	Lemont	8	1	3	97	95	93	93	89	86	85	81
17-031-4002	Cicero Cook County Trailer	8	1	0	124	108	92	91	100	94	84	83
17-031-4007	Des Plaines	3	1	0	97	96	95	83	85	81	76	73
17-031-4201	Northbrook	16	4	2	106	105	104	104	94	92	90	87
17-031-7002	Evanston	15	4	1	129	116	116	112	100	97	96	93
17-043-6001	Lisle	2	1	0	93	84	83	83	81	78	75	74
17-049-1001	Effingham	2	0	0	105	83	80	80	92	77	73	73
17-065-0002	Knight Prairie	10	3	2	95	95	93	91	91	87	86	85
17-083-1001	Jerseyville	14	4	0	124	123	109	103	107	96	95	89
17-085-9991	Stockton	2	0	-	84	82	82	81	79	78	75	75
17-089-0005	Elgin Larsen Jr. High School	3	1	1	103	97	89	84	93	87	76	75
17-097-1007	Zion	19	5	4	138	118	111	104	103	96	95	93
17-111-0001	Cary	4	1	0	114	89	82	79	96	82	80	77
17-113-2003	Normal	6	1	0	87	84	84	83	80	80	79	79
17-115-0013	Decatur IEPA Trailer	4	2	0	88	85	82	80	78	78	77	76

Table B3
2012 Ozone Highs

17-117-0002	Nilwood	1	3	1	92	82	79	79	77	74	74	74
17-119-0008	Alton Clara Barton School	10	4	13	120	105	95	93	93	93	89	84
17-119-1009	Maryville	14	6	3	125	116	101	98	100	97	95	84
17-119-3007	Wood River	17	8	1	116	106	105	105	98	91	91	87
17-119-9991	Highland	17	4	-	114	111	98	96	105	93	83	83
17-143-0024	Peoria Fire Station #8	0	1	0	75	73	73	72	69	67	65	65
17-143-1001	Peoria Heights	7	1	0	93	90	88	84	82	81	79	78
17-157-0001	Houston	13	0	0	96	95	94	93	90	86	81	81
17-161-3002	Rock Island	0	0	0	78	75	74	74	71	68	66	66
17-163-0010	East St. Louis	15	4	2	109	103	101	101	92	91	86	83
17-167-0014	Springfield	6	4	0	89	84	83	82	81	79	77	76
17-197-1011	Braidwood	1	1	0	80	76	74	74	76	73	71	71
17-201-2001	Loves Park	0	0	0	84	82	81	79	75	75	74	74
Statewide Average					103	96	92	89	89	84	82	79
Total Over 0.075 ppm		254	81	41								
Total Days Over 0.075 ppm		45	27	23								

Table B4
2012 Ozone Design Values

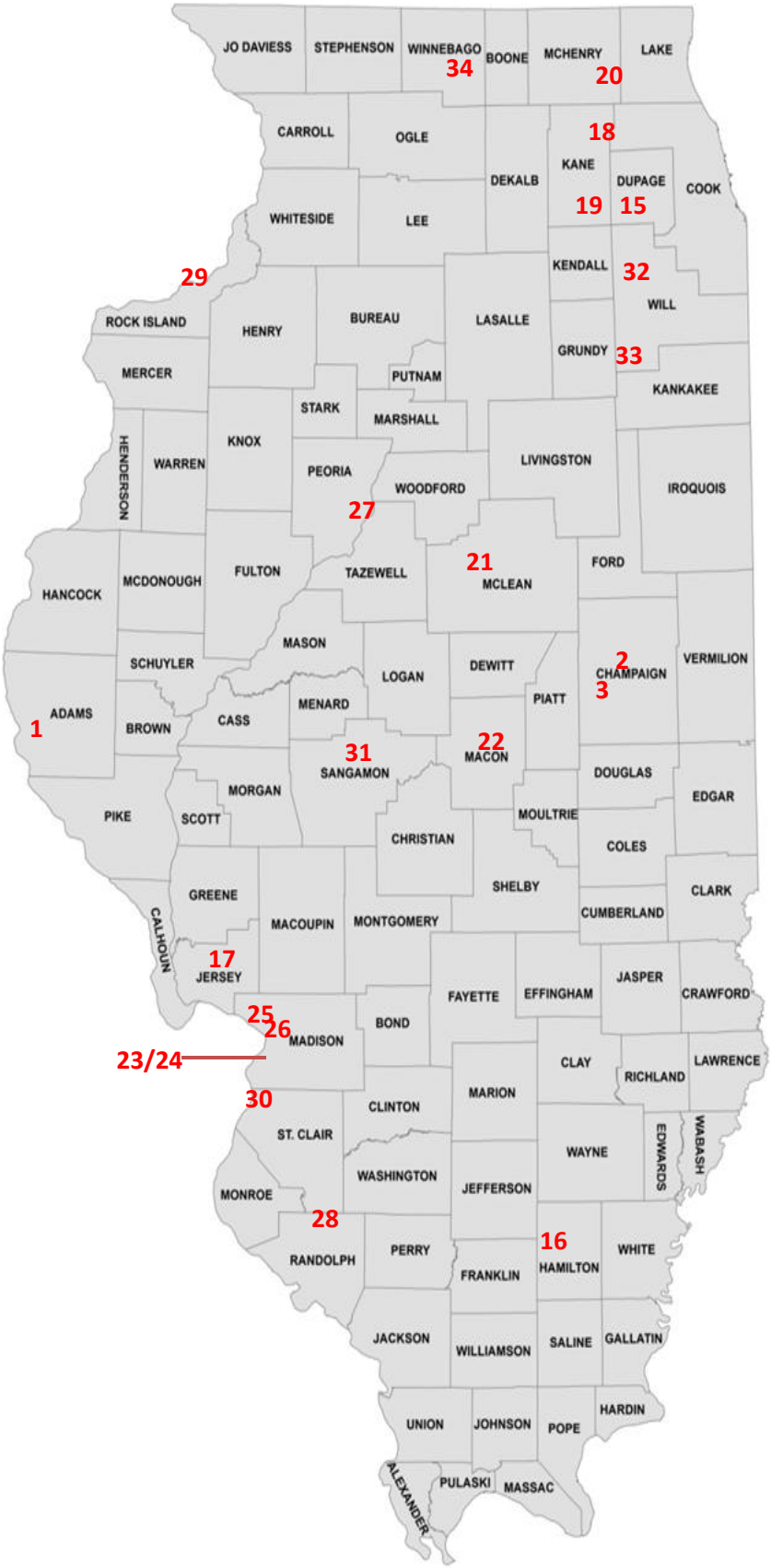
AQS ID	City	4th High 8-hour Concentrations (ppm)					Design Values* (ppm)		
		2012	2011	2010	2009	2008	2010-2012	2009-2011	2008-2010
17-001-0007	Quincy	0.075	0.066	0.067	0.061	0.065	0.069	0.064	0.064
17-019-0004	Champaign	-	-	-	0.065	0.060	-	-	0.062
17-019-0007	Thomasboro	0.075	0.076	-	-	-	-	-	-
17-019-9991	Bondville	0.077	0.074	-	-	-	-	-	-
17-023-0001	West Union	0.072	0.068	0.066	0.066	0.060	0.068	0.066	0.064
17-031-0001	Alsip	0.079	0.071	0.073	0.069	0.066	0.074	0.071	0.069
17-031-0032	Chicago South Water Filtration	0.091	0.079	0.074	0.065	0.067	**0.081**	0.072	0.068
17-031-0064	Chicago University of Chicago	0.081	0.074	0.071	0.060	0.063	0.075	0.068	0.064
17-031-0072	Chicago Jardine Water Plant	0.090	0.074	0.071	0.062	0.063	**0.078**	0.069	0.065
17-031-0076	Chicago Com Ed Maintenance	0.081	0.073	0.068	0.067	0.066	0.074	0.069	0.067
17-031-1003	Chicago Taft High School	0.079	0.067	0.070	0.064	0.064	0.072	0.067	0.066
17-031-1601	Lemont	0.081	0.069	0.073	0.067	0.071	0.074	0.069	0.070
17-031-4002	Cicero Cook County Trailer	0.083	0.072	0.068	0.067	0.060	0.074	0.069	0.065
17-031-4007	Des Plaines	0.073	0.065	0.064	0.057	0.057	0.067	0.062	0.059
17-031-4201	Northbrook	0.087	0.076	0.072	0.069	0.065	**0.078**	0.072	0.068
17-031-7002	Evanston	0.093	0.078	0.067	0.064	0.058	**0.079**	0.069	0.063
17-043-6001	Lisle	0.074	0.068	0.064	0.059	0.057	0.068	0.063	0.060
17-049-1001	Effingham	0.073	0.066	0.072	0.067	0.063	0.070	0.068	0.067
17-065-0002	Knight Prairie	0.085	0.074	0.075	0.064	0.066	**0.078**	0.071	0.068
17-083-1001	Jerseyville	0.089	0.076	0.072	0.068	0.069	**0.079**	0.072	0.069
17-085-9991	Stockton	0.075	0.064	-	-	-	-	-	-
17-089-0005	Elgin Larsen Jr. High School	0.075	0.070	0.069	0.068	0.061	0.071	0.069	0.066
17-097-1007	Zion	0.093	0.076	0.078	0.075	0.069	**0.082**	**0.076**	0.074
17-111-0001	Cary	0.077	0.071	0.065	0.066	0.065	0.071	0.067	0.065
17-113-2003	Normal	0.079	0.068	0.066	0.071	0.067	0.071	0.068	0.068

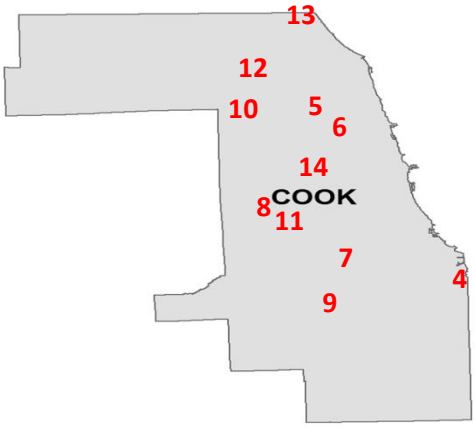
Table B4
2012 Ozone Design Values

17-115-0013	Decatur Illinois EPA Trailer	0.076	0.075	0.069	0.067	0.066	0.073	0.070	0.067
17-117-0002	Nilwood	0.074	0.075	0.071	0.064	0.065	0.073	0.070	0.066
17-119-0008	Alton Clara Barton Elementary	0.084	0.076	0.080	0.067	0.068	**0.080**	0.074	0.071
17-119-1009	Maryville	0.084	0.081	0.074	0.071	0.070	**0.079**	**0.076**	0.072
17-119-3007	Wood River	0.087	0.081	0.070	0.066	0.067	**0.079**	0.072	0.067
17-119-9991	Highland	0.083	0.076	-	-	-	-	-	-
17-143-0024	Peoria Fire Station #8	0.065	0.066	0.059	0.053	0.060	0.063	0.059	0.057
17-143-1001	Peoria Heights	0.078	0.069	0.069	0.069	0.067	0.072	0.069	0.068
17-157-0001	Houston	0.081	0.066	0.065	0.059	0.065	0.070	0.063	0.063
17-161-3002	Rock Island	0.066	0.055	0.057	0.058	0.058	0.059	0.056	0.057
17-163-0010	East St. Louis	0.083	0.076	0.072	0.069	0.064	**0.077**	0.072	0.068
17-167-0010	Springfield Dirkson Parkway	-	-	-	0.061	0.059	-	-	0.060
17-167-0013	Springfield Blandco	-	-	0.069	-	-	-	-	-
17-167-0014	Springfield State Fairgrounds	0.076	0.079	-	-	-	-	-	-
17-197-1011	Braidwood	0.071	0.061	0.065	0.063	0.060	0.065	0.063	0.062
17-201-2001	Loves Park	0.074	0.068	0.063	0.067	0.060	0.068	0.066	0.063
Statewide Average		0.079	0.069	0.071	0.069	0.064	0.073	0.065	0.063

*The design value is the 3-year average of the 4th high concentration. Design value greater than 0.075 ppm is a violation of the National Ambient Air Quality Standard.

2012 $PM_{2.5}$ FRM Monitoring Sites





	Site ID	Site Name
1.	170010007	Quincy
2.	170190006	Champaign
3	170191001	Bondville
4.	170310022	Chicago – Washington High School
5.	170310052	Chicago – Mayfair Pump Station
6.	170310057	Chicago – Springfield Pump Station
7.	170310076	Chicago – Com Ed Maintenance Bldg.
8.	170311016	Lyons Township
9.	170312001	Blue Island
10.	170313103	Schiller Park
11.	170313301	Summit
12.	170314007	Des Plaines
13.	170314201	Northbrook
14.	170316005	Cicero
15.	170434002	Naperville
16.	170650002	Knight Prairie
17.	170831001	Jerseyville
18.	170890003	Elgin
19.	170890007	Aurora
20.	171110001	Cary
21.	171132003	Normal
22.	171150013	Decatur
23.	171190024	Granite City – Gateway Medical
24.	171191007	Granite City – 23rd and Madison
25.	171192009	Alton
26.	171193007	Wood River
27.	171430037	Peoria
28.	171570001	Houston
29.	171613002	Rock Island
30.	171630010	East St. Louis
31.	171670012	Springfield
32.	171971002	Joliet
33.	171971011	Braidwood
34.	172010013	Rockford

Table B5
2012 24-Hour $PM_{2.5}$ Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 35 ug/m3		
Date	**Location**	**Concentration (ug/m3)**
11/7	Lyons Township	45.3
11/16	Lyons Township	42.4
11/17	Rockford	44.2
	Lyons Township	40.7
	Schiller Park	40.4
	Elgin	39.2
	Aurora	37.2
	Mayfair	36.8
	Springfield Pump Station	36.7
	Washington High School	35.5
11/18	Lyons Township	37.6
11/20	Schiller Park	41.0
	Lyons Township	39.4
	Springfield Pump Station	38.8
	Mayfair	36.6
11/21	Lyons Township	44.7
	Mayfair	40.5
Total Over 35 ug/m3	17	
Total Days Over 35 ug/m3	6	

