Anne Cardwell - For The Record: to Deny Seeno Project

From: Martin Duvall <martyduvall@sbcglobal.net>
To: elizabeth patterson <epatterson@ci.benicia.ca.us>, Jim Erickson <jim.erickson@ci.benicia.ca.us>
Date: 9/27/2008 9:21 AM
Subject: For The Record: to Deny Seeno Project
CC: "citycouncil@ci.benicia.ca.us" <citycouncil@ci.benicia.ca.us>

Dear City Leaders

Benicia, my lifelong family home, has always benefited from a small town charm.

Somehow, I feel a bit less charmed when trying to get in or out of downtown Benicia at certain peak traffic times at East Second Street - sometimes waiting for 2 or even 3 street light changes to get off of Military East toward the 780 Freeway and Industrial Park. Gridlock? In Benicia?

It truly exists and is soon to get worse when Seeno cavalierly chooses to ignore traffic mitigation on both East second Street and Interstate 780. Imagine the residents on that street that feel this effect all day long? Imagine that corridor when Seeno's proposed business park increases traffic by it's projected numbers?

I am not a traffic crusader, but I point this out as just one glaring issue that effects the everyday quality of life in our town with respect to the Seeno project.

Quality of Life. Far and away, this is the reason most often cited by citizens and visitors alike for appreciating Benicia's many attributes. Quality of Life is a promise many if not all of our elected officials promised to promote and protect.

I believe in property rights and free enterprise, but City's do have domain over what types of developments they allow. I'm no expert on this, but our City has a responsibility to direct developers to accommodate Benicia's requirements. Seeno has a right to develop their property. But to further encroach on the already conspicuous traffic concerns on one of the most crucial traffic arteries in town should be concern enough all on its' own to deny Seeno's project, regardless of all the other reasons that can and have been cited.

There has been much written about the Green Gateway Group's proposal for an alternative project. This citizen's initiative is a first step to aid and entice our City's leaders in doing what is right and required in this case.

Martin E Duvall
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VIII-B-339

From: Marilyn Bardet <mjbardet@sbcglobal.net>
To: Charlie Knox <Charlie.Knox@ci.benicia.ca.us>
Date: 9/29/2008 1:42:42 PM
Subject: Air Quality: for council packet, Oct 7th

Hello Charlie,

I'm not sure when the deadline is for getting material into the council packet. It's very important that we be able to get to councilmembers the pdf's of power point presentations from the Benicia First forum, "Air Quality and Children's Health", held on Sept 18th. Since we already have multiple "near" sources of pollution in Benicia, the serious cumulative consequences of tailpipe emissions, from the standpoint of AB32 but also from a public health perspective, should be taken into account by council. Considering the level of expertise represented at the forum on such a critical issue, we were very appreciative that all members of council attended the forum, (except the mayor, who was on vacation.)

The three speakers were Jenny Bard, regional air quality director for the American Lung Association of California; Dr. Paul Roberts, Phd, Exec Vice President and Chief Scientific Officer of Sonoma Technologies Inc (specialists in air quality monitoring, working in the US and Mexico); and Dr. Ira Tager, MD, professor of epidemiology, UC Berkeley School of Public Health, Director of the Prevention Research Center.

We made an audio tape of the forum's presentation and also a video. We will be submitting not only the complete video (for future broadcast on Comcast Channel 27), but also, the audio tape, for transcription. We hope to be able to find a transcriber in time before the end of the week, but if not, we will submit the tape. Also, we will be submitting the pdfs of all three speakers' power point presentations, several of which I'm including below. (We are still waiting to receive the third, from Dr. Ira Tager. See below for Dr. Paul Rogers and Jenny Bard's pdfs.)

I'm forwarding here the pdf of Dr. Robert's presentation, called "Near Roadway Exposure to Air Pollution with Examples from a Study of MSATs at Three Schools Next to US 95 in Las Vegas, Nevada". The traffic study, recently completed by Dr. Roberts (Sonoma Tech), represents one year's worth of data collected on roadway pollutants as monitored at three school sites located adjacent to Highway 95 in Las Vegas. Dr. Robert's presentation reviewed the basic findings of the Las Vegas study. This study breaks new ground since it represents results that show trends and patterns derived over a year of air monitoring at specific sites. It is the first long-term study of its kind, (funded from settlement between Sierra Club and Nevada Dept of Transportation). The results are vitally important to understanding health impacts that can be associated to daily chronic exposures to concentrations of key tailpipe pollutants, including "black carbon" (diesel PM) NO/NOx and CO especially for schools and neighborhoods that are located in close proximity to major roadways, (within radiuses out to 500 meters, according to Dr. Ira Tager's presentation). Dr. Roberts also stressed the meteorological and topographic variables that affect dispersion and settling of pollutants, this being highly pertinent to accurate

monitoring for ambient air quality.

We have asked Dr. Ira Tager to forward a pdf of his presentation, which focused on the implications for public health (development of respiratory disease and diminishment of lung development in young children, and also teens between 10 and 18 yrs) of roadway traffic emissions, as statistics from various studies show. Dr. Tager spoke about the Las Vegas study and other studies conducted in the US, and despite offering a scientist's caveats about how facts can be misrepresented, he concluded that, indeed, there are serious health consequences from daily exposures to vehicle traffic, especially diesel particulate emissions. He remarked that effects of roadway pollution are especially of significance within 500 meter "zones" of busy streets, freeways, etc.

Jenny Bard gave an overview of the problem of air pollution, including the effects of ozone and particulate matter derived from diesel emissions but also from wood-burning. She spoke about the Lung Associations support for AB32, the goal of drastically reducing traffic through better land use decisions and developing public transit alternatives. She stressed that getting reductions in "vehicle miles traveled" (goal of AB32), had a complementary benefit of reducing public health risks posed by commuting and traffic generally.

What I've written here is by no means a conclusive summary of the three presentations. Below please find the pdfs of Jenny Bard's and Dr. Robert's powerpoint presentations. I will forward Dr. Taqer's when I receive it, hopefully within the next few days.

I hope you will reproduce these materials for the Council packet. They are highly relevant to the discussion of the latest traffic report to be discussed Oct 7th for the Seeno business park project.

Thank you as always,
Marilyn B

CC: Don Dean <donaldjdean@sbcglobal.net>, Jerry Page <Jkjerome@aol.com>, Anne Cardwell <Anne.Cardwell@ci.benicia.ca.us>, Steve Goetz <sgoet@sbcglobal.net>

Near-Roadway Exposure to Air Pollution with Examples from a Study of MSATs at Three Schools Next to U.S. 95 in Las Vegas, NV

Prepared by:
Paul T. Roberts,
Michael C. McCarthy, and Steven G. Brown
Sonoma Technology, Inc.
Petaluma, CA

Presented to:
Benicia First! Forum on Air Quality and Children's Health
Benicia, CA
September 18, 2008

Near-Roadway Exposures – Outline

- Near-source (primary) pollutants, in context
- Introduction to U.S. 95 MSAT (Mobile Source Air Toxics) Study
- Monitoring sites at schools, parameters measured
- Typical characteristics of CO, NO/NO_x, and black carbon (BC) at these sites
- Example of upwind/downwind BC concentrations
- Example of hydrocarbon concentrations
- Preliminary summary of MSAT characteristics
- Mitigation Lessons Learned

Primary and Regional Pollutants

Potential Sources	Near-Source Pollutants			Ozone Precursors and Other Regional Pollutants
	PM	BC	MSAT	
Cars/Trucks/Buses	✓	✓	✓	✓
Rail	✓	✓	✓	✓
Ships	✓	✓	✓	✓
Ag Operations				✓
Refineries	✓	✓	✓	✓
Power Plants (gas)				✓
Forest/Ag/Grass Fires				✓
Fireplaces/Woodstoves	✓	✓	✓	
Wind-blown Dust	✓			✓

U.S. 95 Settlement Agreement

Court Settlement Agreement between Sierra Club and NDOT/FHWA regarding urban freeway expansion where three schools are adjacent to roadway

Required components of settlement

- MSAT monitoring study at schools (this study)
- Filtration added to HVAC systems at schools
- Bus retrofit program
- Bus idling education
- FHWA gradient study (with EPA, ongoing research)

Introduction to U.S. 95 MSAT Study

MSAT Study Objectives

- Characterize outdoor and indoor concentrations at schools (student exposure)
- Determine U.S. 95 vehicle contributions (before and after new lanes opened)
- Determine MSAT removal efficiencies of new filtration systems

Focus on priority MSATs

- Diesel particulate matter
- Gaseous components: benzene, 1,3-butadiene, acrolein, formaldehyde, and acetaldehyde

U.S. 95 MSAT Study Measurements

Routine Network (May 2007-May 2008)

- Semi-continuous black carbon (Aethelometer) (10 sites)
- CO (3 sites)
- NO/NO_x (1 site)
- Meteorological parameters (4 sites)

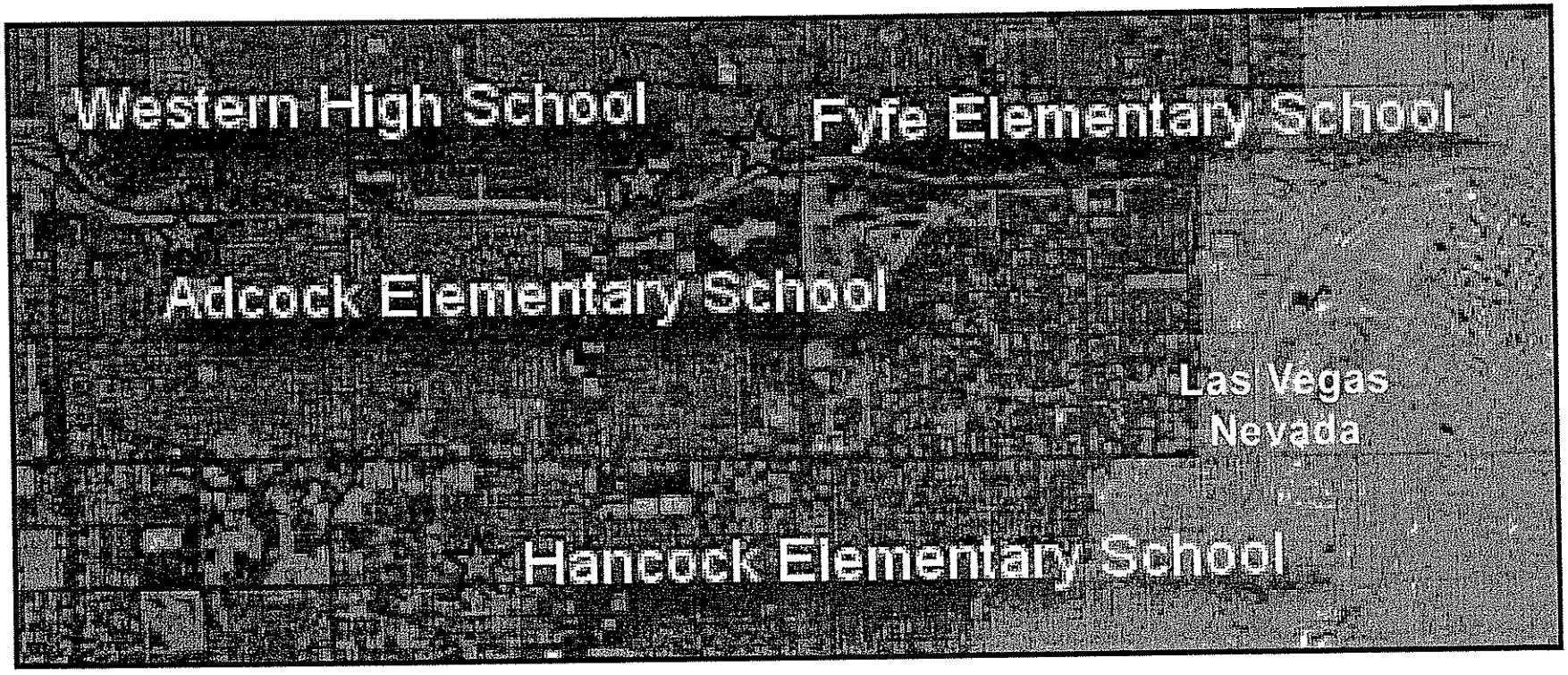
Intensive Measurements (May/June 2007, January 2008)

