



**Statement of
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**Before the
Superintendent and Board of School Directors
of the School District of the City of Erie, Pennsylvania
Regarding the
Health Impact of the Proposed “Tires-to-Energy” Plant**

**East High School
October 30, 2008**

Thank you, Dr. Federici. Dr. Barker, Mr. Herdzik, School Directors, fellow panelists, and citizens, good evening. The American Lung Association of Pennsylvania appreciates the opportunity to make this brief statement before you this evening on the subject of the health impact of the “tires-to-energy” plant proposed for operation just a half mile from where we are meeting. My name is Kevin Stewart. I hold a bachelor of science degree in chemical engineering from Princeton University, and I serve the American Lung Association of Pennsylvania as director of environmental health.

The American Lung Association of Pennsylvania was founded 116 years ago to combat tuberculosis, and we are now dedicated to the broader mission of preventing lung disease and promoting lung health. The American Lung Association provides programs of education, community service, advocacy, and research, and is the oldest nationwide voluntary health agency in the United States. We represent a body of scientific knowledge on the subject of lung disease, specifically on well-established links between air pollution and lung disease, both as a cause of new cases and as an exacerbating agent for existing conditions. We have been fighting for relief from ambient air pollution since the middle of the last century.

In commenting on the proposed facility, the American Lung Association advocates for and represents not only on the order of thirty thousand Erie Countians who suffer from chronic lung disease, but also the millions, here and downwind, who desire to breathe clean air and so protect their good health.

It is our understanding that the Board of School Directors is looking for data or a summary of facts that are scientific and unbiased. Much information about the proposed facility itself is already on the record, so I will refrain from reiterating certain parts of that. Instead, I will begin by citing some findings pertaining to Erie County in the American Lung Association's annual *State of the Air* report.

Our ninth annual report was released on May 1 of this year, and it presents grades and rankings that were calculated using air pollution data from 2004 through 2006. These data were collected by state and local air pollution control agencies, were reviewed by the United States Environmental Protection Agency (EPA), and were validated for use.

The American Lung Association's *State of the Air* report grades and ranks cities and counties polluted by the most widespread and dangerous forms of air pollution – ozone (smog) and short-term and year-round levels of fine particle pollution (soot, dust, and aerosols). Counties are graded "A" through "F" for each category where sufficient data exist.

While ozone, a highly reactive form of oxygen, shields the skin from cancer-causing sunlight, it wreaks havoc with the respiratory system. Ground-level ozone gas results primarily from the action of sunlight combined with – mark this – hydrocarbons and nitrogen oxides emitted in fuel combustion by motor vehicles, factories, and power plants. Ozone levels typically rise during the period between May and October when higher temperatures and increased amounts of sunlight combine with the stagnant atmospheric conditions that are associated with ozone air pollution episodes.

Ozone is a powerful respiratory irritant that sears lung tissue. Even relatively low ozone levels can affect even healthy people's ability to breathe. Ozone exposure may lead to shortness of breath, chest pain when inhaling deeply, wheezing and coughing. Ozone exposure often triggers asthma attacks, and results in more people being hospitalized or sent to emergency rooms for lung problems. Recent studies show that as levels of ozone increase, so does the risk of premature death.

Fine particle pollution, more formally called PM_{2.5} or "particulate matter with an aerodynamic diameter of 2.5 microns or less," is made up of complex microscopic bits of solid or liquid matter that are typically no larger than one-thirtieth the width of a human hair. Again, I ask you to take special note: In addition to direct emissions, as from incomplete combustion, fine particle pollution also results from complex chemical reactions in the atmosphere involving emissions of nitrogen oxides and sulfur dioxide. Moreover, other chemical species, including toxic metals as well as carcinogens such as polycyclic aromatic hydrocarbons and dioxins, are adsorbed onto the surfaces of these particles.

Particle pollution can cause serious health problems even at relatively low concentrations and is responsible for tens of thousands of premature deaths in the U. S. each year. Since these fine particles are tiny enough to penetrate the body's natural defense systems, this means that when one inhales these particles, they become embedded deep within the lungs, where some components have been shown to enter the bloodstream. Hundreds of peer-reviewed studies in mainstream medical journals have linked particle pollution to reduced lung function,

exacerbation of asthma, increased rates of school absenteeism, emergency room visits, hospital admissions, heart attacks, strokes, lung cancer, and premature death. Research continues to sort out more details about *how* particle pollution causes these effects.

In Erie's case, the county earned passing grades from the American Lung Association for ground level ozone smog (a "C"), and for long-term average concentrations of fine particle pollution. However, given that the EPA recently strengthened the ozone standard, it is anticipated that future reports will show failing grades for Erie County reflecting this change. But most significantly, the report showed that Erie County posted a grade of "F" for short-term (24-hour) measures of fine particle pollution, with 21 "bad air" days over a three-year period, ranking the county at 9th worst in Pennsylvania (of 21) and 46th worst in the nation (of 591).

While air pollution is unsafe for everyone, some people are at increased risk because of their age or health situation. Those groups include people with asthma, older people and children under 18, people with chronic obstructive pulmonary disease (COPD) – chronic bronchitis and emphysema, people with cardiovascular disease and those with diabetes. Far from being a tiny minority, these sensitive populations at risk account for on the order of half the population. In Erie County alone, the report presents some staggering statistics – those who are most at risk of breathing air pollution at unhealthy levels include:

- **65,000** children and **40,000** seniors,
- **6,000** children with asthma and over **18,000** adults with asthma,
- **9,400** with chronic bronchitis and **4,300** with emphysema,
- **76,000** with cardiovascular disease, and
- **17,000** with diabetes.