Table B6
2012 $PM_{2.5}$ Highs

AQS ID	City	Total Samples	Samples Greater Than 35 ug/m3			Highest Samples							
			2012	2011	2010	1st	2nd	3rd	4th	5th	6th	7th	8th
17-001-0007	Quincy	55	0	0	0	22.3	20.8	20.2	18.8	18.8	18.2	15.8	15.6
17-019-0006	Champaign	58	0	0	0	27.5	20.1	17.1	17.1	16.8	16.7	15.3	15.0
17-019-1001	Bondville	119	0	0	0	24.0	23.4	19.4	18.8	17.9	16.8	16.1	16.0
17-031-0022	Chicago Washington High School	58	1	0	1	35.5	21.2	20.8	20.3	20.1	20.0	19.3	18.7
17-031-0052	Chicago Mayfair Pump Station	355	3	3	6	40.5	36.8	36.6	30.7	30.5	30.0	29.7	28.6
17-031-0057	Chicago Springfield Pump Station	116	2	1	0	38.8	36.7	27.9	27.0	26.5	24.5	21.3	21.0
17-031-0076	Chicago Com Ed Maintenance	101	0	0	2	34.9	32.8	30.1	28.8	23.7	20.1	20.1	19.5
17-031-1016	Lyons Township	359	6	0	6	45.3	44.7	42.4	40.7	39.4	37.6	34.3	32.1
17-031-2001	Blue Island	118	0	0	1	34.7	33.4	23.4	23.1	23.1	22.7	20.6	19.8
17-031-3103	Schiller Park	116	2	0	0	41.0	40.4	30.5	27.8	27.0	27.0	26.4	25.7
17-031-3301	Summit	122	0	0	2	35.2	35.1	27.3	23.9	23.3	21.4	20.9	19.5
17-031-6005	Cicero Liberty School	111	0	0	1	31.4	31.2	24.5	21.6	21.3	21.3	19.3	18.7
17-031-4007	Des Plaines	118	0	0	2	34.7	33.3	27.1	25.3	21.7	21.3	20.0	19.8
17-031-4201	Northbrook	119	0	0	0	34.9	32.4	24.0	23.7	23.2	22.2	21.7	21.5
17-043-4002	Naperville	57	0	0	0	31.7	23.7	19.7	18.8	14.7	14.6	14.4	14.4
17-065-0002	Knight Prairie	52	0	0	0	19.5	15.7	15.2	15.0	13.8	13.6	13.3	13.1
17-083-1001	Jerseyville	53	0	0	0	25.2	19.9	17.9	14.2	13.8	13.6	13.3	13.0
17-089-0003	Elgin McKinley School	61	1	0	0	39.2	19.6	18.4	18.1	18.1	17.6	16.7	16.2
17-089-0007	Aurora	58	1	0	0	37.2	18.1	16.9	16.3	15.8	15.8	15.5	15.4
17-111-0001	Cary	115	0	0	0	32.3	29.9	25.3	22.9	22.1	20.5	18.8	17.3
17-113-2003	Normal	111	0	0	1	26.6	22.4	21.3	20.7	18.6	17.4	17.3	16.8
17-115-0013	Decatur Illinois EPA Trailer	58	0	0	0	26.3	18.1	18.0	17.3	16.0	16.0	16.0	15.9
17-119-2009	Alton SIU Dental Clinic	54	0	0	0	32.5	23.6	18.1	16.9	16.9	16.8	16.3	15.8
17-119-0024	Granite City Gateway Medical Center	117	0	0	1	35.0	34.5	28.0	27.3	26.8	26.2	25.8	25.5
17-119-1007	Granite City Fire Station #1	330	0	1	2	34.5	28.0	27.3	26.2	25.8	25.5	24.6	24.6

Table B6
2012 $PM_{2.5}$ Highs

17-119-3007	Wood River	116	0	0	0	30.6	25.6	23.3	23.1	21.4	21.1	19.3	18.2
17-143-0037	Peoria City Office Building	118	0	0	0	22.0	20.8	20.7	20.3	19.6	18.6	18.6	17.6
17-157-0001	Houston	61	0	0	0	17.6	15.2	14.0	13.9	13.6	13.5	13.5	13.5
17-161-3002	Rock Island	55	0	0	0	19.6	19.4	17.3	16.6	16.5	16.3	16.1	15.8
17-163-0010	East St. Louis	56	0	1	0	32.0	28.0	20.3	16.3	16.3	16.0	15.9	15.7
17-167-0012	Springfield Agricultural Building	119	0	0	0	29.4	20.9	20.0	19.5	19.5	18.6	18.1	17.7
17-197-1002	Joliet Pershing Elementary	60	0	0	1	31.8	24.7	23.4	18.5	18.1	17.3	17.1	17.0
17-197-1011	Braidwood	60	0	0	0	24.5	24.3	18.7	17.7	15.5	15.3	14.7	14.7
17-201-0013	Rockford Health Department	118	1	0	2	44.2	30.6	23.0	18.8	17.9	17.4	16.0	15.6
Statewide Average						31.5	26.6	22.9	21.4	20.4	19.8	18.9	18.4
Total Samples Over 35 ug/m3			17	6	31								
Total Sites Over 35 ug/m3			8	4	15								
Total Days Over 35 ug/m3			6	5	8								

Table B7
2012 $PM_{2.5}$ 24-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ug/m3)					Design Values* (ug/m3)		
		2012	2011	2010	2009	2008	2010-2012	2009-2011	2008-2010
17-001-0007	Quincy	20.8	24.6	22.6	17.3	19.8	22.7	21.5	19.9
17-019-0006	Champaign	20.1	24.7	29.2	19.3	27.1	22.4	24.4	25.2
17-019-1001	Bondville	19.4	25.3	20.6	20.0	25.9	21.8	22.0	22.2
17-031-0022	Chicago Washington High School	21.2	28.5	30.3	26.8	31.2	26.7	28.5	29.4
17-031-0052	Chicago Mayfair Pump Station	28.6	28.7	33.8	32.4	27.8	30.4	31.6	31.3
17-031-0057	Chicago Springfield Pump Station	27.9	30.5	28.6	32.5	27.5	29.0	30.5	29.5
17-031-0076	Chicago Com Ed Maintenance	30.1	27.1	31.0	26.2	29.7	29.4	28.1	29.0
17-031-1016	Lyons Township	32.1	28.6	35.3	30.8	33.9	32.0	31.6	33.3
17-031-2001	Blue Island	23.4	25.5	25.8	27.2	29.5	24.9	26.2	27.5
17-031-3103	Schiller Park	30.5	27.3	25.9	30.0	31.3	27.9	27.7	29.1
17-031-3301	Summit	27.3	24.5	35.0	31.0	29.3	28.9	30.2	31.8
17-031-6005	Cicero Liberty School	24.5	29.5	27.1	27.7	34.1	27.0	28.1	29.6
17-031-4007	Des Plaines	27.1	24.5	28.5	29.4	25.7	26.7	27.5	27.9
17-031-4201	Northbrook	24.0	23.0	30.1	23.7	25.1	25.7	25.6	26.3
17-043-4002	Naperville	23.7	24.6	28.4	23.4	33.1	25.6	25.5	28.3
17-065-0002	Knight Prairie	15.7	20.6	25.3	22.1	25.7	20.5	22.7	24.4
17-083-1001	Jerseyville	19.9	20.4	21.4	19.2	21.6	20.6	20.3	20.7
17-089-0003	Elgin McKinley School	19.6	24.0	32.3	23.7	33.3	25.3	26.7	29.8
17-089-0007	Aurora	18.1	25.8	32.4	26.4	26.3	25.4	28.2	28.4
17-111-0001	Cary	25.3	23.4	29.4	26.0	27.0	26.0	26.3	27.5
17-113-2003	Normal	21.3	25.8	25.0	22.4	24.0	24.0	24.4	23.8
17-115-0013	Decatur Illinois EPA Trailer	18.1	25.5	22.1	21.6	26.6	21.9	23.1	23.4
17-119-2009	Alton SIU Dental Clinic	23.6	23.9	25.0	18.5	30.0	24.2	22.5	24.5
17-119-0024	Granite City Gateway Medical Center	23.7	30.6	28.6	23.7	30.7	27.6	27.6	27.7
17-119-1007	Granite City Fire Station #1	25.8	27.3	29.2	24.8	31.9	27.4	27.1	28.6

Table B7
2012 $PM_{2.5}$ 24-Hour Design Values

17-119-3007	Wood River	23.3	28.6	22.1	21.7	25.4	24.7	24.1	23.1
17-143-0037	Peoria City Office Building	20.7	27.7	26.0	23.9	27.0	24.8	25.9	25.6
17-157-0001	Houston	15.2	20.9	17.2	21.0	20.8	17.8	19.7	19.7
17-161-3002	Rock Island	19.4	23.1	24.5	19.5	24.0	22.3	22.4	22.7
17-163-0010	East St. Louis	28.0	25.3	22.0	22.8	25.0	25.1	23.4	23.3
17-167-0012	Springfield Agricultural Building	20.0	27.8	24.2	21.7	24.1	24.0	24.6	23.3
17-197-1002	Joliet Pershing Elementary	24.7	20.8	28.3	25.5	31.3	24.6	24.9	28.4
17-197-1011	Braidwood	24.3	25.8	24.1	19.2	25.9	24.7	23.0	23.1
17-201-0013	Rockford Health Department	23.0	22.4	23.9	26.2	28.7	23.1	24.2	26.3
Statewide Average		23.2	25.5	26.9	24.3	27.4	25.2	25.6	26.2

*The design value is the 3-year average of the 98th percentile concentration. Design value greater than or equal to 35.5 ug/m3 is a violation of the National Ambient Air Quality Standard.

Table B8
2012 $PM_{2.5}$ Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations (ug/m3)					Design Values* (ug/m3)		
		2012	2011	2010	2009	2008	2010-2012	2009-2011	2008-2010
17-001-0007	Quincy	9.7	10.4	10.5	8.3	9.2	10.2	9.7	9.3
17-019-0004	Champaign	-	-	-	10.5	10.5		-	10.5
17-019-0006	Champaign	9.7	10.6	-	-	-	10.1	-	-
17-019-1001	Bondville	8.9	10.2	10.5	10.5	10.9	9.9	10.4	10.6
17-031-0022	Chicago Washington High School	11.5	12.6	14.0	11.6	12.5	12.7	12.7	12.7
17-031-0052	Chicago Mayfair Pump Station	11.6	11.8	12.6	12.7	12.2	12.0	12.4	12.5
17-031-0057	Chicago Springfield Pump Station	11.9	11.5	12.0	11.3	12.0	11.8	11.6	11.8
17-031-0076	Chicago Com Ed Maintenance	11.3	11.3	12.3	11.1	11.9	11.6	11.5	11.8
17-031-1016	Lyons Township	12.6	12.6	12.6	12.6	12.9	12.6	12.6	12.7
17-031-2001	Blue Island	10.9	11.6	11.6	11.7	12.5	11.3	11.6	11.9
17-031-3103	Schiller Park	13.1	13.3	12.6	12.9	13.6	13.0	12.9	13.0
17-031-3301	Summit	11.3	11.0	12.2	11.6	12.0	11.5	11.6	11.9
17-031-6005	Cicero Liberty School	10.4	11.4	11.9	12.0	13.3	11.2	11.8	12.4
17-031-4007	Des Plaines	10.9	10.6	10.6	11.0	11.4	10.7	10.7	11.0
17-031-4201	Northbrook	10.2	10.2	9.3	9.3	10.1	9.9	9.6	9.6
17-043-4002	Naperville	10.1	10.5	11.7	9.8	11.3	10.8	10.7	10.9
17-065-0002	Knight Prairie	8.5	10.1	11.3	10.1	12.4	10.0	10.5	11.3
17-083-1001	Jerseyville	8.4	10.5	11.2	9.9	10.1	10.0	10.5	10.4
17-089-0003	Elgin McKinley School	10.0	9.8	11.3	9.6	10.8	10.4	10.2	10.6
17-089-0007	Aurora	9.9	10.8	11.4	10.0	10.3	10.7	10.8	10.6
17-111-0001	Cary	10.1	10.1	10.2	9.6	10.1	10.2	10.0	10.0
17-113-2003	Normal	9.3	10.7	10.6	10.1	10.7	10.2	10.5	10.5
17-115-0013	Decatur IEPA Trailer	10.0	11.6	12.2	11.0	12.0	11.2	11.6	11.7
17-119-2009	Alton SIU Dental Clinic	10.4	11.5	13.3	10.1	12.5	11.8	11.7	12.0
17-119-0024	Granite City Gateway Medical Center	13.0	14.4	14.6	11.4	14.4	14.0	13.5	13.5

Table B8
2012 $PM_{2.5}$ Annual Design Values

17-119-1007	Granite City Fire Station #1	12.8	13.3	14.3	11.3	15.7	13.5	13.0	13.8
17-119-3007	Wood River	10.6	12.4	12.0	11.0	12.2	11.6	11.8	11.7
17-143-0037	Peoria City Office Building	9.8	11.7	11.5	10.7	11.1	11.0	11.3	11.1
17-157-0001	Houston	8.3	9.5	10.2	9.7	10.4	9.3	9.8	10.1
17-161-3002	Rock Island	9.7	10.9	9.9	8.5	10.7	10.2	9.8	9.7
17-163-0010	East St. Louis	10.9	12.8	13.0	11.7	12.5	12.2	12.5	12.4
17-167-0012	Springfield Agricultural Building	9.5	10.7	11.5	10.6	11.0	10.6	10.9	11.0
17-197-1002	Joliet Pershing Elementary	11.1	10.2	11.8	10.5	11.7	11.0	10.8	11.3
17-197-1011	Braidwood	9.3	10.4	10.0	8.7	10.3	9.9	9.7	9.7
17-201-0013	Rockford Health Department	9.3	10.2	10.0	9.5	10.7	9.8	9.9	10.1
Statewide Average		10.4	11.2	11.6	10.6	11.6	11.1	11.2	12.0

*The design value is the 3-year average of the annual arithmetic mean concentrations. Design value greater than 15.0 ug/m3 is a violation of the National Ambient Air Quality Standard.

Shaded cells indicate less than 75% data capture during at least one quarter of the year.