- 2-hr hydrocarbon and carbonyl samples (10 sites)

Routine Traffic Data at Two Locations

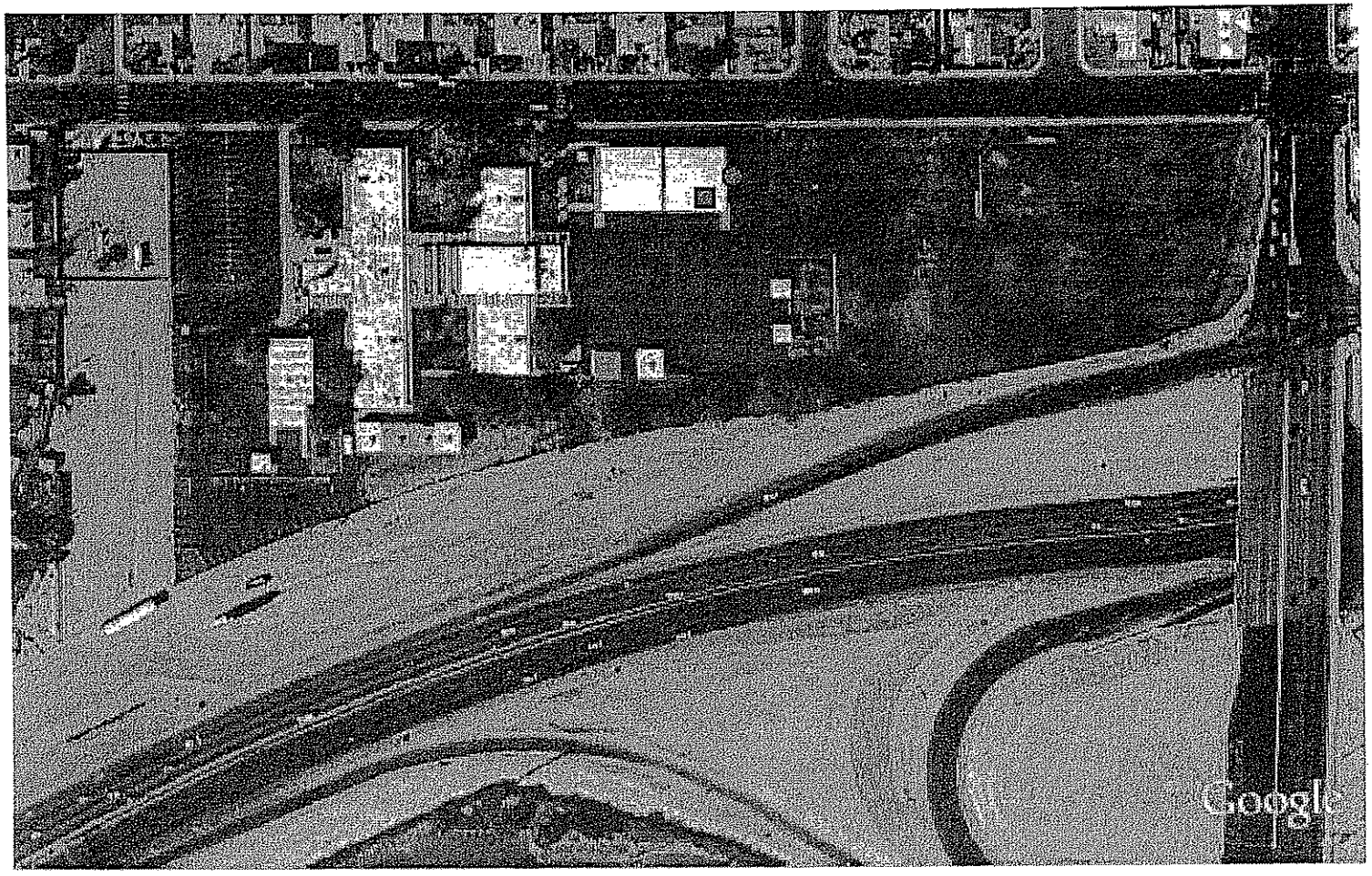
- 5-minute traffic counts, by lane, with vehicle-class bins and vehicle speeds

Monitoring Sites at Schools



VIII-B-348

Fyfe Elementary School Monitoring Sites

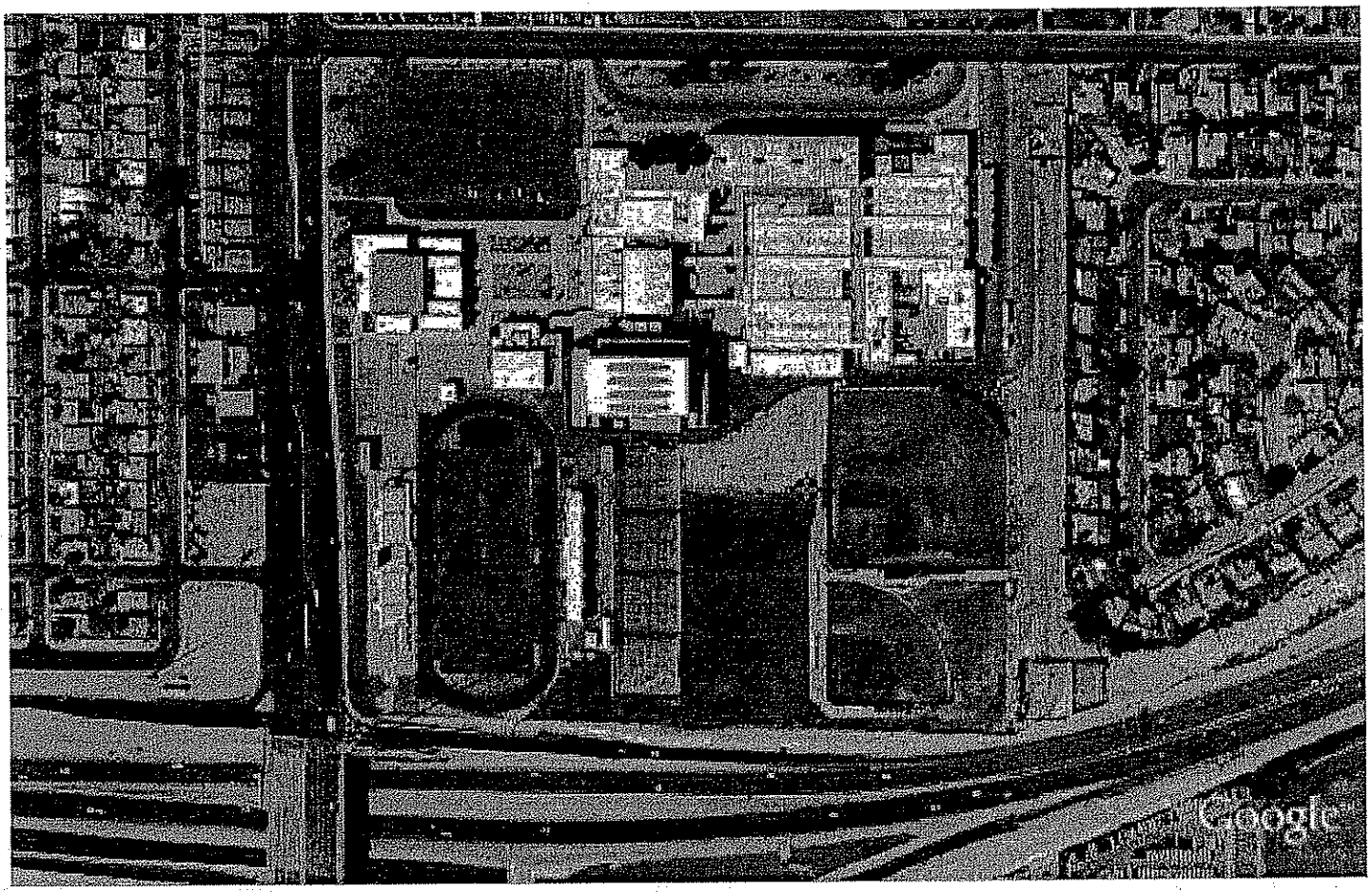


Ambient is 20 meters from sound wall (SW); air inlet is 76 meters from SW.

Legend: Air Inlet Classroom Ambient

VIII-B-349

Western HS Monitoring Sites

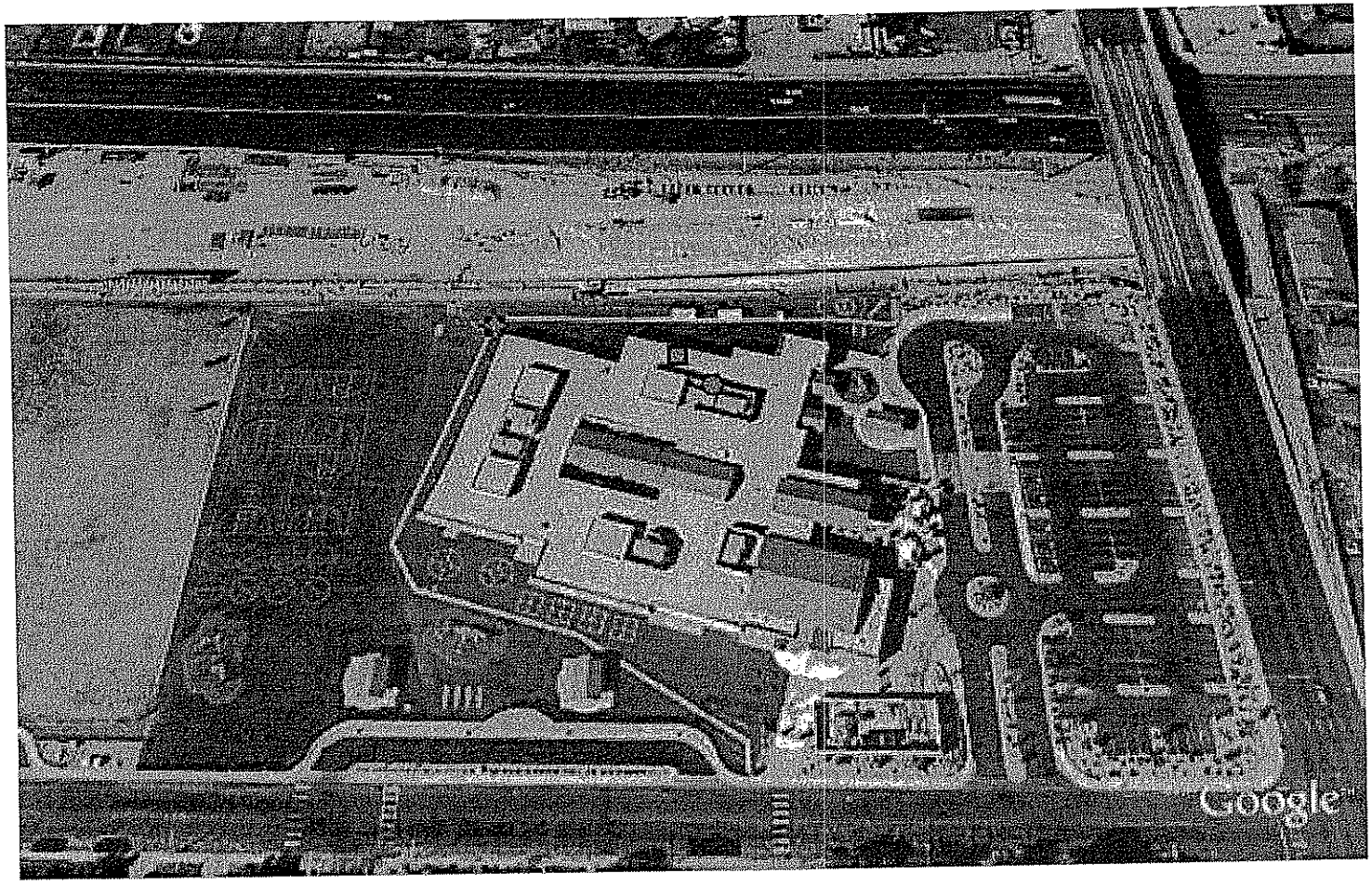


VIII-B-350

Ambient is 136 meters from sound wall (SW); air inlet is 317 meters from SW.