The American Lung Association of Pennsylvania draws the simple conclusions from the foregoing not only that Erie County already has a serious air quality problem, but also that there are tens of thousands of county residents currently at particular risk from exposure to air pollutants such as ozone smog and fine particle pollution.

With respect to the proposed tire combustion facility, some information we do have is the amount of air pollutants that the facility has applied for permission to emit. While this discussion will not address pollutants such as ammonia, acid gases, dioxins and furans, and the many toxic metals the facility is anticipated to emit, the applicant is seeking approval for the following emission rates:

- 230 tons per year Particulate Matter (PM₁₀)
- 354 tons per year Nitrogen Oxides (NO_x)
- 690 tons per year Carbon Monoxide (CO)
- 179 tons per year Sulfur Dioxide (SO₂)
- 27.6 tons per year Volatile Organic Compounds (VOCs)

In order to put these figures in perspective, it is worthwhile to compare them with facility emission inventory figures for Erie County from the Pennsylvania Department of Environmental Protection (DEP), the year of the most recent available data being 2006:

- For PM₁₀, the emission rate requested by the applicant for approval amounts to **nearly 45% more than the total** of emissions reported **for all 25 facilities** with PM₁₀ emissions identified in Erie County by DEP; the proposed facility would produce **more than four times** the amount of particle pollution emitted by the next highest facility on the list.
- For NO_x, the emission rate requested amounts to 50% of the total of emissions reported for all 24 facilities with NO_x emissions; the proposed facility would **rank second** on this list.
- For CO, the emission rate requested amounts to **nearly 15% more than the total** of emissions reported for all 23 facilities listed by DEP with CO emissions; the proposed facility would produce **more than three times** the amount of CO produced by the next highest facility on the list.
- For SO₂, the emission rate requested amounts to over 20% of the total of emissions reported for all 23 facilities with SO₂ emissions; the proposed facility would **rank third** on this list.
- For VOCs, although the emission rate requested amounts to just 4.5% of the total of emissions reported for all 26 facilities with VOC emissions; the proposed facility would nevertheless **rank third** on this list as well.

Therefore, by all of the preceding measures, we must regard this facility as one of preeminent magnitude for Erie County, and therefore worthy of serious consideration by all concerned. The fact that in addition to this, it is proposed that the facility be juxtaposed with residential neighborhoods, including many schools and day care establishments where members of sensitive groups may be found, simply underscores the American Lung Association's concern.

This is why the American Lung Association of Pennsylvania, at minimum, fully supports the Erie County Medical Society's position statement calling for the performance of an independent health impact assessment – precisely the type of analysis that would provide this Board with the type of information it seeks, yet in many respects cannot yet obtain, even from my worthy colleagues on this panel.

Such an assessment should address all manner of health concerns as would be suggested by the comprehensive list of emissions cited by the applicant. Among these concerns would be the following:

- What are worse-case scenarios for health consequences from acute and chronic maximal exposures, by all routes, to expected routine emissions from the total facility, as they may depend upon atmospheric conditions?
- What are anticipated maximal exposures under upset conditions such as start up, shut down, and other process interruptions? Especially, under what conditions might the stack or pollution control equipment be bypassed, and what would exposures then be?
- What air pollution scenarios would result from emergencies, such as might occur should accumulated tires or shredded tire charge catch fire outside the combustion chamber?
- To what extent does a failure analysis show that the uniqueness of this facility, the relative inexperience of the operating entity, and deterioration of the facility over its anticipated life of 30 years or more lead to additional health or safety risks for the surrounding community?

- What are the anticipated health impacts in neighborhoods adjoining the proposed facility as a consequence of the increased rail and truck traffic necessary to provide up to 1,000 tons per day of scrap tires and to remove an expected 117 tons per day of ash?
- What might health consequences be as a result of possible exposures to the material being transported into and out of the facility?
- What might health consequences be as a result of the combination of emissions from the concentration of polluting facilities, including the proposed tire combustion facility, in close proximity to one another?

Finally, it also our understanding that Superintendent Dr. James Barker is on record rightly expressing that the Board’s “primary concern ... is to protect the interests of children” and asking, in connection with any health implications, what the appropriate things are for the school board to do. The American Lung Association of Pennsylvania would therefore suggest that the Board of School Directors consider any and perhaps all of the following actions:

- Join the many voices calling for continuous emission monitoring of all pollutants, with data made publicly accessible and available in real time, being one requirement of granting an approval or permit for this facility.
- Join the Erie County Medical Society in its call for an independent health impact assessment (HIA).
- Consider if the many remaining unknowns
 - especially if authorities refuse to require that the requested HIA be performed,
 - combined with the increased potential for environmental injustice to occur due to the facility’s extreme proximity to area residences, schools, and daycares, are not in themselves sufficient reason for this board to take the stand, prudent in the matter of protecting children’s interests, of opposing construction and operation of such a facility.

Although I have endeavored to make our position as clear as possible, the American Lung Association of Pennsylvania will do its best to respond to any inquiries from the Superintendent or the Board of School Directors for clarification or for further information:

Air pollution worsens and causes disease and even death for real people. In Erie County, we have seen that the populations at increased risk from air pollution include infants, youngsters and the elderly, persons with chronic lung and heart disease, and diabetes. Every one of these tens of thousands is a real person, not a nameless statistic. Every one of these people is a family member, a neighbor, a coworker, a friend – someone whose health and life deserve to be protected.