2012 PM_{10} Monitoring Sites

	Site ID	Site Name
1.	170310022	Chicago – Washington High School
2.	170311016	Lyons Township
3.	170314201	Northbrook
4.	171190010	Granite City – 15th and Madison
5.	171191007	Granite City – 23rd and Madison

Table B9
2012 24-Hour PM_{10} Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 150 ug/m3		
Date	**City**	**Concentration (ug/m3)**
None	None	None
Total Over 150 ug/m3	0	
Total Days Over 150 ug/m3	0	

Table B10
2012 PM_{10} 24-Hour Highs and Design Values

AQS ID	City	Total Samples	Highest 24-hour Samples								Samples Greater Than 150 ug/m3			3-year Average*
			1st	2nd	3rd	4th	5th	6th	7th	8th	2012	2011	2010	
17-031-0022	Chicago Washington High School	327	106	93	90	88	86	85	85	82	0	0	0	0.0
17-031-1016	Lyons Township	15	53	41	32	31	28	26	25	24	0	0	0	0.0
17-031-4201	Northbrook	53	44	41	37	37	32	30	25	25	0	0	0	0.0
17-119-0010	Granite City Air Products	48	67	66	60	58	53	51	51	50	0	0	0	0.0
17-119-1007	Granite City Fire Station #1	0	-	-	-	-	-	-	-	-	0	0	0	0.0
Statewide Average			68	60	55	54	50	48	47	45				
Total Over 150 ug/m3											0	0	0	
Total Days Over 150 ug/m3											0	0	0	

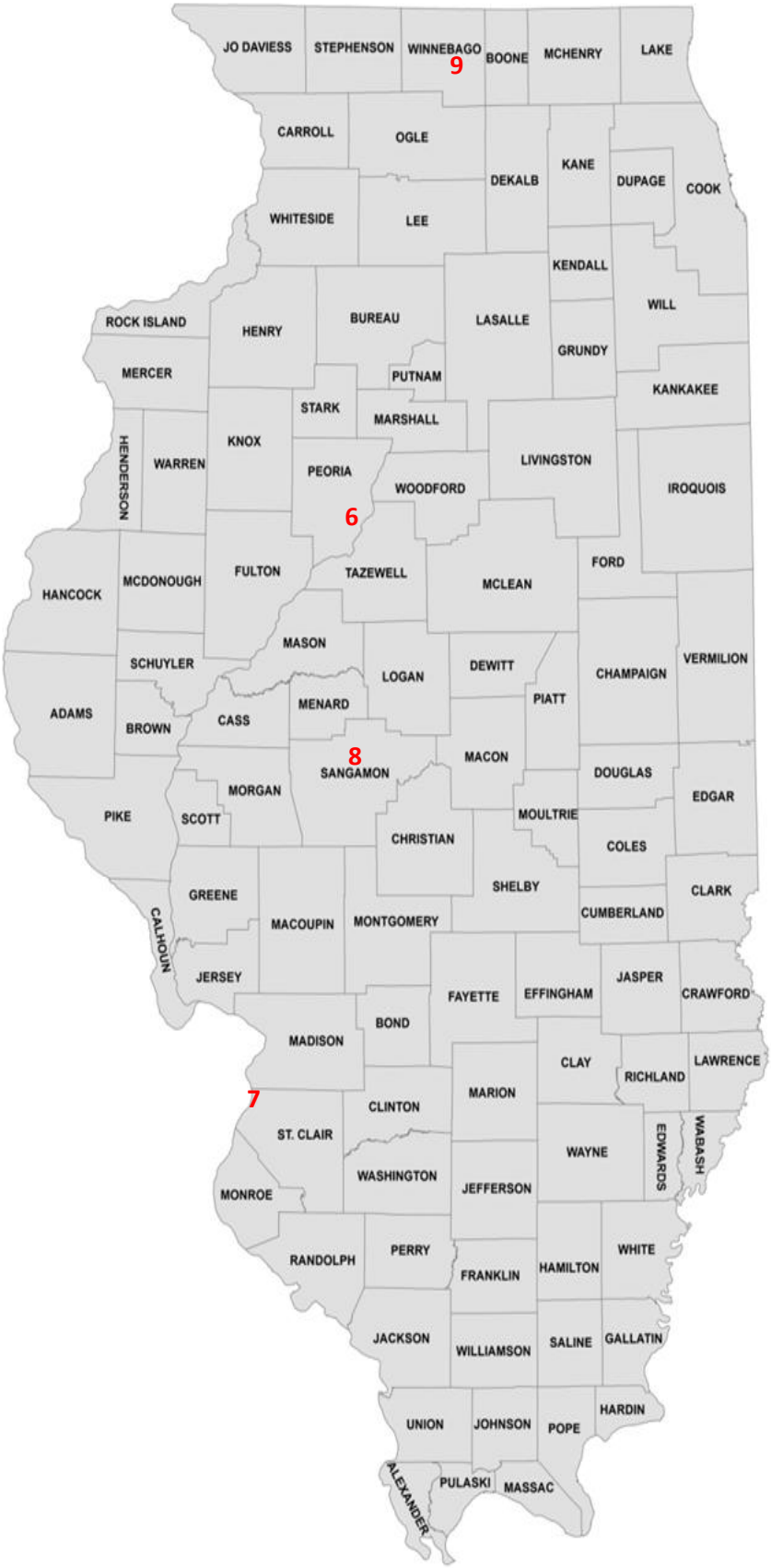
*The 24-hour PM_{10} standard is an exceedance-based standard set at 150 ug/m^3. The level is not to be exceeded more than once per year on average over three years. Three year averages more than one are a violation of the National Ambient Air Quality Standard.

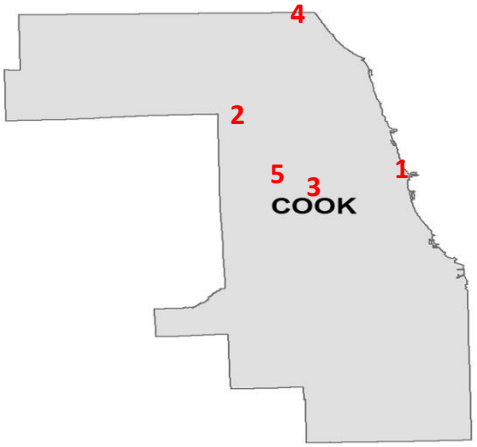
Table B11
2012 PM10 Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentration (ug/m3)					Design Values* (ug/m3)		
		2012	2011	2010	2009	2008	2010-2012	2009-2011	2008-2010
17-031-0022	Chicago Washington High School	31	21	22	20	23	25	21	22
17-031-1016	Lyons Township	25	26	27	26	29	26	26	27
17-031-4201	Northbrook	17	13	17	16	17	16	15	17
17-119-0010	Granite City Air Products	32	31	32	25	33	32	29	30
17-119-1007	Granite City Fire Station #1	-	24	-	24	34	24	24	29
Statewide Average		26	23	23	23	20	25	22	22

*The annual PM10 standard was revoked in 2007. Previously the standard was a 3-year average of the annual means. Concentrations above 50 ug/m3 were a violation of the former National Ambient Air Quality Standard. Currently only the 24-hour PM10 standard is in place (see Table B10).

2012 Carbon Monoxide Monitoring Sites





	Site ID	Site Name
1.	170310063	Chicago – Chicago Transit Authority
2.	170313103	Schiller Park
3	170314002	Cicero
4.	170314201	Northbrook
5.	170316004	Maywood
6.	171430036	Peoria
7.	171630010	East St. Louis
8.	171670008	Springfield
9.	172010011	Rockford

Table B12
2012 Carbon Monoxide Exceedances

EXCEEDANCES OF EITHER THE 1-HOUR (35 PPM) OR 8-HOUR (9 PPM) PRIMARY STANDARDS			
Date	**City**	**Concentration**	**Averaging Period**
None	None	None	None

Total 1-hour Over 35 ppm	0	Total 8-hour Over 9 ppm	0
Total Days 1-hour Over 35 ppm	0	Total Days 8-hour Over 9 ppm	0

Table B13
2012 Carbon Monoxide Highs

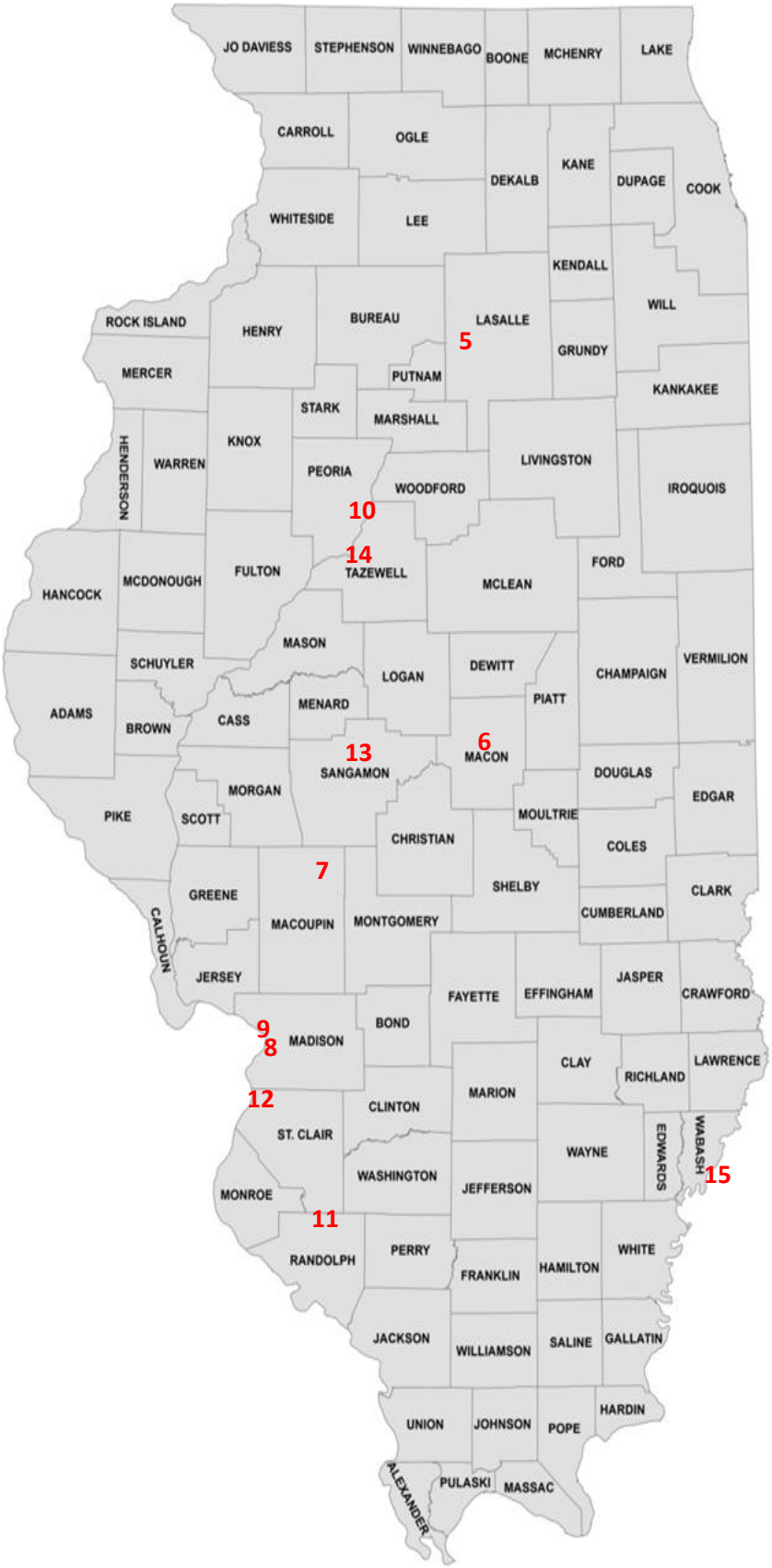
AQS ID	City	Total Hourly Samples	4 Highest Daily Samples 1hr (ppm)				4 Highest Samples 8hr (ppm)			
17-031-0063	Chicago CTA Building	8719	2.0	1.8	1.7	1.7	1.2	1.1	1.1	1.1
17-031-3103	Schiller Park	8679	2.0	1.8	1.8	1.7	1.5	1.4	1.4	1.4
17-031-4002	Cicero Cook County Trailer	8729	3.8	2.4	2.0	1.8	1.8	1.6	1.4	1.3
17-031-4201	Northbrook	5922	1.1	1.0	1.0	1.0	0.8	0.8	0.8	0.8
17-031-6004	Maywood Com Ed Maintenance	5281	1.9	1.7	1.7	1.7	1.4	1.4	1.4	1.3
17-143-0036	Peoria Commercial Building	8655	2.9	2.9	2.6	2.3	2.3	1.9	1.5	1.4
17-163-0010	East St. Louis	8710	2.7	1.9	1.9	1.7	1.5	1.5	1.3	1.3
17-167-0008	Springfield Federal Building	8721	4.1	1.4	1.1	1.1	0.9	0.9	0.7	0.7
17-201-0011	Rockford City Hall	8636	1.8	1.8	1.6	1.6	1.1	1.1	1.0	1.0
Statewide Average			2.5	1.9	1.7	1.6	1.4	1.3	1.2	1.1

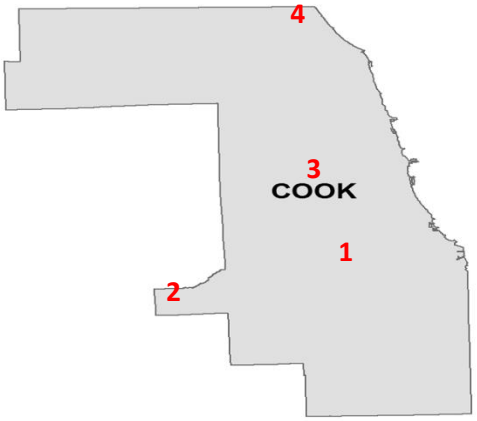
Table B14
2012 Carbon Monoxide 1-Hour and 8-Hour Design Values

AQS ID	City	1-Hour Samples Greater than 35 (ppm)					8-Hour Samples Greater than 9 (ppm)				
		2012	2011	2010	2009	2008	2012	2011	2010	2009	2008
17-031-0063	Chicago CTA Building	0	0	0	0	0	0	0	0	0	0
17-031-3103	Schiller Park	0	0	0	0	0	0	0	0	0	0
17-031-4002	Cicero Cook County Trailer	0	0	0	0	0	0	0	0	0	0
17-031-4201	Northbrook	0	0	0	0	0	0	0	0	0	0
17-031-6004	Maywood Com Ed Maintenance	0	0	0	0	0	0	0	0	0	0
17-143-0036	Peoria Commercial Building	0	0	0	0	0	0	0	0	0	0
17-163-0010	East St. Louis	0	0	0	0	0	0	0	0	0	0
17-167-0008	Springfield Federal Building	0	0	0	0	0	0	0	0	0	0
17-201-0011	Rockford City Hall	0	0	0	0	0	0	0	0	0	0

*The 1-hour and 8-hour carbon monoxide standard is an exceedance-based standard. The 1-hour standard is set at 35 ppm and is not to be exceeded more than once per year. The 8-hour standard is set at 9 ppm and is not to be exceeded more than once per year. More than one exceedance in a year is a violation of the National Ambient Air Quality Standard.