Legend: Air Inlet Classroom Ambient

Adcock Elementary School Monitoring Sites

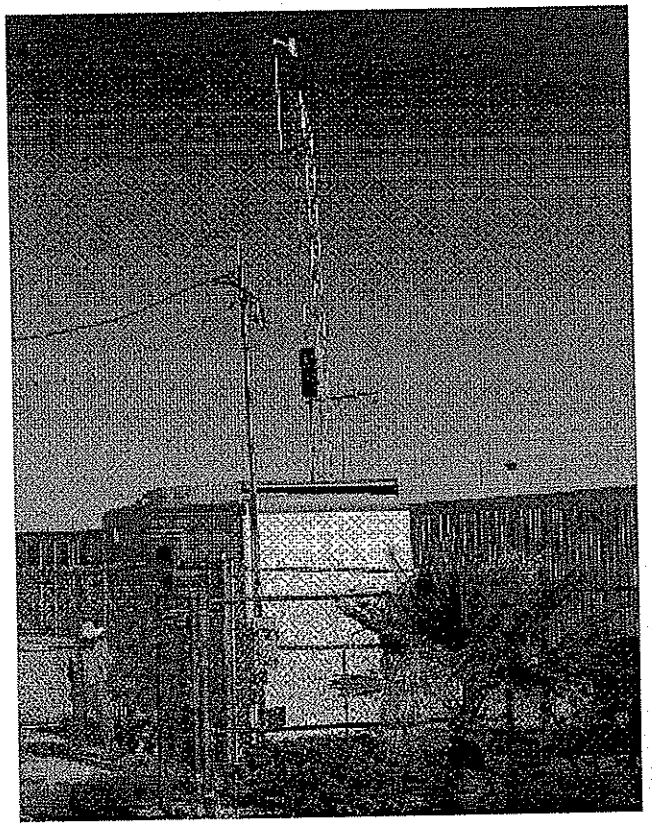


VIII-B-351

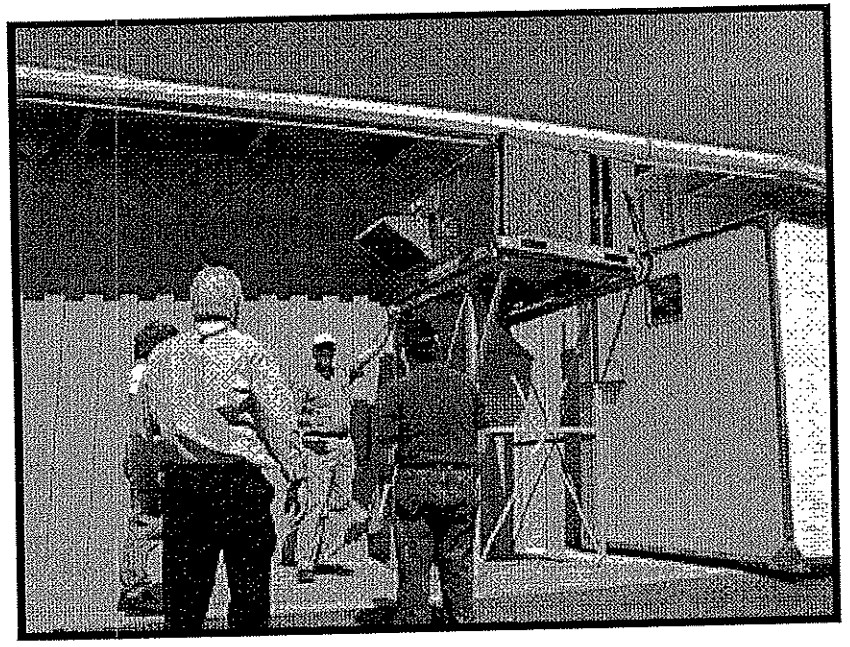
Ambient is 17 meters from sound wall (SW); air inlet was 39 meters from SW; air inlet for new system is 33 meters from SW.

Legend: Air Inlet Classroom Ambient

Fyfe Trailer and Shelter Next to Classroom (Before HVAC Changes)



20 meters from sound wall

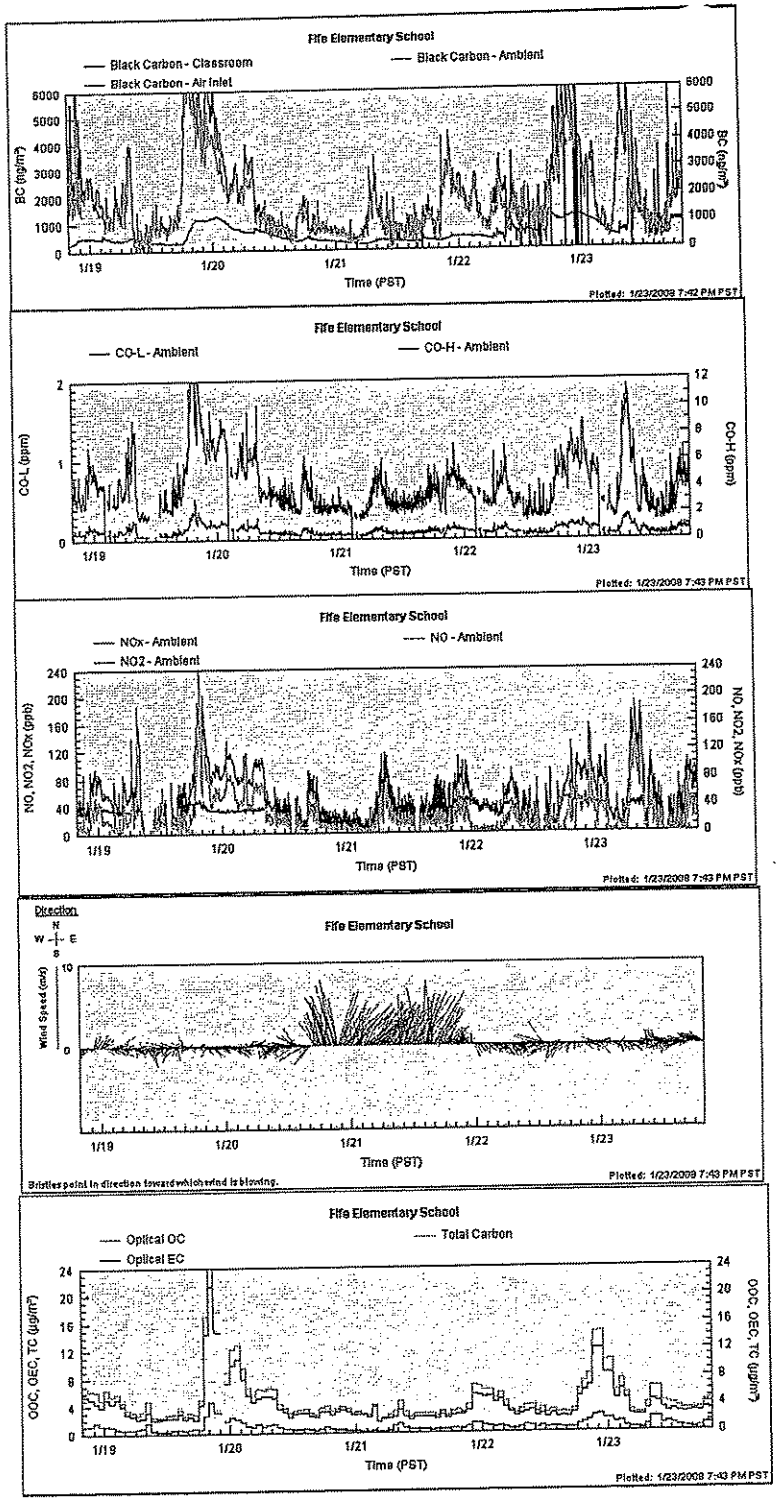


76 meters from sound wall

VIII-B-352

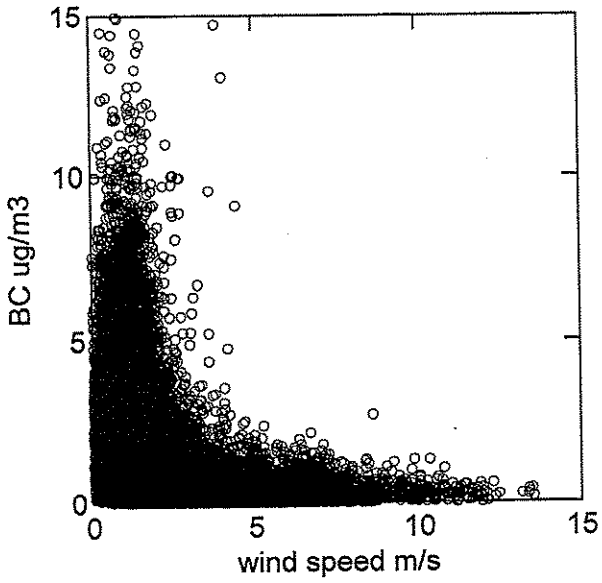
Typical Time-Series of Concentrations at Fyfe in Winter

- BC, CO, NO, OC, and EC profiles are similar.
- Wind speed, wind direction, and source strength have a major influence on concentrations.

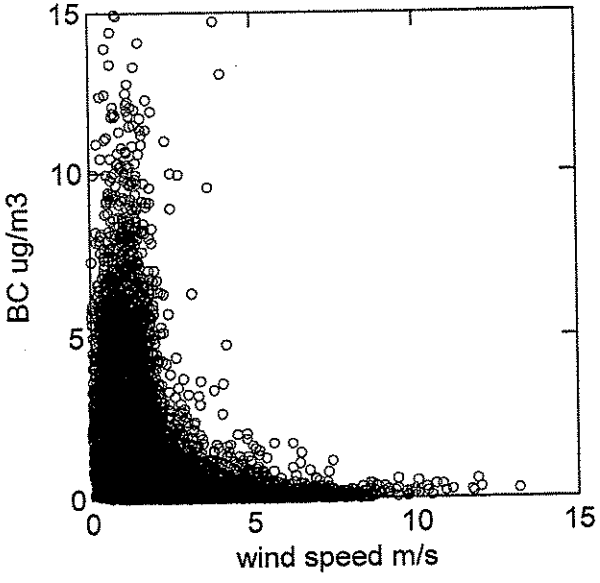


VIII-B-353

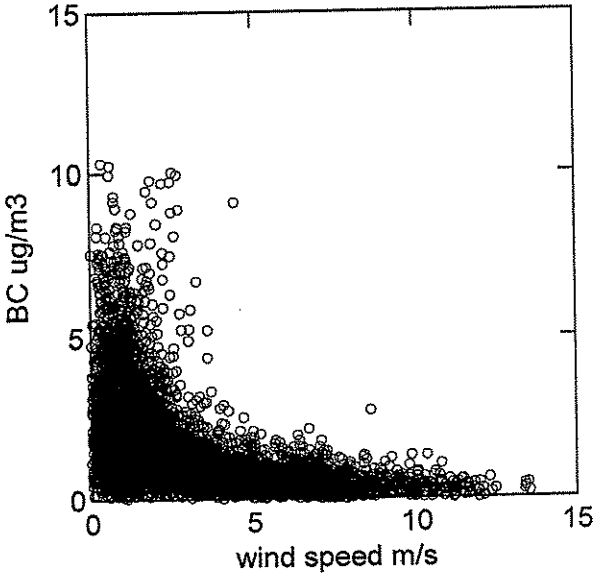
Fyfe, Ambient Monitor, December–Early March



