

**Citizens' Guide  
To  
Urban Community Air Toxics Monitoring Project, Paterson City, NJ**

**This document presents the major points in the Urban Community Air Toxics Project. For more detailed information, please refer to the final report.**

**Introduction**

The United States Environmental Protection Agency (USEPA) awarded \$495,242 to the New Jersey Department of Environmental Protection (NJDEP) as part of its competitive grants program - National Air Toxics Monitoring Program-Community Assessments. This program is designed to fund pilot projects to help communities and governments characterize, track, and reduce air pollutants. Approximately 30 other proposals were awarded similar grants under this program.

The study's purpose was to develop tools and methods so that the NJDEP and the community can better understand the types and sources of air pollutants in typical New Jersey urban settings. Paterson was chosen for this study because it is a good example of an urban setting in which industrial, mobile, commercial and residential areas are in close proximity to each other and not because of observed or suspected air quality problems.

The study set out to measure 132 air pollutants that might be found in a typical mixed land use urban area. The measurements were made at three sites in Paterson and one background site in Chester, NJ. Samples were taken about every six days between November 2005 and December 2006. The sampling schedule for this study followed about the same schedule as the other NJDEP air pollutant monitoring locations discussed below. The draft Final Technical Report was submitted to USEPA for their review and comment late in 2009.

The NJDEP operates four permanent air toxics monitoring stations around the state. One is in Chester, which is in a rural area and served as the designated background site for this study. Chester was included in the Paterson study because it is a rural location that allows for the comparison of data between an urban site, Paterson and rural site, Chester. The Chester site is the NJDEP's permanent designated background air toxics monitoring location for the state. The other permanent stations are located in Elizabeth (a mobile source oriented site), New Brunswick (a suburban site), and Camden (an urban residential site).

**Why was Paterson selected for this study?**

Paterson City was chosen because it represents an urban community with mobile sources such as vehicles, mixed land use - commercial, industrial and residential, and not because of concerns that air quality in Paterson is worse than in other New Jersey urban communities.

**What are the results?**

Out of the 132 air pollutants that were investigated, only p-dichlorobenzene was elevated at levels higher than are typical for a New Jersey urban setting. This occurred at **one** of

the three monitoring locations in Paterson for a two month time period. Concentrations of p-dichlorobenzene increased and then decreased over this two month period. The concentrations returned to levels similar to what was observed during the other twelve months of monitoring in Paterson.

Nine other air pollutants were also elevated at all three sites in Paterson as compared to the NJDEP health guidelines. The air pollutants include: benzene, ethyl benzene, 1,3-butadiene, carbon tetrachloride, chloroform, chloromethane, arsenic, and tetrachlorethylene. Naphthalene was marginally elevated at two sites in Paterson. The levels of these air pollutants, while elevated compared to New Jersey guidelines, are similar to levels observed at the other air pollutant monitoring stations in New Jersey and do not pose an immediate public health concern.

**Given the results, what are the health risks to residents of Paterson?**

The overall risk to health from air pollution in Paterson appears to be similar to other parts of the state. There was an observed increase in p-dichlorobenzene for two months and then a decrease. We believe that the two-month increase of p-dichlorobenzene is an isolated event. The NJDEP has concerns regarding this elevated level and is investigating what caused this increase.

Nine other air pollutants measured in Paterson were also elevated. These levels are similar to those observed at the four other NJDEP air pollution monitoring sites. The NJDEP is also concerned about these from a statewide and Paterson perspective and have several programs underway designed to reduce them.

**Are my children at greater risk as it relates to the study results?**

Compared to the rest of New Jersey, the elevated levels of air pollutants do not pose an increased risk to children in Paterson over any one else. The air samples collected outdoors at the two schools in Paterson were similar to those found throughout other areas of the state.

**Are there any specific actions I should take with respect to the study results as a resident of Paterson?**

There are no specific protective measures residents of Paterson need to take with respect to the study results. However, because levels of some air pollutants are elevated throughout New Jersey, there are actions that all New Jerseyans can take to reduce elevated levels of air pollutants. Some of these include: using mass transit, maintaining your car properly, reducing use of household chemical cleaners, and not burning wood.