2012 Sulfur Dioxide Monitoring Sites





	Site ID	Site Name
1.	170310076	Chicago – Com Ed Maintenance Bldg.
2.	170311601	Lemont
3.	170314002	Cicero
4.	170314201	Northbrook
5.	170990007	Oglesby
6.	171150013	Decatur
7.	171170002	Nilwood
8.	171191010	South Roxana
9.	171193007	Wood River
10.	171430024	Peoria
11.	171570001	Houston
12.	171630010	East St. Louis
13.	171670006	Springfield
14.	171790004	Pekin
15.	171850001	Mount Carmel

Table B15
2012 Sulfur Dioxide Exceedances

EXCEEDANCES OF THE 1-HOUR PRIMARY STANDARD OF 75 ppb		
Date	**City**	**Concentration (ppb)**
1/1	Pekin	306
1/9	Lemont	79
1/23	Pekin	245
2/8	Lemont	117
2/12	Lemont	92
2/27	Pekin	76
2/21	Pekin	260
2/27	Lemont	87
2/29	Pekin	319
3/1	Lemont	83
3/6	Mount Carmel	105
3/8	Lemont	108
3/12	Lemont	122
3/13	Lemont	206
4/3	Pekin	84
4/8	Pekin	137
4/15	Mount Carmel	90
5/1	Pekin	150
5/3	Mount Carmel	89
5/15	Pekin	157
5/29	Pekin	102
6/4	Lemont	81
6/11	Pekin	101
6/15	Mount Carmel	90
6/28	Pekin	116
7/3	Pekin	99
7/4	Pekin	97
7/17	Pekin	112
7/18	Pekin	77
7/23	Pekin	110
7/25	Pekin	88
7/26	Pekin	80
7/31	Pekin	88
8/24	Pekin	113
10/4	Pekin	85
10/18	Pekin	142
11/12	Pekin	166
11/28	Pekin	87
Total Over 75 ppb	38	
Total Days Over 75 ppb	38	

Table B16
2012 Sulfur Dioxide Highs

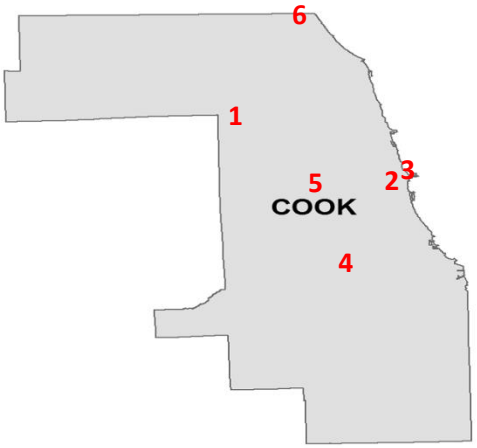
AQS ID	City	Total Valid Sample Days	Samples Greater Than 75 ppb			Highest Daily 1-Hour Samples (ppb)				Highest 3-Hour Block Averages (ppb)	
			2012	2011	2010	1st	2nd	3rd	4th	1st	2nd
17-031-0076	Chicago Com Ed Maintenance	336	0	0	0	18	18	17	17	15	14
17-031-1601	Lemont	355	9	10	7	206	122	117	108	163	81
17-031-4002	Cicero Cook County Trailer	229	0	0	0	19	18	16	16	10	10
17-031-4201	Northbrook	275	0	0	0	30	20	13	13	22	12
17-099-0007	Oglesby	360	0	0	0	26	7	7	6	9	6
17-115-0013	Decatur Illinois EPA Trailer	359	0	0	0	63	39	39	38	41	29
17-117-0002	Nilwood	364	0	0	0	12	9	9	8	7	7
17-119-1010	South Roxana	355	0	0	0	52	19	19	17	37	13
17-119-3007	Wood River	363	0	0	2	34	30	30	30	23	21
17-143-0024	Peoria Fire Station #8	366	0	0	0	58	54	46	44	36	33
17-157-0001	Houston	355	0	0	0	37	28	26	24	22	20
17-163-0010	East St. Louis	357	0	0	0	28	24	24	24	21	18
17-167-0006	Springfield Sewage Treatment Plant	365	0	0	2	29	20	16	15	12	11
17-179-0004	Pekin	366	25	32	37	319	306	260	245	219	219
17-185-0001	Mount Carmel	348	4	0	2	105	90	90	89	70	63
Statewide Average						69	54	49	46	47	37
Total Over 75 ppb			38	42	50						
Total Days Over 75 ppb			38	41	47						

Table B17
2012 Sulfur Dioxide 1-Hour Design Values

AQS ID	City	99th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2012	2011	2010	2009	2008	2010-2012	2009-2011	2008-2010
17-031-0076	Chicago Com Ed Maintenance	17	27	20	24	26	21	24	23
17-031-1601	Lemont	108	90	90	114	97	**96**	**98**	**100**
17-031-4002	Cicero Cook County Trailer	16	29	31	29	43	25	30	34
17-031-4201	Northbrook	17	19	15	18	13	17	18	15
17-099-0007	Oglesby	6	8	14	8	326	9	10	**116**
17-115-0013	Decatur Illinois EPA Trailer	38	33	49	36	44	40	39	43
17-117-0002	Nilwood	8	8	15	16	20	10	13	17
17-119-1010	South Roxana	17	22	57	81	152	32	53	**97**
17-119-3007	Wood River	30	28	54	46	67	37	43	56
17-143-0024	Peoria Fire Station #8	44	45	43	21	52	44	36	39
17-157-0001	Houston	24	22	31	26	35	26	26	31
17-163-0010	East St. Louis	24	22	31	30	35	26	28	32
17-167-0006	Springfield Sewage Treatment Plant	15	27	24	24	131	24	25	60
17-179-0004	Pekin	245	172	228	233	243	**215**	**211**	**235**
17-185-0001	Mount Carmel	89	47	66	69	90	67	61	75
Statewide Average		47	40	47	47	81	46	48	58

*The design value is the 3-year average of the 99th percentile concentration. Design value greater than 75 ppb is a violation of the National Ambient Air Quality Standard.

2012 Nitrogen Dioxide Monitoring Sites



	Site ID	Site Name
1.	170190004	Schiller Park
2.	170310042	Chicago – Chicago Transit Authority
3.	170310072	Chicago – Jardine Water Plant
4.	170310076	Chicago – Com Ed Maintenance Bldg.
5.	170314002	Cicero
6.	170314201	Northbrook
7.	171630010	East St. Louis

Table B18
2012 1-Hour Nitrogen Dioxide Exceedances

EXCEEDANCES OF THE 1-HOUR PRIMARY STANDARD OF 100 PPB		
Date	**City**	**Concentration (ppb)**
None	None	None
Total Over 100 ppb	0	
Total Days Over 100 ppb	0	

Table B19
2012 Nitrogen Dioxide Highs

AQS ID	City	Total Valid Sample Days	Samples Greater Than 100 ppb			Highest Samples							
			2012	2011	2010	1st	2nd	3rd	4th	5th	6th	7th	8th
17-031-0063	Chicago CTA Building	311	0	0	0	75	74	70	70	66	66	65	65
17-031-0072	Chicago[1] Jardine Water Plant	0	-	-	-	-	-	-	-	-	-	-	-
17-031-0076	Chicago Com Ed Maintenance	305	0	0	0	88	80	79	79	73	71	70	70
17-031-3103	Schiller Park	357	0	0	0	74	74	67	64	63	63	63	63
17-031-4002	Cicero Cook County Trailer	304	0	0	0	69	66	61	60	60	58	58	58
17-031-4201	Northbrook	274	0	0	0	58	52	51	49	47	46	46	44
17-163-0010	East St. Louis	265	0	0	0	73	60	57	55	52	49	48	47
Statewide Average						73	68	64	63	60	59	58	58
Total Over 100 ppb			0	0	0								
Total Days Over 100 ppb			0	0	0								

[1] Chicago Jardine site operated only during ozone season, equipment issues no valid data for 2012.

Table B20
2012 Nitrogen Dioxide 1-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2012	2011	2010	2009	2008	2010-2012	2009-2011	2008-2010
17-031-0063	Chicago CTA Building	65	65	71	79	132	67	72	94
17-031-0072	Chicago Jardine Water Plant	-	59	52	58	61	56	56	57
17-031-0076	Chicago Com Ed Maintenance	70	57	56	58	56	61	57	57
17-031-3103	Schiller Park	63	64	60	64	72	62	63	65
17-031-4002	Cicero Cook County Trailer	58	62	64	60	66	61	62	63
17-031-4201	Northbrook	44	45	53	54	50	47	51	52
17-163-0010	East St. Louis	49	37	43	49	48	43	43	47
Statewide Average		58	56	57	60	69	57	58	62

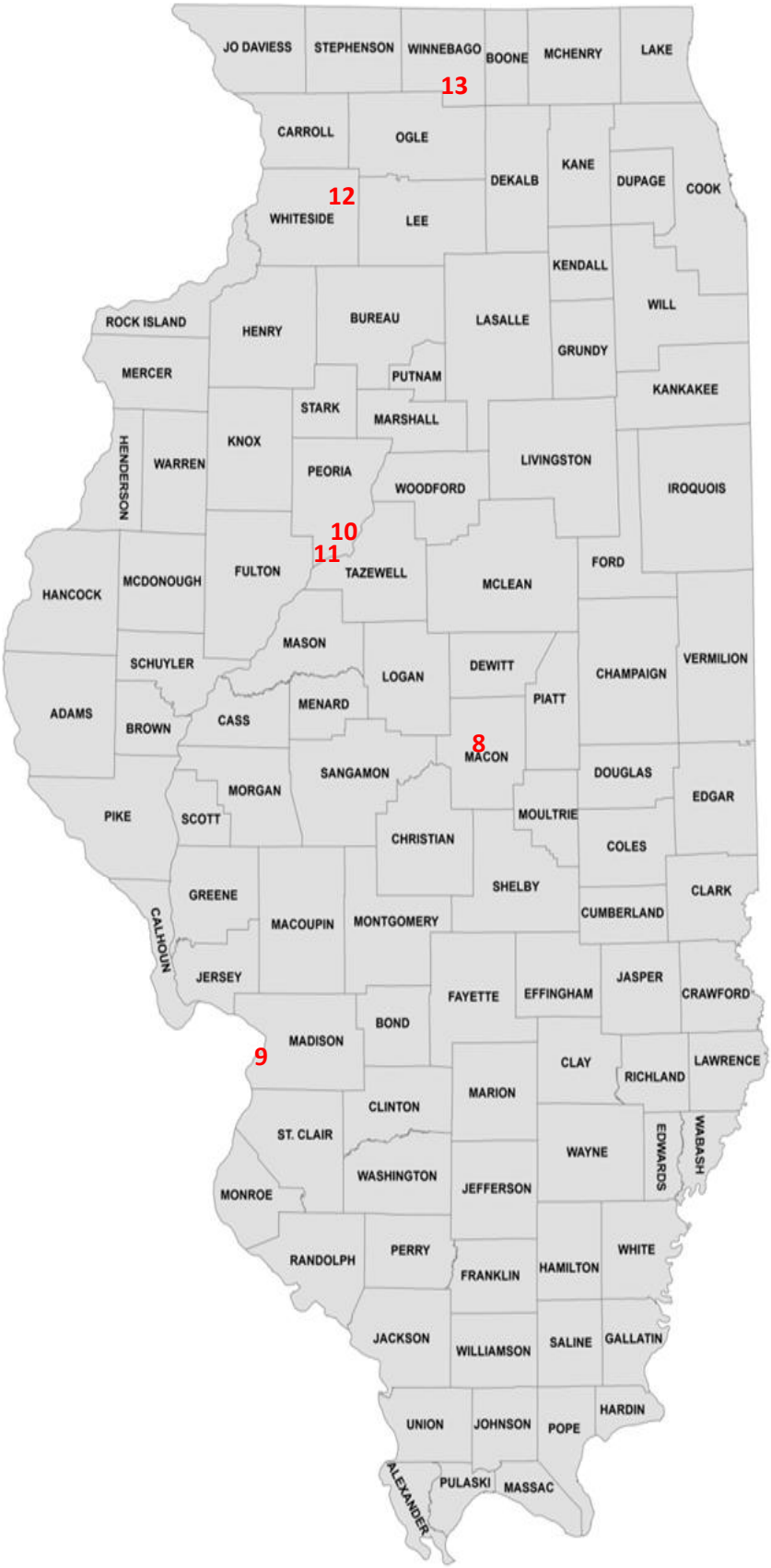
*The design value is the 3-year average of the 98th percentile concentration. Design value greater than 100 ppb is a violation of the National Ambient Air Quality Standard.

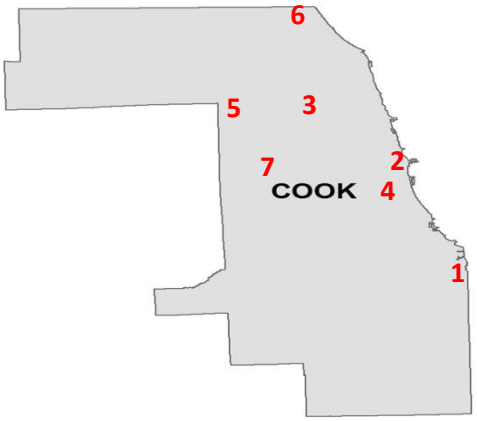
Table B21
2012 Nitrogen Dioxide Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations* (ppb)				
		2012	2011	2010	2009	2008
17-031-0063	Chicago CTA Building	22	21	25	25	31
17-031-0076	Chicago Com Ed Maintenance	16	16	17	17	17
17-031-3103	Schiller Park	22	23	23	23	27
17-031-4002	Cicero Cook County Trailer	14	18	20	20	20
17-031-4201	Northbrook	12	11	12	12	14
17-163-0010	East St. Louis	12	9	12	14	14
Statewide Average		16	16	18	19	21

*The design value is the highest annual average concentration during the most recent two years. Design value greater than 53 ppb is a violation of the National Ambient Air Quality Standard.