BC vs. windspeed, all hours, N=25,780, 5-min



BC vs. windspeed, all hours, winds from the north, N=12,871



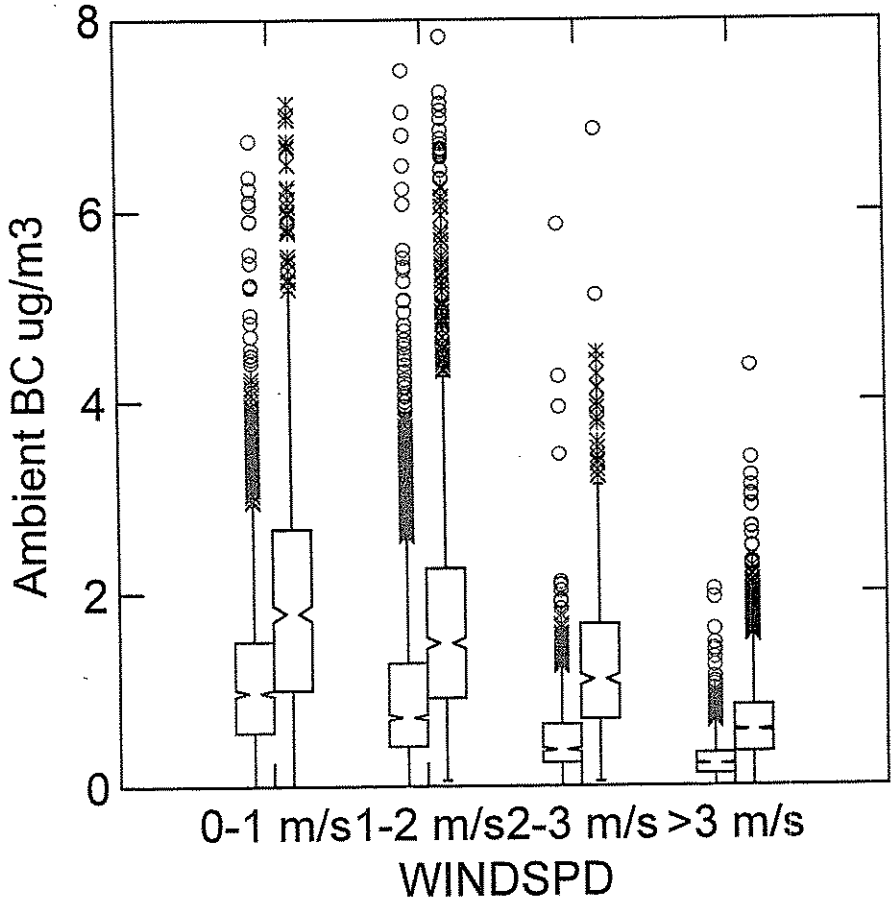
BC vs. windspeed, all hours, winds from the south (freeway), N=6580

High BC concentrations are seen at low wind speeds regardless of direction. Also note that concentrations are higher at wind speeds > 2 m/s when winds are from the south (U.S. 95).

North=290-70 degrees
South=110-250 degrees

VIII-B-354

BC Concentrations Upwind and Downwind
Influence of Wind Speed

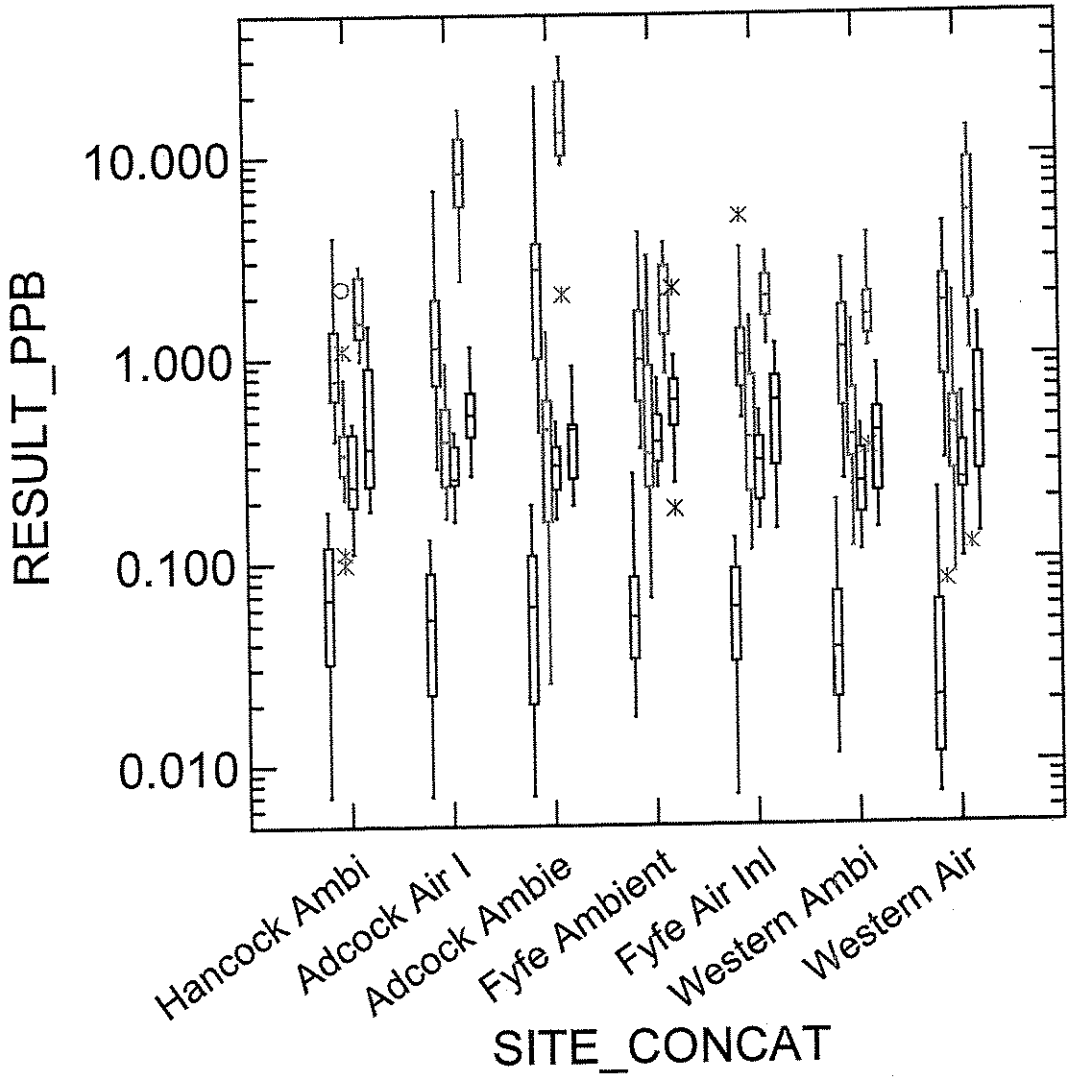


FDNAUP

- ad upwind
- fy downwind

VIII-B-355

Winter 0900-1100
Gaseous Concentrations Distribution



PARAMETER

- 1,3-Butadien
- Acetaldehyde
- Acrolein
- Benzene
- Formaldehyde
- Toluene

VIII-B-356

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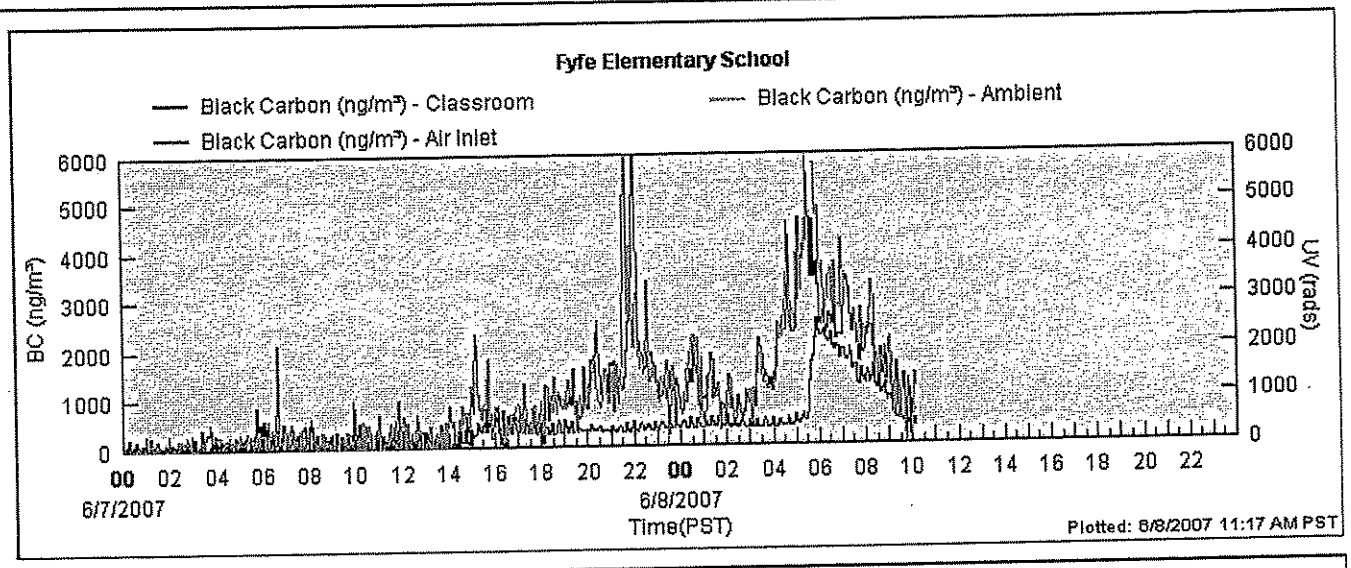
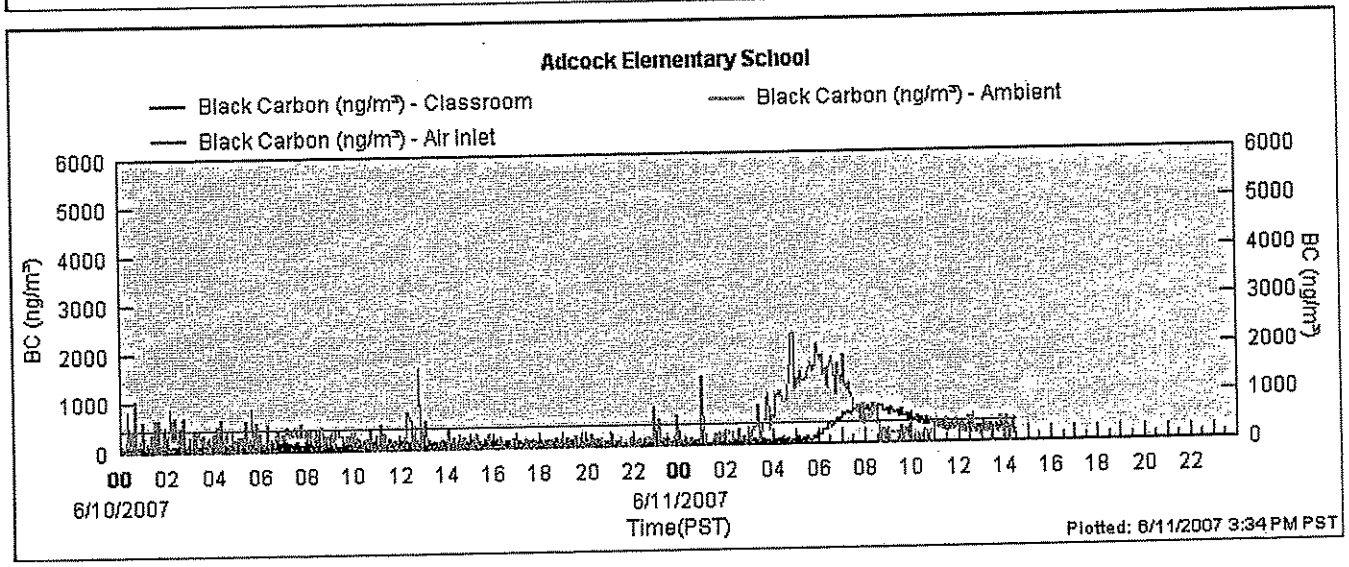
Preliminary Summary of Ambient MSAT Characteristics

- Fresh pollutants go up and down together.
- Morning concentrations dominate indoor and outdoor exposure (summer); overnight and morning concentrations dominate in the winter.
- Expected pollutant gradients are not always evident.
- Low wind speeds often allow high pollutant concentrations on both sides of roadway (with a sound wall).
- Wind conditions and time-of-day have a significant influence on near-roadway exposure.