**What is p-dichlorobenzene?**

p-Dichlorobenzene, also known as 1, 4-dichlorobenzene, is found mostly in mothballs, deodorizing blocks and pesticides. It is used in manufacturing these products and some plastics.

### **What is being done about p-dichlorobenzene?**

The NJDEP Compliance and Enforcement program is investigating to identify the source that caused the elevated concentrations of p-dichlorobenzene at the one site in Paterson in 2006. This investigation involves the review of agency databases, conducting on-site inspections at facilities in the general area and coordinating with county and local health officials. In addition, the NJDEP has applied for and will be receiving funds from USEPA for additional monitoring in Paterson.

### **Where do these air pollutants come from?**

About half of the air pollutants that were elevated in Paterson come from motor vehicle exhaust. Chloroform comes from chlorinated drinking water. Arsenic comes from combustion of oil and coal. Carbon tetrachloride is from historical uses and remains in the atmosphere throughout New Jersey. Tetrachloroethylene also called PERC is mostly used in dry cleaning. Naphthalene comes from coal and oil combustion, mothballs, and petroleum products. Chloromethane is produced in industry, but it is estimated that up to 99% comes from natural sources.

### **Why are the results in Paterson different than in Chester?**

Chester, New Jersey is the NJDEP designated rural background air monitoring location. It was chosen for comparison to Paterson because it was not expected to show the influence of urban activities. Therefore, as expected, levels of many air pollutants were lower in Chester than in Paterson.

### **Why did it take so long to get the study results?**

Studies such as this one typically can take anywhere from two to three years after sampling to complete because of the review of data and detailed analysis that is required. At no point during the sampling and analysis of the data did the results indicate a public health threat that required immediate action. When analysis of the data simultaneously revealed the elevated p-dichlorobenzene for the two month period and its subsequent drop back to normal levels, NJDEP proceeded with efforts to identify the source. That investigation is ongoing. Given the lack of results indicating the need for immediate action, the completion of the final report proceeded along the normal scientific course.

### **What is being done to reduce concentrations of air toxics statewide?**

The NJDEP, USEPA and local agencies have numerous programs to reduce levels of risk from exposure to air pollution. Some of these programs include: control technology requirements for air permitting; new dry cleaning regulations, diesel engine retrofits, anti-idling legislation and education, legal action against dirty coal-fired power plants, and restrictions on wood burning.

### **Where can I get more information about the Paterson Air Toxics Study?**

More information on the study can be found at:

[www.state.nj.us/dep/dsr/paterson/](http://www.state.nj.us/dep/dsr/paterson/)

**Where can I get more information about air pollution issues in New Jersey?**

The NJDEP and USEPA have information available on the internet. Please see the following sites:

[www.state.nj.us/dep/airtoxics](http://www.state.nj.us/dep/airtoxics)

At this web site you can learn what the state is doing to reduce air pollution and what you can do to help.

<http://www.stopthesoot.org/>

Stop the Soot is the web page of the NJDEP's diesel risk reduction program.

[www.epa.gov/triexplorer](http://www.epa.gov/triexplorer)

The Toxics Release Inventory is a publicly-available USEPA database that contains information on toxic chemical releases and waste management activities reported annually by certain industries as well as federal facilities.

[www.epa.gov/ttn/atw/3\\_90\\_024.html](http://www.epa.gov/ttn/atw/3_90_024.html)

USEPA's citizen's guide to risk assessments for toxic air pollutants

[www.epa.gov/ttn/atw/3\\_90\\_023.html](http://www.epa.gov/ttn/atw/3_90_023.html)

USEPA's Citizen's Guide to evaluating exposures to toxic air pollutants.

[www.epa.gov/ttn/atw/3\\_90\\_022.html](http://www.epa.gov/ttn/atw/3_90_022.html)

A fact sheet from USEPA explaining air pollution and health risk.

**Toll-free telephone hotline number** to report environmental incidents, abuses, and complaints in New Jersey - **1-888-WARN DEP**