2012 Lead Monitoring Sites





	Site ID	Site Name
1.	170310022	Chicago – Washington High School
2.	170310026	Chicago – Cermak Pump Station
3.	170310052	Chicago – Mayfair Pump Station
4.	170310110	Chicago – Perez Elementary
5.	170313103	Schiller Park
6.	170314201	Northbrook
7.	170316003	Maywood
8.	171150110	Decatur – Mueller
9.	171190010	Granite City – 15th and Madison
10.	171430110	Bartonville
11.	171430210	Mapleton
12.	171950110	Sterling
13.	172010110	Rockford – J. Rubin & Company

Table B22
2012 Lead Highs

AQS ID	City	Total Sample Days	Highest Monthly Means					Maximum 3-Month Mean
			1st	2nd	3rd	4th	5th	
17-031-0022	Chicago Washington High School	60	0.05	0.05	0.04	0.04	0.04	0.04
17-031-0026	Chicago Cermak Pump Station	58	0.04	0.04	0.03	0.03	0.03	0.03
17-031-0052	Chicago Mayfair Pump Station	59	0.03	0.03	0.02	0.02	0.02	0.02
17-031-0110	Chicago Perez Elementary	86	0.06	0.05	0.04	0.04	0.04	0.05
17-031-3103	Schiller Park	57	0.10	0.02	0.01	0.01	0.01	0.04
17-031-4201	Northbrook	60	0.01	0.01	0.01	0.01	0.01	0.01
17-031-6003	Maywood 4th District Court	59	0.08	0.03	0.03	0.03	0.02	0.04
17-115-0110	Decatur Mueller	56	0.10	0.08	0.08	0.08	0.07	0.08
17-119-0010	Granite City Air Products	56	0.85	0.20	0.20	0.14	0.13	0.36
17-143-0110	Bartonville	58	0.02	0.01	0.01	0.01	0.01	0.01
17-143-0210	Mapleton	60	0.01	0.01	0.01	0.01	0.01	0.01
17-195-0110	Sterling	51	0.04	0.03	0.03	0.02	0.02	0.03
17-201-0110	Rockford J. Rubin & Company	56	0.05	0.04	0.03	0.03	0.02	0.03
Statewide Average			0.11	0.05	0.04	0.04	0.03	0.06

Table B23
2012 Lead Design Values

AQS ID	City	Maximum 3-Month Rolling Mean (ug/m3)					Design Values* (ug/m3)		
		2012	2011	2010	2009	2008	2010-2012	2009-2011	2008-2010
17-031-0022	Chicago Washington High School	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05
17-031-0026	Chicago Cermak Pump Station	0.03	0.02	0.03	0.03	0.05	0.03	0.03	0.05
17-031-0052	Chicago Mayfair Pump Station	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
17-031-0110	Chicago Perez Elementary	0.05	0.29	0.24	-	-	**0.29**	**0.29**	**0.24**
17-031-3103	Schiller Park	0.04	0.01	0.01	0.01	0.01	0.04	0.01	0.01
17-031-4201	Northbrook	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
17-031-6003	Maywood 4th District Court	0.04	0.03	0.04	0.03	0.03	0.04	0.04	0.04
17-115-0110	Decatur Mueller	0.08	0.20	0.12	-	-	**0.20**	**0.20**	0.12
17-119-0010	Granite City Air Products	0.36	0.21	0.42	0.12	0.28	**0.42**	**0.42**	**0.42**
17-143-0110	Bartonville	0.01	0.01	0.02	-	-	0.02	0.02	0.02
17-143-0210	Mapleton	0.01	0.02	0.02	-	-	0.02	0.02	0.02
17-195-0110	Sterling	0.03	0.03	0.02	-	-	0.03	0.03	0.02
17-201-0110	Rockford J. Rubin & Company	0.03	0.04	0.06	-	-	0.06	0.06	0.06
Statewide Average		0.06	0.07	0.07	0.03	0.05	0.09	0.07	0.07

*The design value is the maximum 3-month rolling mean over the latest 3-year period. Design value greater than 0.15 ug/m3 is a violation of the National Ambient Air Quality Standard.

Table B24
2012 Filter Analysis Data

AQS ID	City	Arsenic				Beryllium				Cadmium			
		Total Samples	Highs 1st	Highs 2nd	Annual Mean	Total Samples	Highs 1st	Highs 2nd	Annual Mean	Total Samples	Highs 1st	Highs 2nd	Annual Mean
17-031-0022	Chicago Washington High School	-	-	-	-	-	-	-	-	60	0.007	0.005	0.002
17-031-0026	Chicago Cermak Pump Station	-	-	-	-	-	-	-	-	58	0.005	0.002	0.001
17-031-0052	Chicago Mayfair Pump Station	-	-	-	-	-	-	-	-	59	0.005	0.002	0.001
17-031-0110	Chicago Perez Elementary	56	0.000	0.000	0.000	56	0.000	0.000	0.000	86	0.005	0.004	0.001
17-031-3103	Schiller Park	57	0.004	0.000	0.000	57	0.000	0.000	0.000	57	0.000	0.000	0.000
17-031-4201	Northbrook	60	0.000	0.000	0.000	60	0.000	0.000	0.000	60	0.000	0.000	0.000
17-031-6003	Maywood 4th District Court	-	-	-	-	-	-	-	-	59	0.004	0.002	0.001
17-115-0110	Decatur Mueller	56	0.005	0.000	0.000	56	0.000	0.000	0.000	56	0.003	0.002	0.000
17-119-0010	Granite City Air Products	56	0.097	0.054	0.005	56	0.000	0.000	0.000	56	0.000	0.000	0.000
17-143-0110	Bartonville	58	0.000	0.000	0.000	58	0.000	0.000	0.000	58	0.000	0.000	0.000
17-143-0210	Mapleton	60	0.000	0.000	0.000	60	0.000	0.000	0.000	60	0.000	0.000	0.000
17-195-0110	Sterling	51	0.003	0.000	0.000	51	0.000	0.000	0.000	51	0.007	0.004	0.000
17-201-0110	Rockford J. Rubin & Company	56	0.025	0.012	0.001	56	0.000	0.000	0.000	56	0.002	0.000	0.000

Table B24
2012 Filter Analysis Data

AQS ID	City	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean
			1st	2nd			1st	2nd			1st	2nd	
		Chromium				Iron				Manganese			
17-031-0022	Chicago Washington High School	59	0.036	0.034	0.011	55	7.31	2.88	1.22	60	0.633	0.595	0.156
17-031-0026	Chicago Cermak Pump Station	57	0.024	0.023	0.009	53	2.11	1.91	0.96	58	0.095	0.094	0.035
17-031-0052	Chicago Mayfair Pump Station	58	0.021	0.018	0.007	54	1.47	1.33	0.60	59	0.069	0.068	0.026
17-031-0110	Chicago Perez Elementary	86	0.013	0.012	0.003	86	2.06	1.91	0.63	86	0.077	0.064	0.024
17-031-3103	Schiller Park	57	0.099	0.007	0.004	57	2.00	1.87	0.88	57	0.076	0.061	0.026
17-031-4201	Northbrook	60	0.004	0.003	0.000	60	1.40	1.00	0.42	60	0.039	0.034	0.013
17-031-6003	Maywood 4th District Court	58	0.039	0.037	0.019	54	5.83	5.18	2.69	59	0.126	0.119	0.057
17-115-0110	Decatur Mueller	56	0.006	0.005	0.001	56	2.46	2.24	0.87	56	0.133	0.123	0.035
17-119-0010	Granite City Air Products	56	0.017	0.012	0.003	56	4.11	3.31	0.96	56	0.356	0.351	0.072
17-143-0110	Bartonville	58	0.014	0.012	0.003	58	1.67	1.52	0.63	58	0.124	0.113	0.036
17-143-0210	Mapleton	60	0.009	0.005	0.001	60	10.00	4.62	0.89	60	0.142	0.083	0.027
17-195-0110	Sterling	51	0.031	0.026	0.006	51	4.90	4.09	1.19	51	0.585	0.406	0.097
17-201-0110	Rockford J. Rubin & Company	56	0.024	0.013	0.003	56	10.33	7.77	1.79	56	1.230	0.639	0.123

Table B24
2012 Filter Analysis Data

AQS ID	City	Nickel				Nitrates				Sulfates			
		Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean
			1st	2nd			1st	2nd			1st	2nd	
17-031-0022	Chicago Washington High School	60	0.018	0.017	0.008	-	-	-	-	-	-	-	-
17-031-0026	Chicago Cermak Pump Station	58	0.016	0.011	0.008	-	-	-	-	-	-	-	-
17-031-0052	Chicago Mayfair Pump Station	59	0.014	0.011	0.007	-	-	-	-	-	-	-	-
17-031-0110	Chicago Perez Elementary	86	0.014	0.013	0.003	-	-	-	-	-	-	-	-
17-031-3103	Schiller Park	57	0.005	0.003	0.000	-	-	-	-	-	-	-	-
17-031-4201	Northbrook	60	0.000	0.000	0.000	-	-	-	-	-	-	-	-
17-031-6003	Maywood 4th District Court	59	0.016	0.015	0.010	-	-	-	-	-	-	-	-
17-115-0110	Decatur Mueller	56	0.011	0.009	0.001	-	-	-	-	-	-	-	-
17-119-0010	Granite City Air Products	56	0.005	0.003	0.000	-	-	-	-	-	-	-	-
17-143-0110	Bartonville	58	0.003	0.003	0.000	-	-	-	-	-	-	-	-
17-143-0210	Mapleton	60	0.007	0.003	0.000	-	-	-	-	-	-	-	-
17-195-0110	Sterling	51	0.006	0.004	0.000	-	-	-	-	-	-	-	-
17-201-0110	Rockford J. Rubin & Company	56	0.008	0.008	0.001	-	-	-	-	-	-	-	-

Table B25
2012 Toxic Compounds[1]

AQS ID	City	Compounds	Highest 24-hour Samples (ppbc)				Annual Average
			1st	2nd	3rd	4th	
17-031-4201	Northbrook	1,3 Butadiene	0.43	0.38	0.33	0.26	0.112
		Methylene Chloride	2.45	1.70	0.50	0.50	0.238
		Chloroform	9.37	8.60	3.30	0.44	0.508
		Carbon Tetrachloride	0.30	0.14	0.14	0.13	0.113
		Tetrachloroethylene	0.13	0.12	0.11	0.11	0.043
		Trichlorethylene	0.13	0.11	0.09	0.09	0.018
		1,2 Dichloropropane	0.00	0.00	0.00	0.00	0.000
		Vinyl Chloride	0.04	0.03	0.03	0.00	0.002
		Benzene	3.38	2.67	2.09	2.03	1.198
		Toluene	16.24	14.14	9.03	8.68	3.455
		Formaldehyde[3]	5.8	5.3	4.5	4.3	2.02
		Acetaldehyde[3]	4.5	4.3	3.9	3.8	1.97
		Acrolein	6.78	5.13	3.06	2.66	1.321
		Chromium VI[2]	0.09	0.05	0.04	0.04	0.016
17-031-3103	Schiller Park	1,3 Butadiene	1.62	0.53	0.46	0.46	0.248
		Methylene Chloride	1.81	0.72	0.34	0.34	0.183
		Chloroform	0.07	0.06	0.06	0.05	0.017
		Carbon Tetrachloride	0.14	0.13	0.13	0.13	0.108
		Tetrachloroethylene	0.47	0.38	0.34	0.33	0.101
		Trichlorethylene	6.50	1.70	0.90	0.59	0.262
		1,2 Dichloropropane	0.00	0.00	0.00	0.00	0.000
		Vinyl Chloride	0.05	0.02	0.01	0.00	0.002
		Benzene	8.88	6.78	5.47	2.62	1.783
		Toluene	23.03	10.15	7.28	6.15	3.112
		Formaldehyde	10.4	10.0	5.4	4.6	2.50
		Acetaldehyde	22.6	13.1	6.1	5.6	3.01
		Acrolein	10.05	6.84	5.61	2.88	1.534

[1] – Toxic metals data (As, Be, Cd, Cr, Mn, Ni) summarized in Table B24 - Filter Analysis Data

[2] – Units of nanograms per cubic meter

[3] – Units of parts per billion

Table B26
2012 $PM_{2.5}$ Speciation

AQS ID	City	Major Constituents	Highest 24-hour Samples (ug/m3)				Annual Average
			1st	2nd	3rd	4th	
17-031-0076	Chicago Com Ed Maintenance	Inorganic Elements	2.6	1.5	1.1	1.0	0.5
		Ammonium	4.7	4.0	3.7	3.4	0.9
		Nitrate	11.4	10	8.2	6.7	1.8
		Sulfate	5.0	4.3	4.0	4.0	1.8
		Elemental Carbon	1.4	1.3	1.1	1.0	0.4
		Organic Carbon	5.2	5.0	4.9	4.8	2.3
17-031-0057	Chicago Springfield Pump Station	Inorganic Elements	1.6	1.6	1.2	1.2	0.6
		Ammonium	8.6	5.4	3.1	2.8	1.1
		Nitrate	18.2	12.7	7.6	6.7	2.3
		Sulfate	9.6	5.0	4.9	4.6	2.0
		Elemental Carbon	1.4	1.4	1.2	1.1	0.5
		Organic Carbon	6.2	5.8	5.7	5.2	2.7
17-031-4201	Northbrook	Inorganic Elements	3.2	1.3	1.2	1.2	0.4
		Ammonium	4.4	4.3	3.9	3.8	0.9
		Nitrate	12.0	11.4	10.5	8.4	1.9
		Sulfate	5.7	5.3	4.8	4.6	1.8
		Elemental Carbon	1.1	1.0	0.9	0.8	0.3
		Organic Carbon	7.5	6.0	5.6	5.5	2.2
17-043-4002	Naperville	Inorganic Elements	0.7	0.7	0.6	0.6	0.4
		Ammonium	4.8	4.6	2.5	2.3	0.9
		Nitrate	12.2	9.0	6.0	6.0	1.8
		Sulfate	5.4	4.4	4.2	4.0	1.7
		Elemental Carbon	0.8	0.7	0.7	0.7	0.3
		Organic Carbon	5.2	4.2	4.2	4.1	2.2