Example BC Time-Series Showing Classroom Being Filled with Rush-hour Pollution by HVAC (Before HVAC Changes)

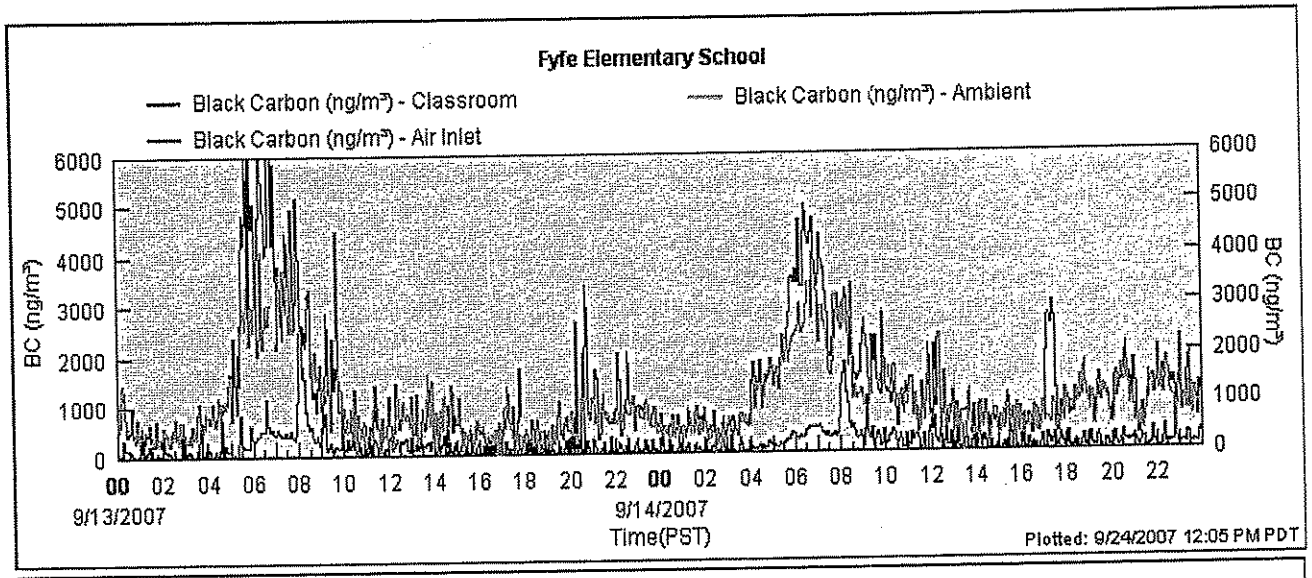


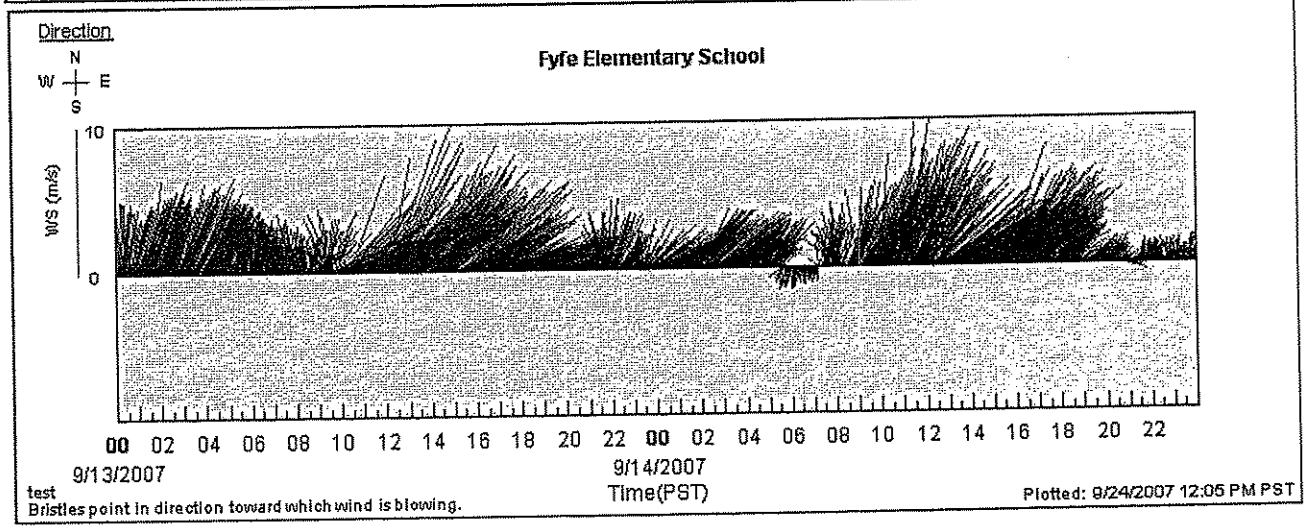


Note HVAC start time and different rate of ambient dilution vs. indoor dilution.

VIII-B-358

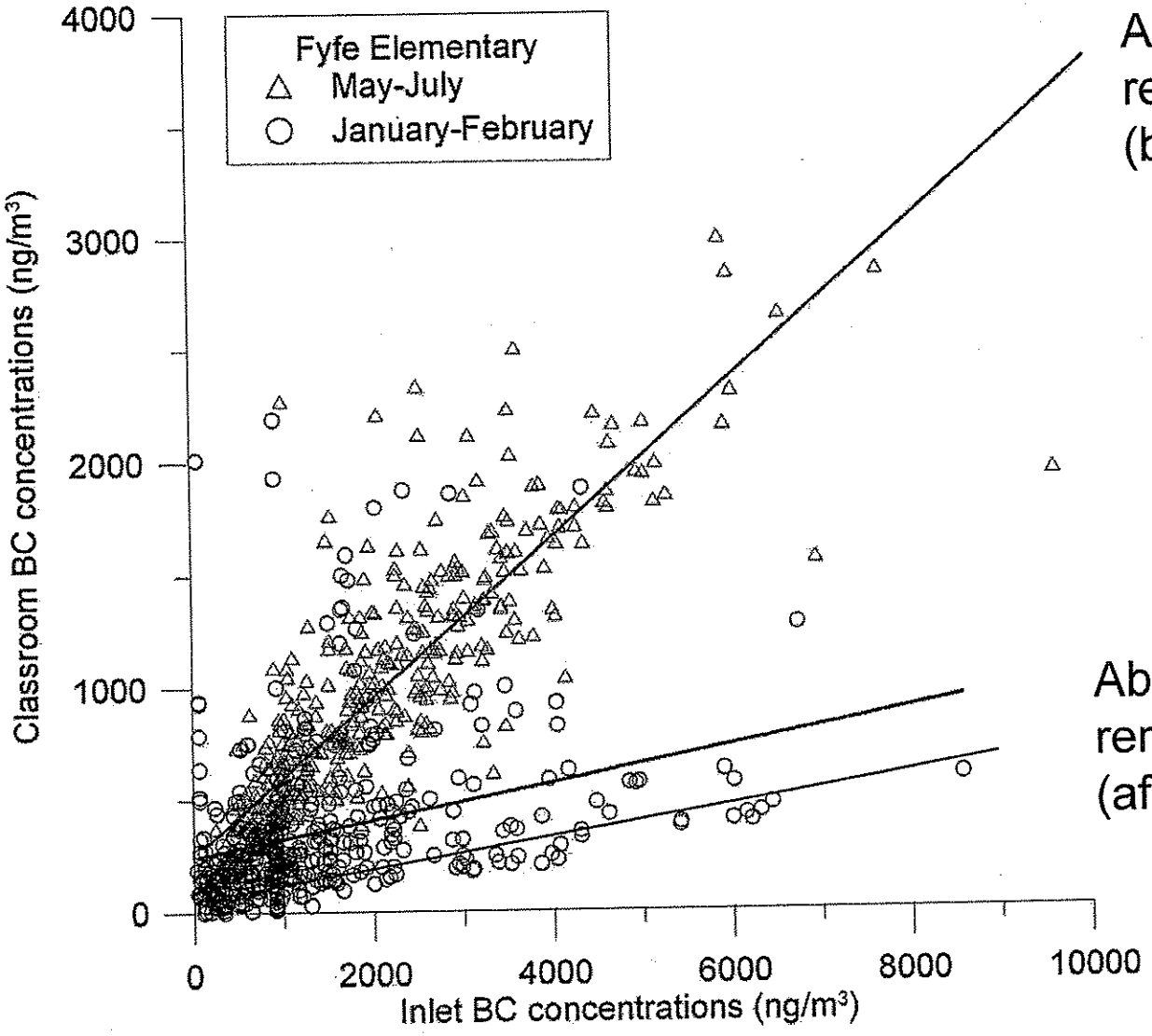
Example BC Time Series Showing Low BC Concentrations in Fyfe Classroom, Except When Door Left Open by the Teacher (After HVAC Changes)





VIII-B-359

Indoor and Air Inlet BC Concentrations at Fyfe Before and After HVAC Changes

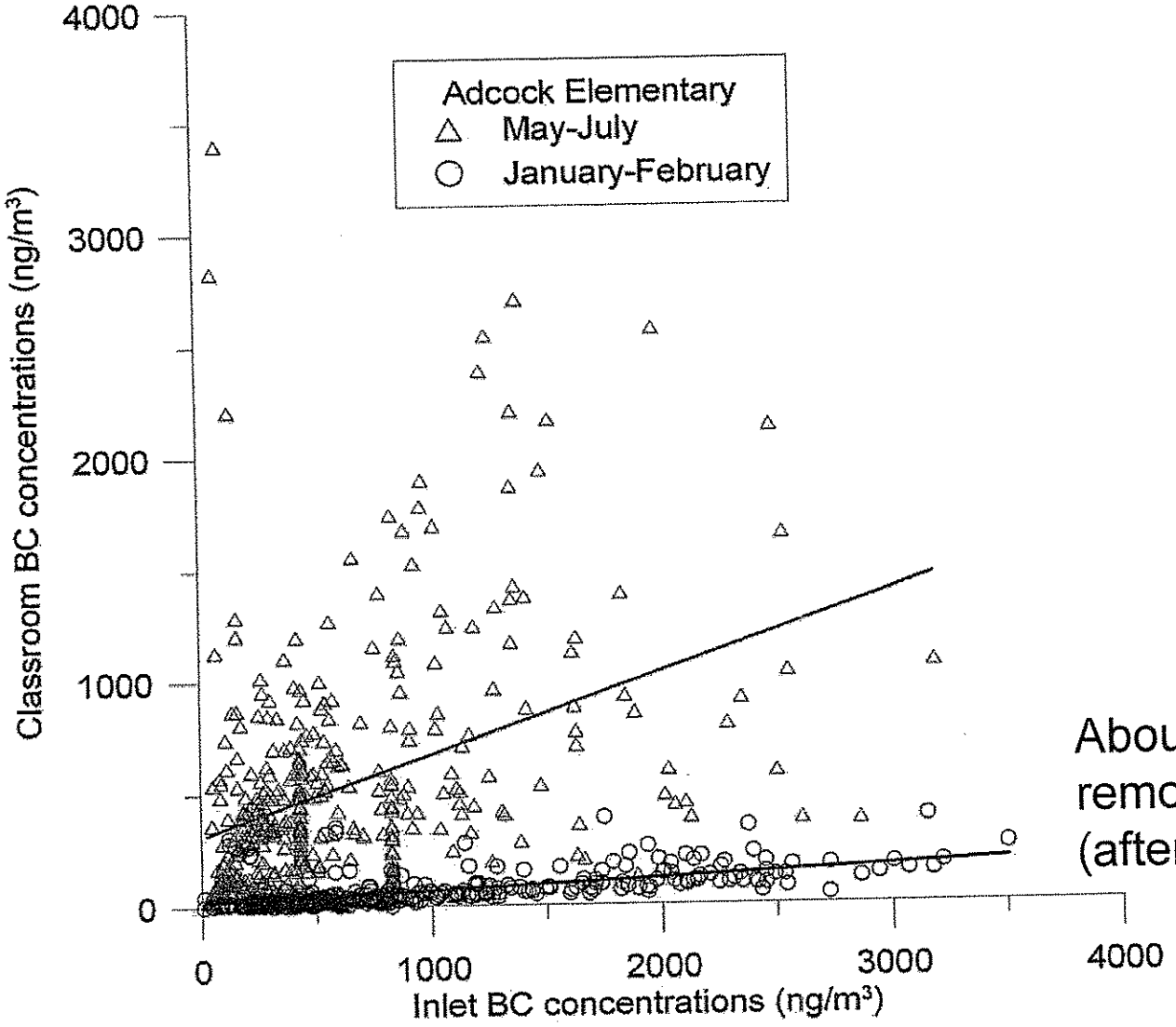


About 65% removal efficiency (before)