Table B26
2012 PM2.5 Speciation

AQS ID	City	Major Constituents	Highest 24-hour Samples (ug/m3)				Annual Average
			1st	2nd	3rd	4th	
17-119-0024	Granite City Gateway Medical Center	Inorganic Elements	4.4	4.1	4.0	2.7	1.0
		Ammonium	1.6	1.6	1.3	1.1	0.4
		Nitrate	4.8	3.5	3.4	3.0	0.6
		Sulfate	4.4	4.0	3.4	3.2	1.2
		Elemental Carbon	1.1	1.0	1.0	0.8	0.5
		Organic Carbon	3.8	3.6	3.2	3.1	1.9

Table B28
2012 Carbon Dioxide (CO_2)

AQS ID	City	Annual Means (ppm)					
		2012	2011	2010	2009	2008	2007
17-117-0002	Nilwood	397	389	394	384	380	379
Hawaii	Mauna Loa	394	392	390	387	386	384

APPENDIX C
POINT SOURCE EMISSION INVENTORY SUMMARY TABLES

Table C1

Carbon Monoxide Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
External Fuel Combustion					
Electric Generation	15,185.6	15,467.6	18,540.9	19,340.9	18,188.3
Industrial	7,488.4	8,004.3	7,261.6	7,244.6	6,158.6
Commercial/Institutional	2,063.5	2,039.0	1,830.2	1,870.1	1,795.0
Space Heating	21.3	22.8	23.8	21.5	17.7
Internal Fuel Combustion					
Electric Generation	3,158.0	3,129.5	3,196.8	3,404.7	3,266.7
Industrial	5,573.0	5,878.8	5,178.2	5,185.1	5,426.0
Commercial/Institutional	409.9	373.3	355.6	300.0	260.5
Engine Testing	359.9	377.5	316.4	218.5	209.4
Industrial Processes					
Chemical Manufacturing	2,366.9	2,246.2	1,446.1	1,771.4	2,266.9
Food/Agriculture	3,483.1	3,598.5	3,237.1	3,142.9	2,857.8
Primary Metal Production	20,480.0	20,831.4	9,947.8	21,614.7	21,723.5
Secondary Metal Production	4,683.5	3,173.4	2,646.3	2,671.3	2,563.0
Mineral Products	5,524.0	4,793.9	3,640.1	2,760.4	3,195.9
Petroleum Industry	5,970.0	4,736.0	4,018.8	4,127.6	4,095.1
Paper and Wood Products	38.3	65.5	38.0	1.5	1.5
Rubber and Plastic Products	37.9	79.5	33.5	32.8	33.2
Fabricated Metal Products	299.8	272.9	235.9	232.1	224.4
Oil and Gas Production	339.5	252.2	211.5	231.2	219.2
Electrical Equipment	2.2	2.2	2.2	2.2	2.2
Transportation Equipment	8.0	5.1	5.1	3.5	
Health Services	306.6	317.6	343.1	311.4	261.2
In-Process Fuel Use	364.3	338.3	154.4	327.7	506.2
Miscellaneous Manufacturing	71.3	88.0	143.8	123.5	143.0
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.0			
Surface Coating Operations	177.6	150.8	164.8	194.3	167.5
Petroleum Product Storage	0.0	0.0			
Bulk Terminals/Plants	17.5	17.4	17.5	17.5	70.6
Printing/Publishing	10.1	5.8	5.6	6.0	6.2
Petroleum Marketing/Transport	0.0	57.4	6.7	10.5	33.4
Organic Chemical Storage (large)	0.4	0.4			
Organic Chemical Transportation	0.0	0.0			
Organic Solvent Evaporation	37.1	30.2	30.3	40.6	35.8
Solid Waste Disposal					
Government	1,526.1	1,495.1	1,993.0	2,117.5	1,813.1
Commercial/Institutional	90.6	86.9	68.7	47.3	59.7
Industrial	515.6	764.3	689.0	893.6	639.2
Site Remediation	16.2	16.2	14.2	16.2	14.0

Table C1

Carbon Monoxide Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
MACT Processes					
Food and Agriculture Processes	0.0	0.0			
Vinyl Based Resins	0.0	0.0	0.1	0.1	0.1
Totals	**80,627.9**	**78,719.6**	**65,797.2**	**78,283.1**	**76,255.0**

Table C2

Nitrogen Oxides Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
External Fuel Combustion					
Electric Generation	118,842.1	121,547.1	73,871.1	77,280.9	69,919.6
Industrial	14,271.4	14,397.1	11,915.1	13,211.3	11,095.2
Commercial/Institutional	2,904.5	2,783.7	2,527.3	2,550.5	2,337.5
Space Heating	105.2	114.3	117.4	106.2	88.5
Internal Fuel Combustion					
Electric Generation	4,447.1	3,220.6	2,820.0	2,759.3	2,894.1
Industrial	22,643.7	21,769.7	20,921.5	20,450.5	21,002.4
Commercial/Institutional	887.9	829.0	773.8	573.2	488.1
Engine Testing	939.2	896.3	573.2	578.8	691.8
Industrial Processes					
Chemical Manufacturing	1,223.8	1,197.9	1,484.9	1,468.7	1,395.4
Food/Agriculture	1,300.7	1,617.3	1,751.1	1,412.2	1,415.5
Primary Metal Production	2,298.8	2,251.9	1,199.6	2,499.3	1,780.2
Secondary Metal Production	1,303.2	1,182.3	865.9	982.3	721.5
Mineral Products	16,048.8	13,508.7	8,692.5	8,117.8	8,904.9
Petroleum Industry	11,237.7	8,564.1	7,751.7	7,468.6	5,373.0
Paper and Wood Products	35.4	17.0	6.9	1.3	1.3
Rubber and Plastic Products	36.3	84.5	42.4	40.9	40.7
Fabricated Metal Products	395.5	363.5	316.9	304.7	308.0
Oil and Gas Production	830.7	811.3	756.3	600.9	800.4
Miscelaneous Machinery	2.6	9.1	9.2	9.2	0.2
Electrical Equipment	3.4	2.9	3.0	3.0	3.0
Transportation Equipment	0.2	0.1	0.2	0.1	
Health Services	7.1	7.0	7.1	7.1	6.6
Textile Products	0.9	0.9	0.9	0.9	0.9
In-Process Fuel Use	1,653.4	1,596.1	450.1	1,077.8	731.7
Miscellaneous Manufacturing	41.5	46.5	53.8	47.3	30.6
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.0			
Surface Coating Operations	413.4	394.0	415.8	459.2	368.6
Petroleum Product Storage	0.0	0.0			
Bulk Terminals/Plants	16.4	16.4	16.4	16.5	27.8
Printing/Publishing	13.7	13.2	9.0	8.8	8.6
Petroleum Marketing/Transport	2.3	25.3	4.8	7.0	28.6
Organic Chemical Storage (large)	0.1	0.1			
Organic Chemical Transportation	0.0	0.0			
Organic Solvent Evaporation	42.3	40.0	40.1	42.6	42.8

Table C2

Nitrogen Oxides Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
Solid Waste Disposal					
Government	779.5	567.7	681.3	643.8	562.0
Commercial/Institutional	18.3	16.8	14.3	14.3	14.5
Industrial	240.0	258.8	226.9	263.2	219.1
Site Remediation	24.9	24.9	22.7	26.6	22.4
MACT Processes					
Food and Agriculture Processes	0.0	0.0			
Vinyl Based Resins	0.4	0.4	0.4	0.4	0.4
Totals	**203,013.7**	**198,178.1**	**138,343.8**	**143,035.4**	**131,326.0**

Table C3

PM_{10} Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
External Fuel Combustion					
Electric Generation	7,740.7	8,454.8	8,065.1	8,134.8	8,093.0
Industrial	1,779.6	1,739.4	1,553.5	1,601.1	1,536.3
Commercial/Institutional	285.5	282.0	245.6	273.2	273.6
Space Heating	3.5	3.6	3.9	3.5	3.1
Internal Fuel Combustion					
Electric Generation	295.0	229.2	243.0	283.3	525.0
Industrial	320.4	315.7	275.7	260.9	286.9
Commercial/Institutional	37.4	43.7	43.9	36.9	31.5
Engine Testing	21.9	29.6	19.7	14.1	15.1
Industrial Processes					
Chemical Manufacturing	961.9	943.2	927.9	949.1	872.9
Food/Agriculture	7,516.1	7,083.1	7,141.3	6,737.9	6,355.6
Primary Metal Production	1,269.4	1,213.7	790.9	1,301.2	1,222.5
Secondary Metal Production	1,575.5	1,573.9	1,351.6	1,265.0	1,232.5
Mineral Products	8,347.5	6,565.1	6,486.5	5,651.0	5,052.2
Petroleum Industry	1,990.6	1,708.4	1,593.4	993.7	1,007.8
Paper and Wood Products	252.5	227.6	219.4	180.1	167.2
Rubber and Plastic Products	159.9	189.5	192.7	192.2	173.3
Fabricated Metal Products	273.3	282.9	320.8	266.5	227.5
Oil and Gas Production	6.0	7.0	7.5	11.6	13.4
Building Construction	0.0	3.0	2.0	1.6	1.6
Miscelaneous Machinery	13.4	13.4	13.5	13.5	13.2
Electrical Equipment	3.5	2.8	2.5	2.4	1.8
Transportation Equipment	17.6	14.0	7.8	18.7	19.5
Health Services	74.2	83.2	94.2	93.5	8.9
Leather and Leather Products	3.3	3.3	3.3	3.3	17.2
Textile Products	0.0	0.0	0.1	0.1	0.1
Process Cooling	387.1	375.3	384.4	402.7	422.4
In-Process Fuel Use	150.2	143.7	43.3	144.8	82.5
Miscellaneous Manufacturing	33.9	30.0	25.3	22.3	15.0
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.0			1.5
Surface Coating Operations	229.0	224.7	199.7	199.4	197.2
Petroleum Product Storage	0.0	0.0			
Bulk Terminals/Plants	1.3	1.3	12.9	1.3	2.6
Printing/Publishing	6.1	3.1	2.9	11.1	11.7
Petroleum Marketing/Transport	0.0	0.4	0.4	0.8	2.3
Organic Chemical Storage (large)	6.3	3.7	4.8	4.8	4.4
Organic Chemical Transportation	0.0	0.0			
Organic Solvent Evaporation	1.7	1.7	1.7	6.6	7.0

Table C3

PM_{10} Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
Solid Waste Disposal					
Government	354.1	349.8	355.9	401.5	406.7
Commercial/Institutional	16.1	14.9	11.0	9.8	15.1
Industrial	106.7	95.9	84.7	102.6	112.2
Site Remediation	84.8	75.9	48.2	50.8	43.0
MACT Processes					
Food and Agriculture Processes	0.0	0.0	0.0	0.0	0.0
Styrene or Methacrylate Based Resins	1.9	0.7	0.8	0.8	0.2
Alkyd Resin Production	3.8	72.0	4.8	3.0	0.6
Vinyl Based Resins	127.3	129.8	129.9	129.9	63.6
Miscellaneous Polymers	8.5	9.8	9.6	9.6	6.9
Inorganic Chemicals			0.3	0.3	0.3
Consumer Products Manufacturing	0.3	0.3	0.2	0.2	0.2
Paint Stripper Use	0.2	0.2			
Miscellaneous Processes	1.0	1.0	1.0	1.0	1.0
Phthalate Plasticizers Production	3.1	3.1	3.2	3.2	3.2
Totals	**34,474.1**	**32,551.4**	**30,930.9**	**29,795.9**	**28,623.9**

Table C4

Sulfur Dioxide Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
External Fuel Combustion					
Electric Generation	284,032.6	271,264.7	242,045.6	230,522.6	216,854.5
Industrial	35,257.4	35,929.6	30,458.6	30,428.2	29,303.3
Commercial/Institutional	5,227.7	4,528.6	4,265.9	4,828.9	4,167.1
Space Heating	0.9	0.6	0.8	0.7	0.5
Internal Fuel Combustion					
Electric Generation	163.8	185.8	330.8	497.9	445.2
Industrial	147.9	118.5	108.9	84.8	86.1
Commercial/Institutional	60.4	55.4	64.8	48.6	48.4
Engine Testing	19.5	99.6	66.7	8.8	12.2
Industrial Processes					
Chemical Manufacturing	9,901.2	8,107.9	1,020.1	1,462.5	1,440.5
Food/Agriculture	1,602.3	1,387.4	1,341.0	1,464.4	1,365.4
Primary Metal Production	2,413.2	2,282.7	1,119.7	2,425.3	2,954.6
Secondary Metal Production	130.1	151.3	122.0	124.7	119.9
Mineral Products	18,028.2	17,905.4	13,347.2	14,814.3	14,409.7
Petroleum Industry	45,037.0	29,034.1	7,875.6	6,138.4	3,119.6
Paper and Wood Products	1.2	1.7	0.6	0.0	0.0
Rubber and Plastic Products	4.5	4.8	4.7	4.6	4.6
Fabricated Metal Products	16.3	16.3	16.2	16.1	33.4
Oil and Gas Production	618.1	402.9	378.3	378.4	332.8
Electrical Equipment	0.0	0.0	0.0	0.0	0.0
Transportation Equipment	0.1	0.1	0.1	0.1	0.0
Health Services	7.6	7.6	7.7	7.7	7.5
Process Cooling	2.0	2.0	0.0	0.0	0.0
In-Process Fuel Use	3,227.5	3,082.3	669.3	416.7	209.9
Miscellaneous Manufacturing	28.4	28.4	63.0	71.5	60.1
Organic Solvent Emissions					
Surface Coating Operations	0.0	0.0	3.1	3.3	3.4
Petroleum Product Storage	3.0	2.6	7.7	7.7	7.7
Printing/Publishing	0.0	7.4	0.0	0.4	0.1
Petroleum Marketing/Transport				0.4	1.3
Organic Chemical Transportation	0.0	0.0			5.9
Organic Chemical Storage (large)	0.1	0.0	0.1	0.1	0.1
Organic Solvent Evaporation	3.2	3.1	3.2	3.2	3.2

Table C4

Sulfur Dioxide Point Source Emission Distribution (Tons/Year)