About 88% removal efficiency (after)

VIII-B-360

Indoor and Air Inlet BC Concentrations at Adcock Before and After HVAC Changes



About 94% removal efficiency (after)

VIII-B-361

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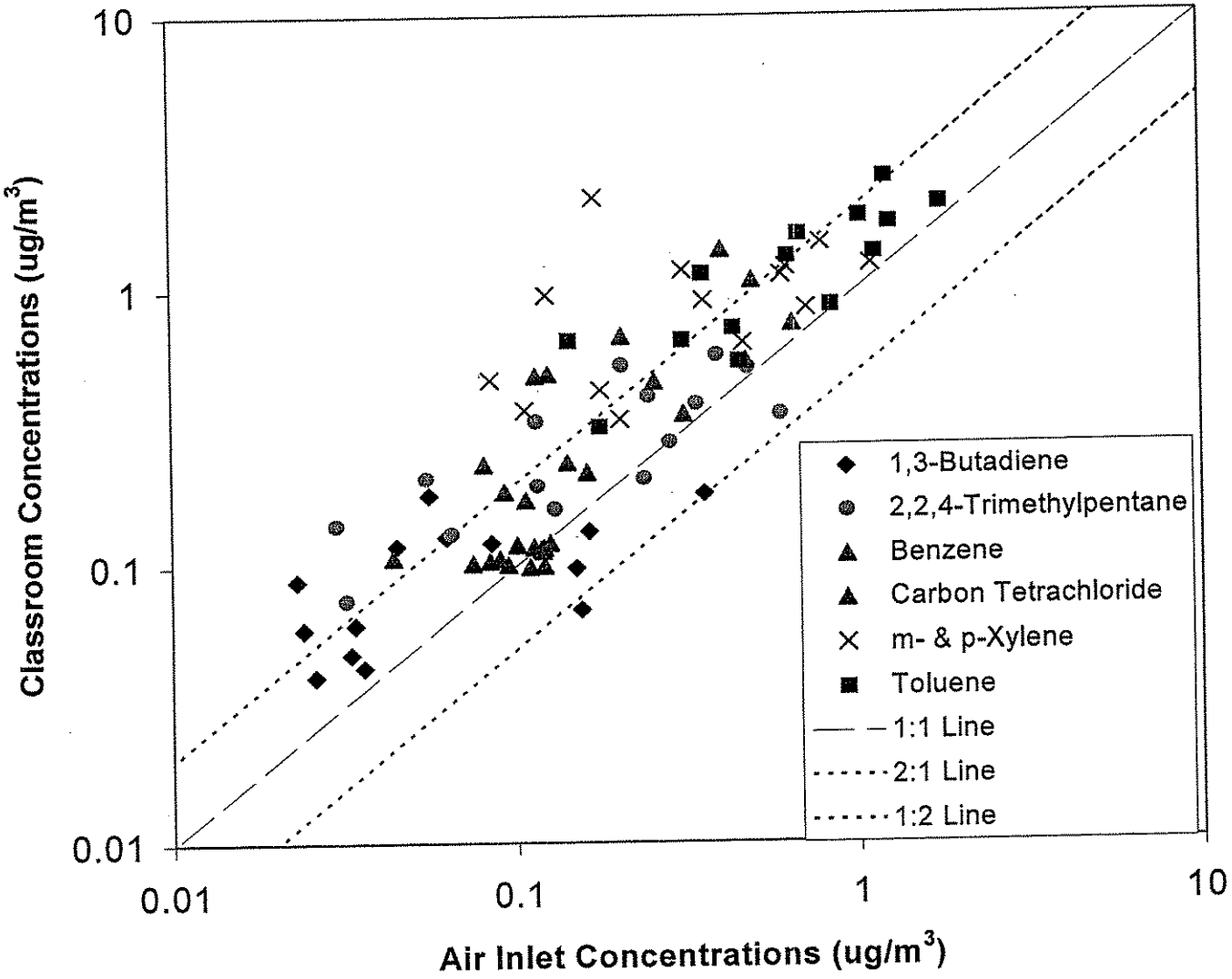
Indoor VOC Concentrations at Adcock (Summer) Higher than Outdoor for All Species Except CCl4



VIII-B-362

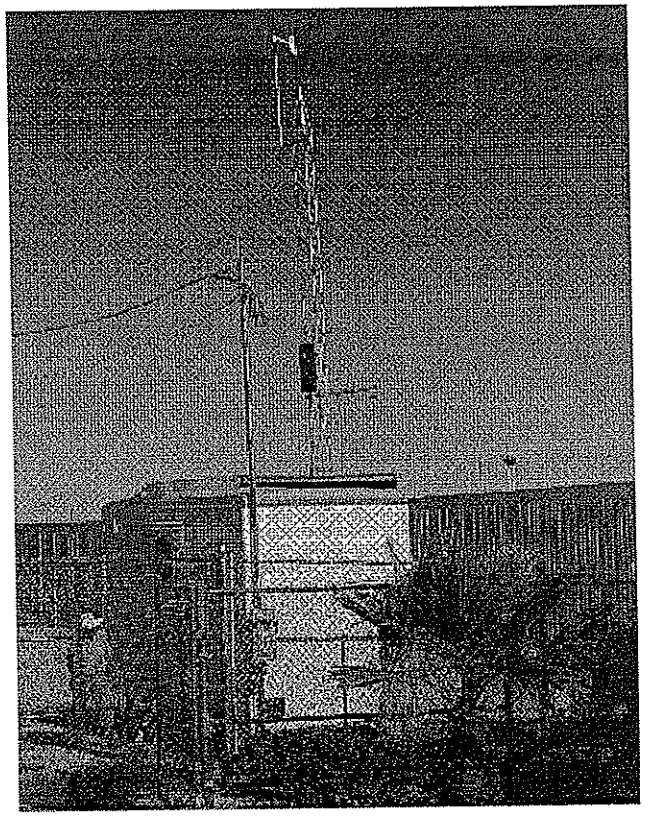
Preliminary Summary of MSAT Filtration Characteristics

- Modest BC removal with existing HVAC systems in (summer).
- Significant BC removal with new HVAC filtration (winter).
- Adcock system removes more BC than Western or Fyfe.
- Indoor concentrations are often higher than outdoors for several gaseous MSATs (indoor sources or time lag in system?).

Mitigation Lessons Learned, So Far

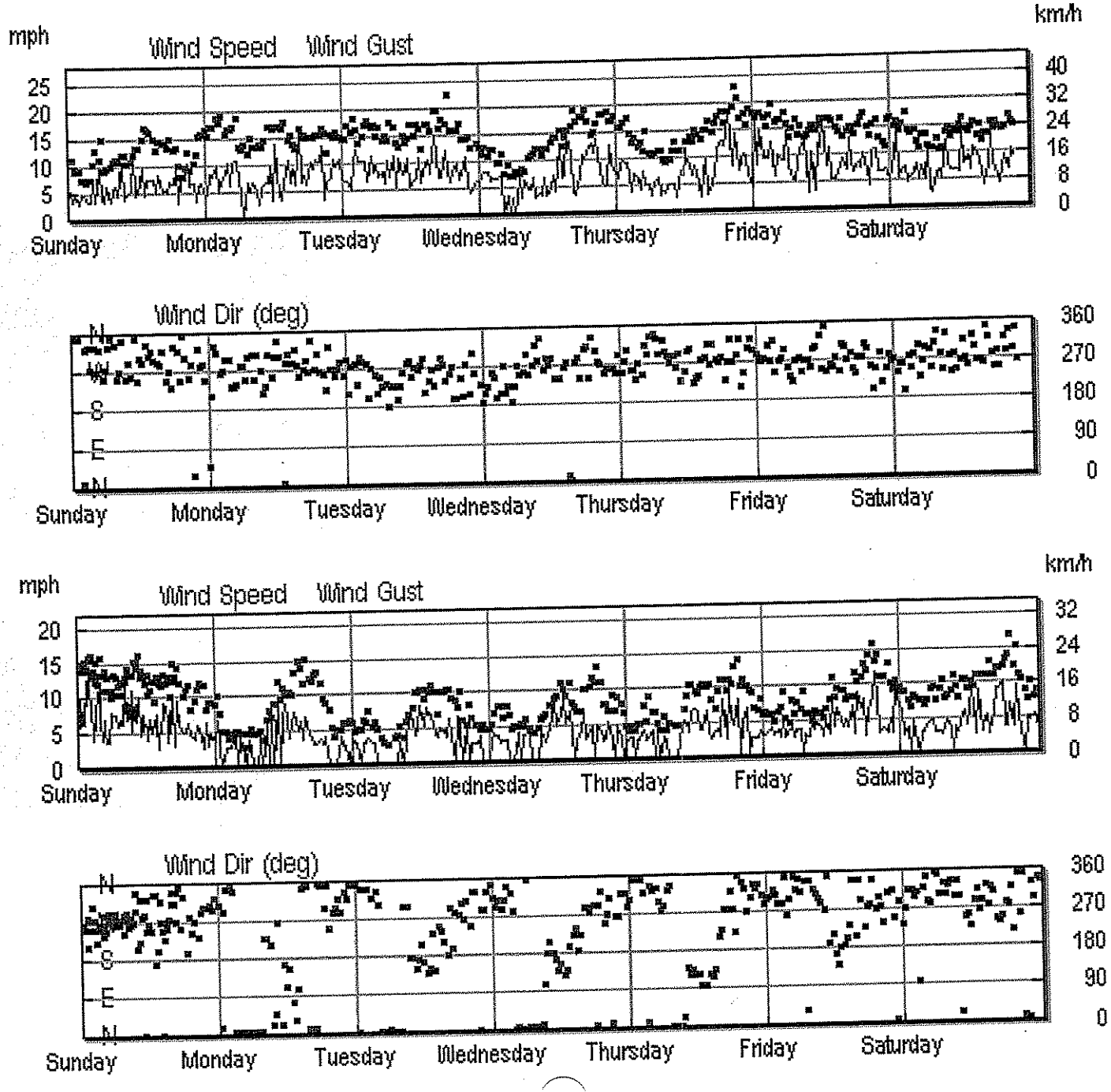
- Typical HVAC operation can fill classroom with polluted air early in the morning which can result in higher concentrations indoors (than outdoors) later in morning.
- Leaving classroom doors open to outdoor hall can defeat filtration system.
- Diurnal pattern of pollution is an important consideration for exposure and mitigation (for both classroom and outdoors).

Acknowledgments



This work is funded by the Nevada Department of Transportation (NDOT); John Terry is the NDOT Project Manager. Joanne Spaulding and Jane Feldman (Sierra Club), Pat Mohn (NDOT), and Rich Baldauf (EPA) contributed to the design of this study. Joey Landreneau and David Vaughn (STI) performed the monitoring and sampling.

Example of Winds in Benicia; 9/13/08 and 9/6/08 (KCABENIC3)



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Overview: Air Quality and Health Concerns

Jenny Bard
Regional Air Quality Director
American Lung Association of California

Sept. 18, 2008

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We are what we breathe

Our lungs are on the line

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Health Effects of Second hand Smoke

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- Shortness of breath and wheezing
- Asthma attacks
- Emergency room visits and hospitalizations
- Long-term lung and cardiovascular disease
- Lung Cancer
- Premature death in seniors and infants

Health Effects of Bad Air

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- Shortness of breath and wheezing
- Asthma attacks
- Emergency room visits and hospitalizations
- Long-term lung and cardiovascular disease
- Lung Cancer
- Premature death in seniors and infants

Specific effects of Ozone & PM

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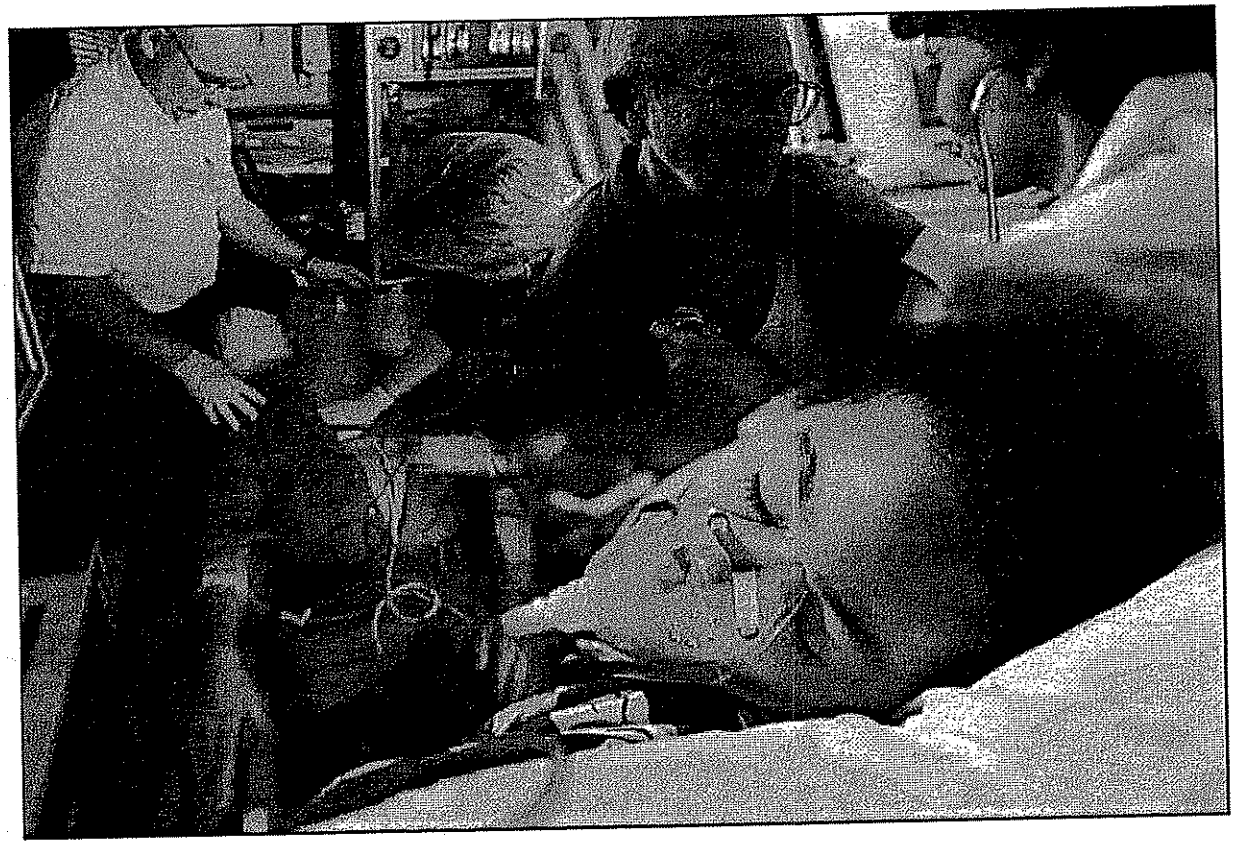

What is ozone?

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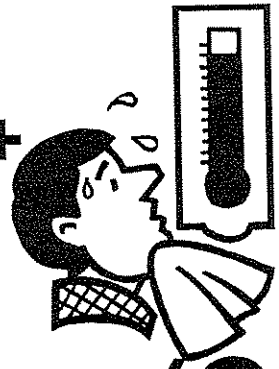
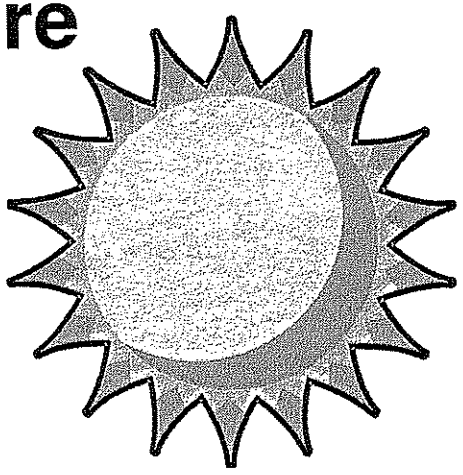
- Sometimes called smog
- Created in the atmosphere
- NOx + VOCs +  + 

= Ozone (O3)

LIKE CHOLESTEROL...

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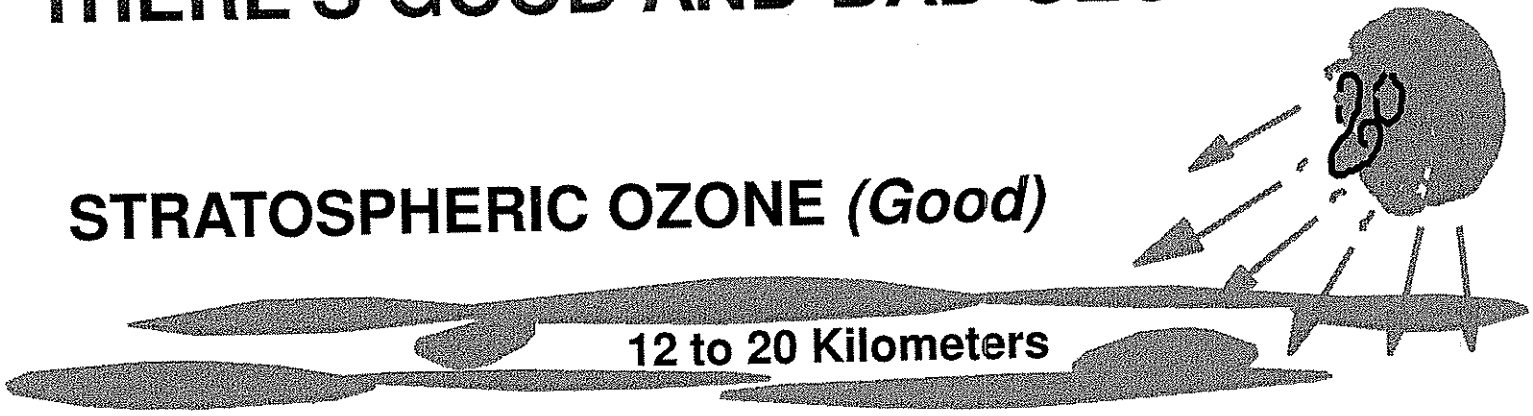
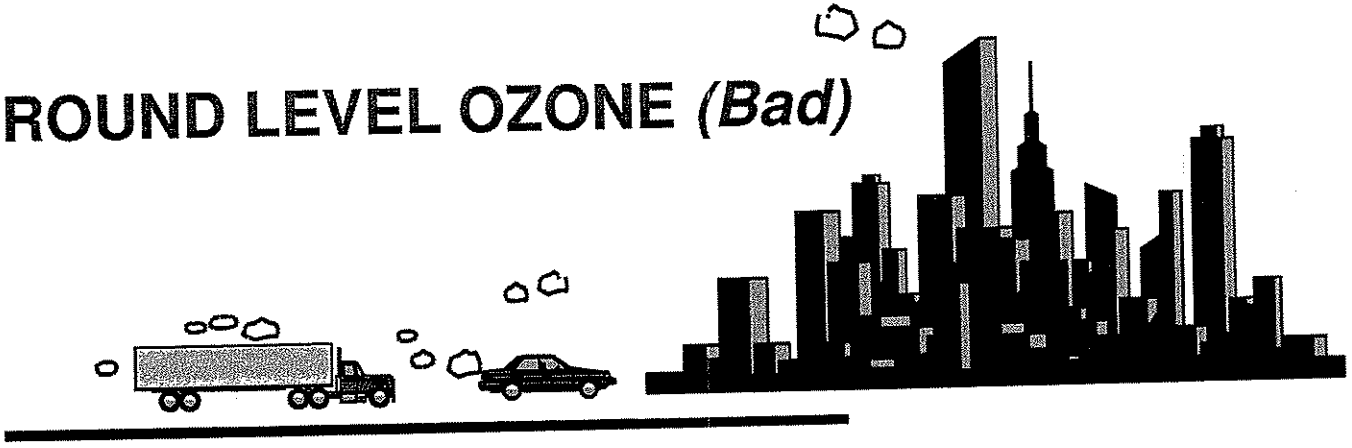
WITH ITS GOOD AND BAD COMPONENTS..

THERE'S GOOD AND BAD OZONE.





Ozone pollution

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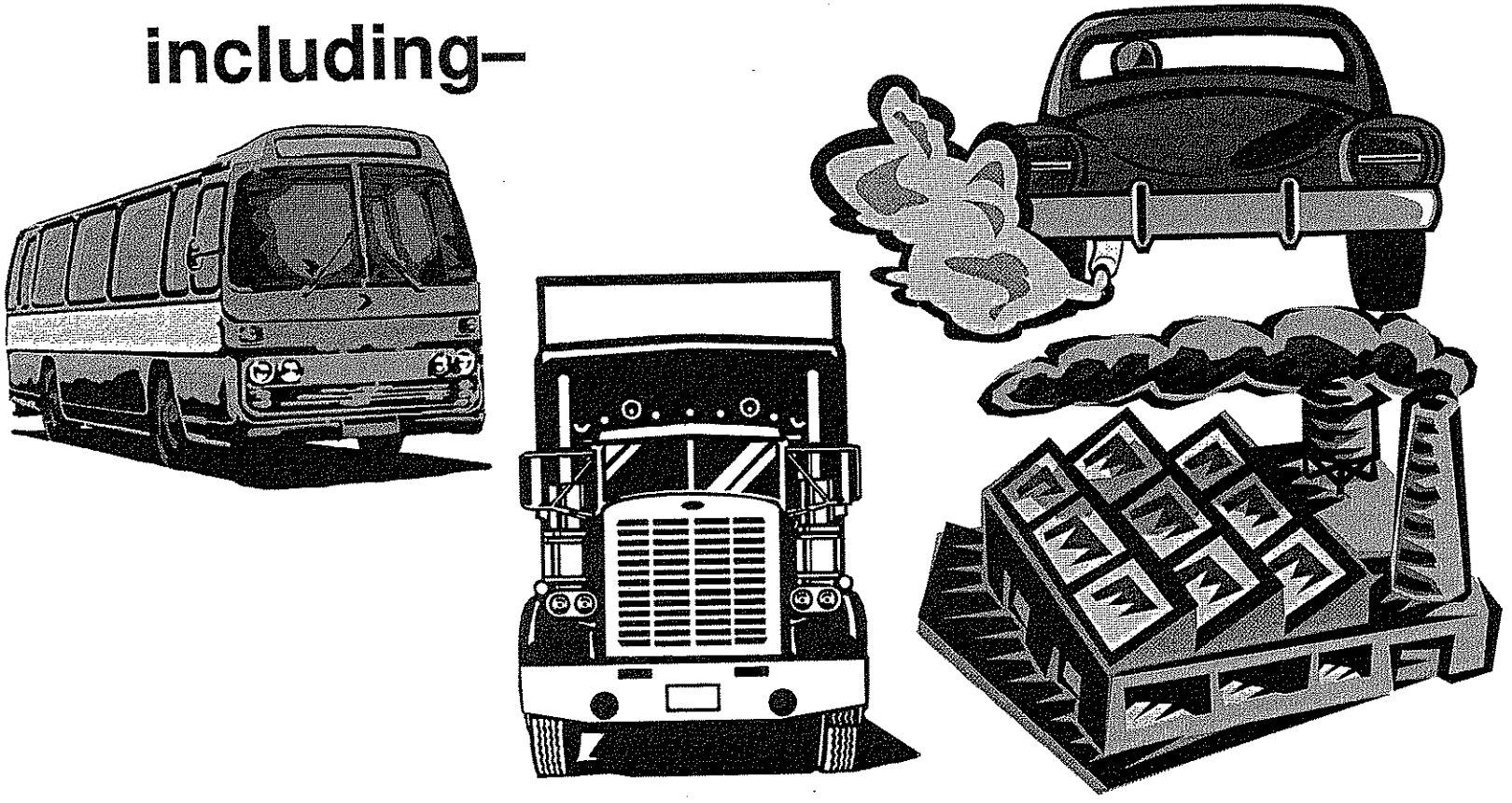
- **Comes from many sources, including–**