Category	2008	2009	2010	2011	2012
Solid Waste Disposal					
Government	378.0	425.9	691.8	886.3	712.1
Commercial/Institutional	3.7	3.2	2.7	2.7	2.8
Industrial	380.9	559.0	487.3	802.7	495.9
Site Remediation	6.0	5.6	5.7	6.5	4.3
MACT Processes					
Food and Agriculture Processes	200.5	200.5	199.7	199.7	199.7
Totals	**406,904.8**	**375,806.5**	**304,708.9**	**295,658.3**	**276,412.0**

Table C5

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

Category	2008	2009	2010	2011	2012
External Fuel Combustion					
Electric Generation	1,602.0	1,582.7	1,312.9	1,419.0	1,445.1
Industrial	482.3	385.3	354.3	351.5	332.1
Commercial/Institutional	116.0	106.9	101.3	103.6	113.5
Space Heating	5.4	5.7	6.2	5.6	3.4
Internal Fuel Combustion					
Electric Generation	715.5	709.6	656.5	793.2	682.4
Industrial	1,044.5	1,043.1	1,032.3	1,119.9	1,207.2
Commercial/Institutional	74.0	68.4	70.7	59.6	46.1
Engine Testing	64.8	125.9	116.7	51.6	47.9
Fugitive Emissions					
Industrial Processes					
Chemical Manufacturing	7,502.8	6,606.6	6,349.6	6,452.1	6,130.2
Food/Agriculture	11,785.6	11,887.5	10,549.7	10,443.2	10,209.9
Primary Metal Production	709.5	681.1	379.9	497.0	527.3
Secondary Metal Production	1,209.6	1,024.8	812.4	727.1	760.2
Mineral Products	1,734.3	1,702.0	1,504.6	1,605.9	1,494.1
Petroleum Industry	2,098.4	2,068.4	2,021.2	1,914.2	2,054.5
Paper and Wood Products	178.8	150.2	169.3	213.3	207.6
Rubber and Plastic Products	2,322.9	2,200.9	2,130.5	1,921.4	1,991.6
Fabricated Metal Products	810.7	778.1	748.3	653.0	582.8
Oil and Gas Production	321.7	302.7	314.1	305.8	305.3
Miscelaneous Machinery	86.9	90.7	65.9	57.4	56.5
Electrical Equipment	87.3	64.2	50.9	48.3	40.9
Transportation Equipment	342.1	261.3	135.8	107.6	137.8
Health Services	42.2	41.9	47.7	43.7	32.0
Leather and Leather Products	50.4	50.0	42.7	16.9	16.9
Textile Products	5.4	3.0	3.0	3.0	3.0
Process Cooling	212.9	225.0	272.5	275.8	68.0
In-Process Fuel Use	25.2	20.7	18.5	9.7	36.6
Miscellaneous Manufacturing	273.2	255.0	196.7	179.1	179.0
Organic Solvent Emissions					
Organic Solvent Use	630.0	646.4	607.5	527.8	495.0
Surface Coating Operations	8,786.0	7,707.3	6,644.3	6,367.3	6,892.8
Petroleum Product Storage	3,034.0	2,970.0	3,083.8	2,937.9	2,706.9
Bulk Terminals/Plants	1,225.3	1,350.8	1,338.1	1,188.6	1,087.2
Printing/Publishing	4,845.3	5,061.3	4,675.8	3,908.0	3,522.2
Petroleum Marketing/Transport	467.9	464.9	548.9	515.5	601.2
Organic Chemical Storage (large)	1,114.4	1,207.0	1,100.8	819.4	742.6
Organic Chemical Transportation	84.5	106.9	84.1	94.7	95.3
Dry Cleaning (petroleum based)	611.8	565.3	524.1	503.8	462.1
Organic Chemical Storage (small)	0.0	0.0			
Organic Solvent Evaporation	512.1	556.4	525.4	505.6	435.3

Table C5

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

Category	2008	2009	2010	2011	2012
Solid Waste Disposal					
Government	408.2	454.9	420.2	339.0	361.5
Commercial/Institutional	8.3	6.9	5.4	5.4	5.4
Industrial	92.1	94.8	80.0	396.3	100.2
Site Remediation	738.3	464.2	386.7	327.9	227.8
MACT Processes					
Food and Agriculture Processes	23.8	100.3	26.0	26.0	26.0
Agricultural Chemical Production	1.0	1.0	1.1	1.1	0.1
Styrene or Methacrylate Based Resins	40.1	17.6	16.2	16.6	6.5
Alkyd Resin Production	78.0	86.8	87.7	57.5	61.3
Vinyl Based Resins	89.7	100.7	94.1	113.3	89.7
Miscellaneous Polymers	14.2	0.9	1.0	1.0	1.0
Inorganic Chemicals Manufacturing	16.2	16.2	16.3	16.3	16.3
Consumer Product Mfg Facilities	392.9	228.6	228.8	260.1	292.7
Paint Stripper Use	3.0	3.0	3.0	3.1	3.1
Miscellaneous Processes	11.1	12.0	12.0	12.5	12.3
Phthalate Plasticizers Production	0.0	0.0			
Totals	**57,135.4**	**54,668.4**	**49,975.4**	**48,323.0**	**46,956.6**

Table C6

2011

Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
Adams	322.0	483.2	264.8	989.5	662.5
Alexander	56.8	117.6	56.0	272.2	319.2
Bond	15.1	10.9	19.7	0.3	26.6
Boone	139.1	132.4	79.0	27.5	471.1
Brown	0.0	0.0	2.8	0.0	0.0
Bureau	21.2	33.4	57.2	0.4	45.7
Calhoun	0.6	0.7	5.9	0.0	0.1
Carroll	25.2	25.0	31.1	1.1	24.2
Cass	38.3	38.2	35.1	48.7	30.2
Champaign	392.5	870.1	183.6	519.6	398.5
Christian	1,000.4	11,921.1	310.6	11,808.0	459.9
Clark	97.8	5.9	75.1	3.6	125.3
Clay	23.2	12.8	37.9	0.2	113.9
Clinton	944.3	2,971.4	78.4	299.1	202.1
Coles	220.8	242.7	109.8	53.5	565.2
Cook	12,125.2	8,974.9	3,565.5	13,862.4	7,780.7
Crawford	1,175.4	2,787.6	591.9	15,479.5	1,245.1
Cumberland	4	4.7	19.7	0.0	28.9
DeKalb	103.2	93.3	64.7	89.0	162.6
DeWitt	165.7	80.2	80.6	15.5	58.8
Douglas	1,195.6	4,611.4	182.9	10,124.1	462.0
DuPage	829.0	860.6	302.6	143.9	1,523.5
Edgar	9.7	51.1	74.5	0.0	150.1
Edwards	0.9	2.6	11.3	0.4	13.2
Effingham	13.9	25.7	62.1	0.4	286.4
Fayette	63.8	221.9	32.0	332.2	36.2
Ford	73.8	140.8	221.1	41.7	825.7
Franklin	21.4	21.0	75.4	5.4	162.3
Fulton	418.2	1,216.7	118.8	259.0	188.5
Gallatin			25.3		0.0
Greene	16.6		16.8	0.2	0.4
Grundy	611.2	1,080.4	363.4	89.3	647.4
Hamilton	1.1	3.9	32.8	0.1	0.9
Hancock	1.7	0.1	35.8	0.0	3.2

Table C6

2011

Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
Hardin	4.7	7.5	59.6	0.0	2.1
Henderson	0.7	1.3	14.6	2.5	2.5
Henry	579.3	1,474.2	159.0	19.2	317.1
Iroquois	29.6	20.8	117.3	4.3	452.9
Jackson	163.9	133.4	37.2	500.4	45.3
Jasper	1,097.6	3,928.8	461.4	20,815.7	154.2
Jefferson	48.9	53.1	34.0	0.5	347.1
Jersey	0.7		7.4		10.3
Jo Daviess	699.9	636.1	160.6	2.2	353.9
Johnson	24.7	21.6	10.6	237.4	6.2
Kane	727.8	565.0	205.0	82.2	1,041.4
Kankakee	632.4	787.9	289.6	106.9	782.9
Kendall	467.5	903.4	143.8	20.1	283.1
Knox	24.8	25.2	80.7	1.8	44.6
Lake	2,288.6	3,489.2	911.0	10,192.7	613.4
La Salle	1,130.6	2,365.4	869.8	635.3	918.1
Lawrence	6.7	5.2	11.5	1.3	26.3
Lee	472.4	487.8	342.8	139.5	332.6
Livingston	351.1	393.5	119.6	53.9	273.5
Logan	62.8	448.3	138.6	464.4	67.8
McDonough	84.9	105.2	41.8	387.5	161.3
McHenry	255.6	328.2	200.4	6.6	378.4
McLean	211.5	300.8	212.0	9.5	835.6
Macon	2,974.0	4,523.7	2,547.2	12,901.8	4,716.9
Macoupin	6.0	6.5	46.8	0.0	4.9
Madison	18,351.5	7,631.6	1,859.1	12,911.5	3,180.5
Marion	41.6	52.5	50.4	14.1	611.8
Marshall	22.7	146.4	137.4	82.7	350.3
Mason	503.2	1,150.6	80.9	7,348.8	74.8
Massac	1,733.9	9,963.5	1,122.6	27,252.9	398.0
Menard			19.1		6.7
Mercer	0.4	0.5	17.7	0.0	2.9
Monroe	6.5	12.6	14.9	0.5	14.5
Montgomery	769.5	1,455.2	118.3	88.1	153.6

Table C6

2011

Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
Morgan	297.2	1,445.0	116.8	3,503.4	135.9
Moultrie	1.9	2.8	35.1	0.1	283.6
Ogle	569.1	355.4	350.9	372.0	870.0
Peoria	2,097.2	5,107.9	750.3	14,074.9	2,198.3
Perry	119.2	99.4	47.1	0.8	19.1
Piatt	393.0	4,004.3	50.4	0.6	118.3
Pike	170.9	657.8	100.3	1,313.1	37.1
Pope					
Pulaski	40.1	67.8	27.5	14.4	8.0
Putnam	410.8	1,752.0	211.1	7,097.1	166.2
Randolph	1,950.2	4,856.0	1,062.2	19,205.1	374.4
Richland	0.6	2.6	5.7	0.0	12.1
Rock Island	506.5	550.5	183.9	1,326.6	712.2
St. Clair	484.9	340.3	321.2	162.3	653.3
Saline	23.0	9.0	28.1	7.6	18.1
Sangamon	573.1	1,831.8	746.0	3,316.5	173.8
Schuyler	5.2	6.1	8.6	0.0	6.1
Scott	31.9	20.5	36.5	6.3	2.6
Shelby	9.8	58.8	55.8	1.4	52.2
Stark			17.2		4.5
Stephenson	49.6	86.8	93.8	5.0	190.9
Tazewell	964.9	14,123.8	1,812.1	34,192.8	977.5
Union	61.4	61.9	40.0	822.2	5.8
Vermilion	322.4	407.2	199.2	11.7	1,922.5
Wabash	3.0	2.9	41.2	2.5	8.1
Warren	33.5	39.7	65.8	135.5	7.3
Washington	322.0	191.4	122.0	305.9	43.2
Wayne	528.0	1,488.0	23.1	18.2	107.9
White	476.8	682.9	27.9	2.8	31.7
Whiteside	1,629.6	447.6	156.7	231.3	212.3
Will	8,519.5	12,061.8	3,294.0	32,890.6	2,657.1
Williamson	1,090.0	1,723.2	147.3	8,533.4	182.1
Winnebago	658.2	361.0	531.1	106.3	651.5
Woodford	7.8	12.1	48.6	0.5	126.7

Table C7

Annual Estimated Emissions Trends (Tons)

Year	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
1981	240,421	826,427		1,577,992	270,814
1982	163,704	693,054		1,404,040	233,951
1983	144,622	759,453		1,363,292	207,405
1984	110,922	746,367		1,435,066	197,418
1985	107,876	715,556		1,406,300	191,070
1986	109,777	676,181		1,400,761	180,148
1987	98,213	644,511		1,379,407	176,406
1988	127,758	653,521		1,393,628	165,792
1989	132,214	610,214		1,254,474	193,499
1990	134,744	623,466		1,272,445	170,378
1991	148,667	619,161		1,239,690	154,008
1992	129,054	610,214	181,775	1,228,949	156,867
1993	130,097	556,460	113,482	1,170,549	152,288
1994	127,848	555,893	50,730	1,158,555	140,492
1995	127,661	505,966	48,839	1,273,786	141,381
1996	130,040	495,267	43,950	1,183,278	139,445
1997	117,046	510,729	41,078	1,197,404	136,541
1998	108,117	509,676	43,392	1,196,461	134,924
1999	120,906	421,993	40,598	1,085,828	99,121
2000	122,702	424,609	36,885	1,070,058	101,147
2001	96,970	358,263	34,233	653,797	95,221
2002	99,173	301,216	30,422	531,343	90,014
2003	88,367	289,921	41,589	512,321	89,579
2004	80,479	248,245	42,402	507,142	84,080
2005	83,671	238,026	40,359	522,677	75,690
2006	89,717	219,200	37,979	487,588	70,858
2007	80,969	205,602	34,847	429,976	59,021
2008	80,628	203,014	34,474	406,905	57,135
2009	78,720	198,178	32,551	375,807	54,668
2010	65,797	138,344	30,931	304,709	49,975
2011	78,283	143,035	29,796	295,658	48,323
2012	76,255	131,326	28,624	276,412	46,957

Table C8

Annual Source Reported Emissions Trends (Tons)

Year	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
1992	112,403	381,938	49,377	1,045,113	143,853
1993	113,781	418,209	36,737	1,001,123	108,847
1994	116,192	404,486	34,086	967,213	108,897
1995	160,256	366,978	31,491	814,229	103,144
1996	84,258	407,683	30,850	914,295	87,271
1997	71,408	404,289	25,648	974,232	76,350
1998	79,147	377,191	31,828	964,262	77,952
1999	91,153	360,850	27,663	863,759	71,514
2000	90,315	329,141	30,482	620,592	71,063
2001	83,453	291,778	28,929	531,504	62,647
2002	83,795	261,202	26,900	498,754	70,703
2003	75,511	230,068	29,939	507,338	63,495
2004	77,847	229,127	31,896	521,808	64,594
2005	85,892	215,366	30,535	486,534	62,251
2006	77,099	200,832	29,367	429,573	53,791
2007	77,211	198,073	28,784	406,405	50,933
2008	75,183	193,637	28,194	376,627	49,112
2009	62,285	134,274	25,988	305,297	41,839
2010	75,277	139,508	25,993	297,254	44,245
2011	73,586	129,058	25,209	272,747	42,430

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 Illinois EPA 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 Illinois EPA 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 Illinois EPA'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 Illinois EPA 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 air pollution advisories 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 Illinois EPA 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 Illinois EPA. Under the Clean Air Act Permit Program 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 Illinois EPA's enforcement activities when violations are discovered. Approximately 3,000 investigations and inspections are conducted each year.

Table D1

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Appendix E
Links

Illinois EPA's Website Information

To access the online version of the Annual Air Quality Report, the evening Air Quality Index numbers, various pollutant averages and exceedances, the monitoring network plan and emission trends:

- http://www.epa.state.il.us/air/air-quality-menu.html

Air Quality Index Information

To view current Air Quality Index numbers and forecasts across the country:

- http://www.airnow.gov

To sign up for air quality information such as forecasts and pollution alerts:

- http://www.illinois.enviroflash.info/signup.cfm

EnviroFlash on Twitter:

- http://www.illinois.enviroflash.info/EnviroFlashTwitter.cfm

Monitoring Data Access Information

To access yearly Air Quality Index summaries, air quality statistics and monitoring concentrations:

- http://www.epa.gov/airdata

To access more detailed monitoring data:

- http://www.epa.gov/ttn/airs/aqsdatamart
- http://www.epa.gov/ttn/airs/airsaqs/detaildata (click "files of detailed data")

To access historical Design Values (statistic to compare to the National Ambient Air Quality Standards):

- http://www.epa.gov/airtrends/values.html

Nonattainment Areas and Designations (regions in violation of the various National Ambient Air Quality Standards):

- http://www.epa.gov/oar/oaqps/greenbook/index.html

Other

- Ambient Monitoring Technology Information Center: http://www.epa.gov/ttnamti1
- Midwest Haze Camera Network: http://www.mwhazecam.net
- Toxic Release Inventory Search: http://iaspub.epa.gov/triexplorer/tri_release.chemical

Greenhouse Gas Emissions Report

Illinois EPA

June 2013

Illinois Environmental Protection Agency (Illinois EPA)
Greenhouse Gas Emissions Report

This report is required pursuant to Executive Order 2006-11, EXECUTIVE ORDER ON CLIMATE CHANGE AND GREENHOUSE GAS REDUCTION, issued by Governor Rod R. Blagojevich on October 5, 2006. Executive order 2006-11 states *"The Illinois Environmental Protection Agency shall produce an annual report to the Governor at the end of each fiscal year tracking statewide greenhouse gas emissions in Illinois and forecasted trends…"*

This is the sixth annual report provided by the Illinois EPA. This report provides information on statewide greenhouse gas (GHG) emissions and forecasted GHG emissions and trends. In 2011, Illinois passed Public Act 97-95 which streamlined the permitting process for sources emitting regulated air pollutants. As part of this, greenhouse gases were defined as regulated air pollutants but exempted from permitting fees. As regulated air pollutants, greenhouse gases are required to be reported on a source's Annual Emission Report (AER). The federal government began regulating GHG pollutants in 2011. As these pollutants were not regulated previously, the Illinois EPA's emission inventory did not historically include emissions of these pollutants.

GHG emissions and forecasted trends for all sectors, including those not regulated by the Illinois EPA, are found in Section IV. Illinois Greenhouse Gas Inventory and Projections to 2020 of the *Report of the Illinois Climate Change Advisory Group* (ICCAG report), found at: http://www.epa.state.il.us/air/climatechange/ However, GHG emissions from sectors not regulated by the Illinois EPA, such as the residential, transportation and agriculture sectors, are also presented in the attached Illinois Greenhouse Gas Inventory for 2011 (GHG Report for 2011).

It is believed that the information contained in the ICCAG report remains the most comprehensive, detailed, and reliable data available on GHG emissions and trends in Illinois. In addition, every three years, the Illinois EPA is required to conduct a full state-wide emissions inventory for all source categories (i.e., point, area, mobile) of the criteria pollutants (i.e. lead, ozone, particulate matter, nitrogen dioxide, carbon monoxide and sulfur dioxide). While compiling the required ozone and particulate matter (PM) inventories in 2011, the Illinois EPA also compiled a statewide greenhouse gas inventory. The GHG Report for 2011 (AQPSTR13-04), Table 2-2, provides information on GHG emissions data by sector and GHG.

Table 2-2: Greenhouse Gas Emissions (tons/year)

Pollutant	Point	Area	On-Road	Off-Road	Animal Husbandry	Total
CO2	162,428,413.14	51,120,116.24	63,766,580.64	12,602,405.25		296,797,350.86
Methane	111,425.56	16,813.24	3,883.88		110,193.37	242,500.91
N2O	8,061.44	999.28	1,867.95			11,095.25
CF4	1.24					1.24
HFC134a	230.72					230.72
CO2e	167,575,391.99	51,782,972.63	64,427,206.91	12,602,405.25	2,314,060.69	298,702,037.47

A more detailed description of the methods used to calculate emissions is described in the documents “Illinois Ozone Emission Inventory for 2011” (AQPSTR 13-02) and “Illinois PM and Haze Emission Inventory for 2011” (AQPSTR 13-03).

The Illinois Greenhouse Gas Inventory for 2011 includes statewide emissions by source category. These are delineated in the bar charts of Figures 2-1 through 2-6 of the Illinois Greenhouse Gas Inventory for 2011, appended. The pie charts of Figures 2-7 through 2-13 present the contribution of each source category’s emissions for each pollutant. Figure 2-13 identifies the contribution of carbon dioxide equivalent (CO2e) emissions based upon fuel type.

In addition, category summaries by pollutant for the 2011 statewide inventory are given in Appendix A to the GHG Report for 2011. Appendix B to the GHG Report for 2011 presents a county-by-county summary of point, area, on-road and off-road emissions.

On September 22, 2009, the United States Environmental Protection Agency (USEPA) issued a final rule on the Mandatory Reporting of Greenhouse Gas Emissions. Fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons or more of carbon dioxide (CO2) equivalent per year will be required to report GHG emissions data to USEPA annually. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to USEPA in 2011. Vehicle and engine manufacturers outside of the light-duty sector began phasing in GHG reporting with model year 2011. Some source categories included in the proposed rule are still under review. The Illinois EPA will have access to this database of emissions and as a result will be able to more accurately determine GHG emissions in Illinois in the future. Currently, the Illinois EPA can only restate the GHG figures from the 2012 Greenhouse Gas Emission Report, AERs, and add information from the GHG Report for 2011.

The primary source of data for point sources in the GHG Report for 2011 was the source-reported 2011 AERs. Area source emissions are typically estimated by multiplying an emission factor by a known indicator of activity (e.g., population) for a source category. On-road mobile source emissions were calculated using the MOVES model. Off-road mobile source emissions were calculated using the National Mobile Inventory Model (NMIM) computer model. The off-road calculation does not include aircraft, locomotives, and commercial marine vessels. The completeness of the inventory continues to improve. The requirement of sources to report greenhouse gas emissions on the annual emission report not only led to better data, new categories of sources were provided where the Agency had no data previously. It is important to note that due to lack of existing emission factors, some categories of emissions have not been included in the inventory. These categories include some forms of point sources such as incineration facilities, area sources such as open burning and residential wood combustion, and off-road sources such as locomotives and aircraft. A more thorough discussion of sources not included in the report can be found at page 3 of the GHG Report for 2011.

Table 1, below, ranks Illinois GHG emissions in relation to various other states.

Table 1

Top 10 GHG Emitting States (2003)		**$MtCO_2Eq$**	**% of US**
1	Texas	772.2	11.5%
2	California	449.8	6.7%
3	Ohio	300.4	4.5%
4	Pennsylvania	298.2	4.4%
5	**Illinois**	**274.9**	**4.1%**
6	Indiana	271.7	4.0%
7	Florida	270.0	4.0%
8	New York	240.7	3.6%
9	Michigan	210.9	3.1%
10	Louisiana	202.6	3.0%

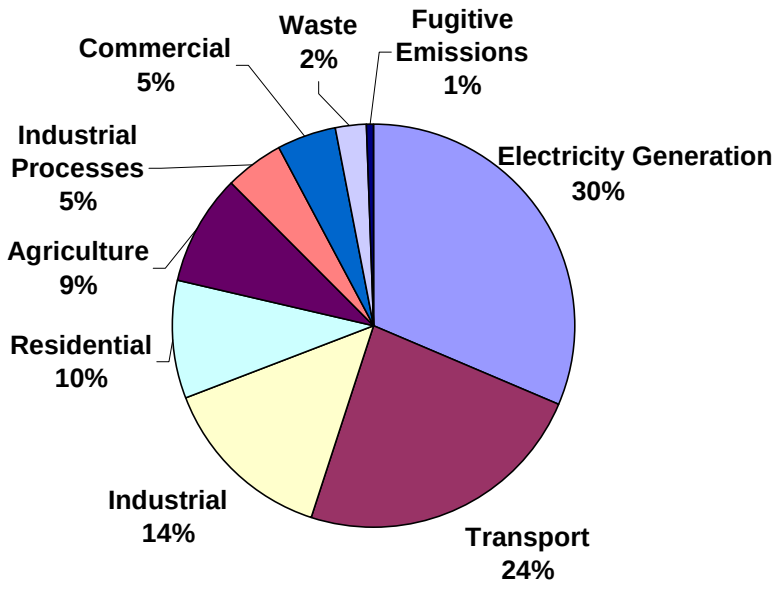
The primary source of data for point sources in the GHG Report for 2011 was the source-reported 2011 AERs. Area source emissions are typically estimated by multiplying an emission factor by a known indicator of activity (e.g., population) for a source category. On-road mobile source emissions were calculated using the MOVES model. Off-road mobile source emissions were calculated using the NMIM computer model. It is Illinois EPA's intention to continue compiling a state-wide greenhouse gas inventory on the same cycle as the ozone and PM inventories. As more sources report and methods to calculate emissions improve, the quality of the inventory should increase.

Tables A-1 to Appendix A of the GHG Report for 2011 provides further information on Illinois emissions data by sector and GHG. Information by sector is related in Table 2 and Figure 1 below.

Table 2

Illinois Emissions by Sector (2003)	MtCO2eq.	%
Total – All GHGs	**274.9**	
Total Energy	**230.7**	84%
Electricity Gen.	85.9	30%
Residential	26.4	10%
Commercial	12.6	5%
Industrial	38.4	14%
Transportation	65.5	24%
Fugitive Emissions	1.9	1%
Industrial Processes	13.1	5%
Agriculture	24.4	9%
Waste	6.8	2%

Figure 1



The Illinois EPA continues to develop its own database for GHG emissions from stationary point sources. The 2007 reporting year was the first year that sources voluntarily reported GHG emissions. Approximately 60% of the sources that had GHG emissions revised their emissions. Sources continued to optionally report GHG emissions for 2008. For the 2008 reporting cycle, if a source did not update its GHG emissions on its annual emissions report, the Illinois EPA took the time to calculate the

revised value. Often, this value was based upon the reported fuel use (and standard emission factors). In the cases where a source was not required to report fuel use, the GHG emissions were calculated using the previous year's GHG emissions and the ratio of the reported nitrogen oxide (NOx) emissions for the current reporting year to the previous reporting year (e.g., if NOx emissions decreased 10% from the previous year, the GHG emissions were also assumed to decrease 10%).

Point source emission numbers for the year 2011is now also available at Table 2-3 to the GHG Report of 2011.

Reported Point Source Emissions

Year	CO2	Methane	N2O	CF4	HFC134a
2007	146,918,112	4,640.8	7139.2		
2008	149,842,120	5,501.5	8159.8		18.7
2009	139,838,799	5,554.9	7439.9		14.2
2010	155,939,648	24,245.3	7776.1	0.3	12.7
2011	147,080,159	107,438.6	7462.5		262.4

These emission rates are only for those sources that are required to report under the Annual Emission Report rule (sources that have a permit with the Bureau of Air). 35 Ill. Adm. Code Part 254. These numbers do not include many area sources (e.g., residential or commercial fuel combustion, dry cleaners, and other sources exempt from permit requirements), and on-road motor vehicles or off-road motor vehicles. However, such sources are included in the Illinois GHG Report for 2011(attached).

The reporting of GHG emissions is now mandatory in Illinois. Data reported by the sources is used to update the Illinois EPA's estimate of GHG emissions. Statewide emissions by type of source are available in Table A-1 in Appendix A to the GHG Report for 2011. Emissions of carbon dioxide equivalent at the county level are available in Table B-1 in Appendix B to the GHG Report for 2011. Percentage contribution of GHG emissions by source and fuel can be found in the GHG Report for 2011 in Figures 2-7 to 2-13.

Projection of Illinois GHG Emissions (2003-2020)

The ICCAG report contains a projection of Illinois GHG emissions through 2020. We believe the information in this report remains the most comprehensive and accurate available. In the report, World Resources Institute (WRI) presented three emissions forecasts through 2020, referred to as "low," "best guess," and "high". In the low case, emissions increased at an average annual rate of 0.64 percent between 2003 and 2020. Under this scenario, emissions grow to 306.3 $MtCO_2e$ by 2020, an increase of 29.1 percent above 1990 levels. In the high case projection, emissions increase at an

average annual rate of 1.39 percent between 2003 and 2020. Under this scenario emissions are 347.8 $MtCO_2e$ in 2020 or 46.6 percent above 1990 levels.

Under the best guess case, GHG emissions in Illinois are projected to increase at an average annual rate of 1.0 percent between 2003 and 2020. By 2020, Illinois' emissions are projected to grow to 325.5 $MtCO_2e$, an increase of 50.5 $MtCO_2e$ over 2003 levels, or 18.4 percent. Compared to 1990 emissions, 2020 projected emissions represent an increase of 88.2 $MtCO_2e$, or 37.2 percent.

Under the best guess case, projected emissions growth, though substantial, is slower than the projected growth for the nation as a whole. The rate of growth is just slightly lower than historic emissions growth in Illinois between 1990 and 2003 and is therefore seen as the most plausible scenario. Illinois' projected emissions are expected to be driven by a continuing increase in emissions from electric power generation from fossil fuels. Emissions from transportation are also expected to increase substantially. These projections are based on regional growth rates for energy consumption developed by the Energy Information Administration and published in the Annual Energy Outlook 2006. Projected emissions for electric power, waste agriculture and industrial processes are derived from historic trends.