Transported long distances

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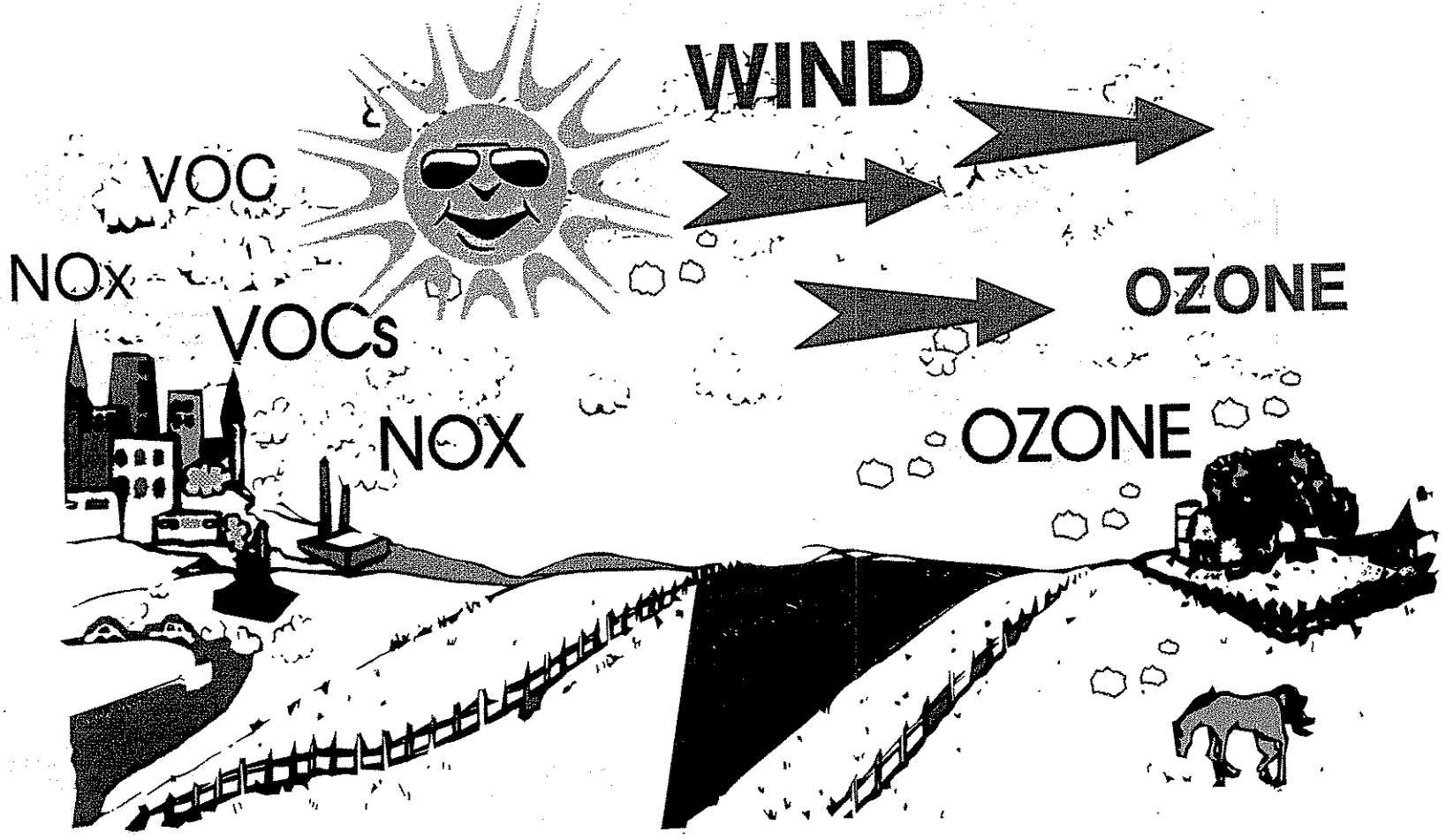

Health effects of ozone

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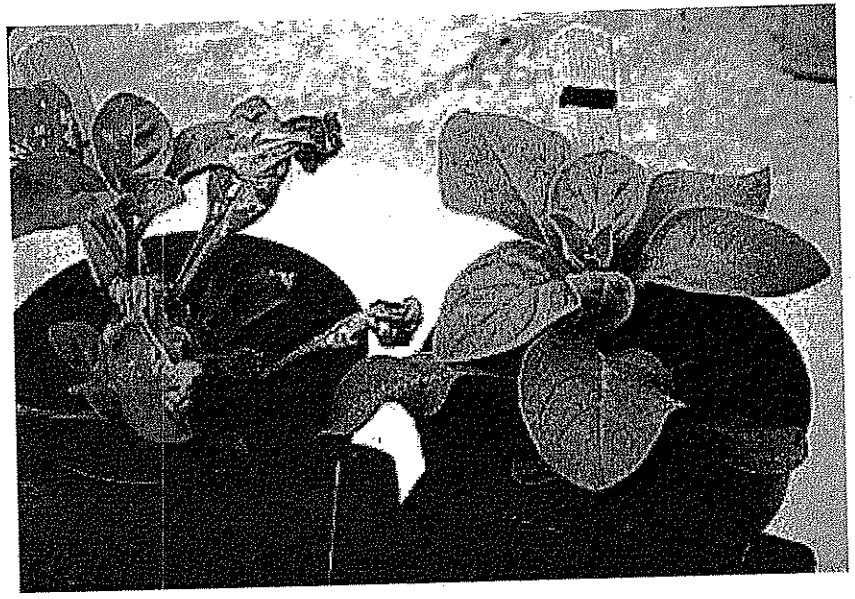
- **Increased risk of early death**
- **Lung inflammation**
- **Reduced lung function**
- **Increased asthma attacks**
- **Increased risk of infection**
  - ***Bell et al. 2005; Levy et al, 2005; Ito et al, 2005; US EPA, 2006***



The plant on the left is stunted due to smog exposure. The plant on the right grew in healthy air. Children's lungs respond to smog in a similar way.

Who is at risk from ozone?

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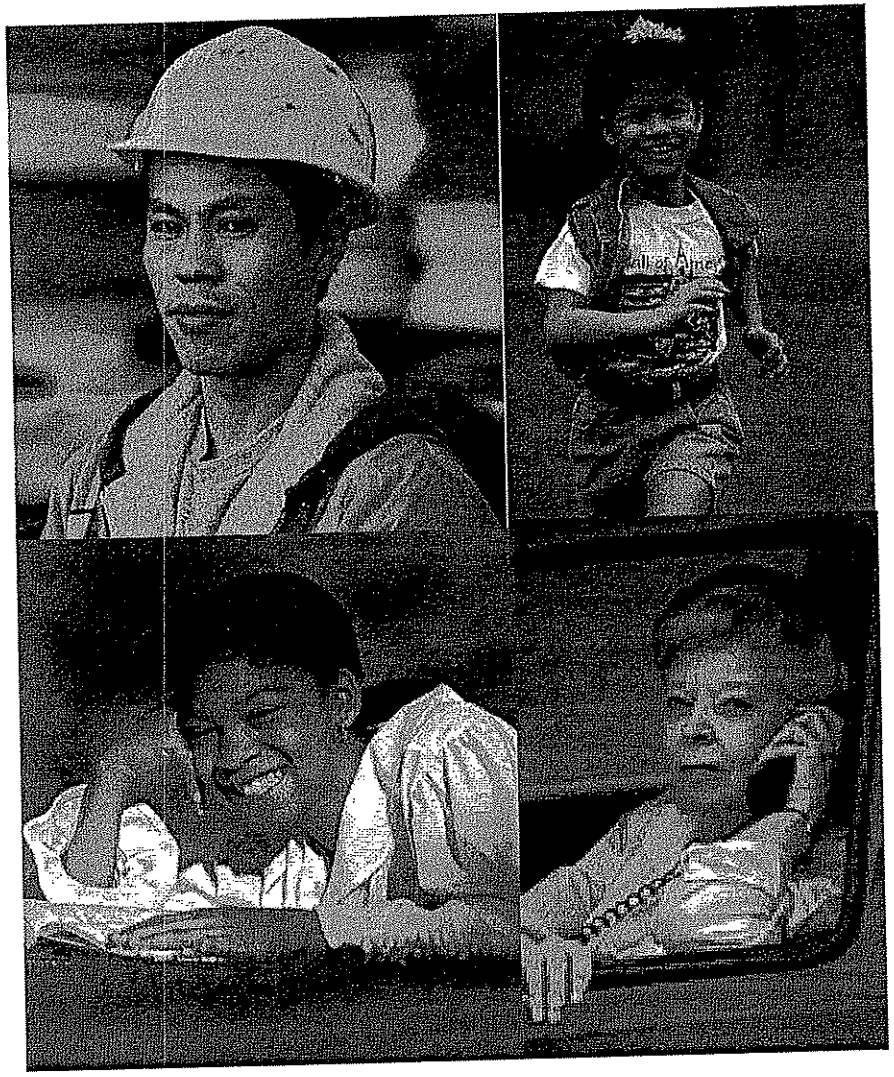
- Adults with Asthma
- Children with Asthma
- Children and teens
- People over 65
- People with chronic lung diseases



What is particle pollution?

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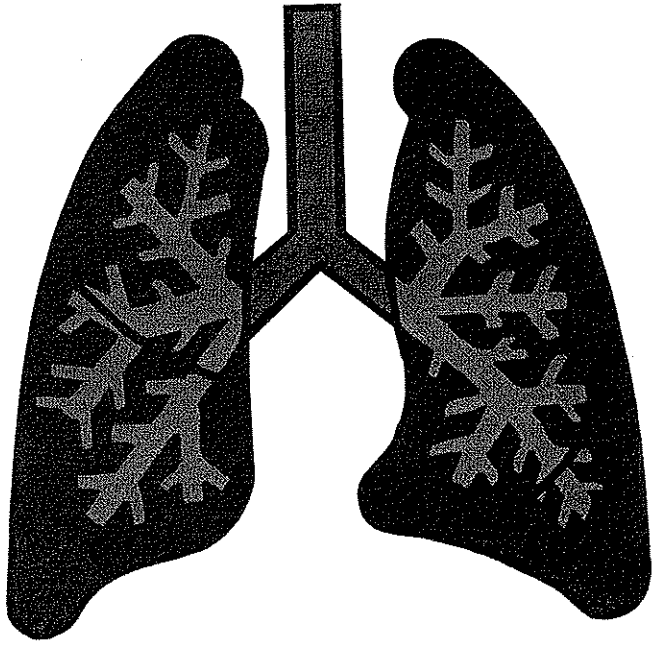
- Microscopic bits of stuff, including aerosols
- Highly transportable—blows anywhere
- Lodges deep inside the lungs



Particle pollution

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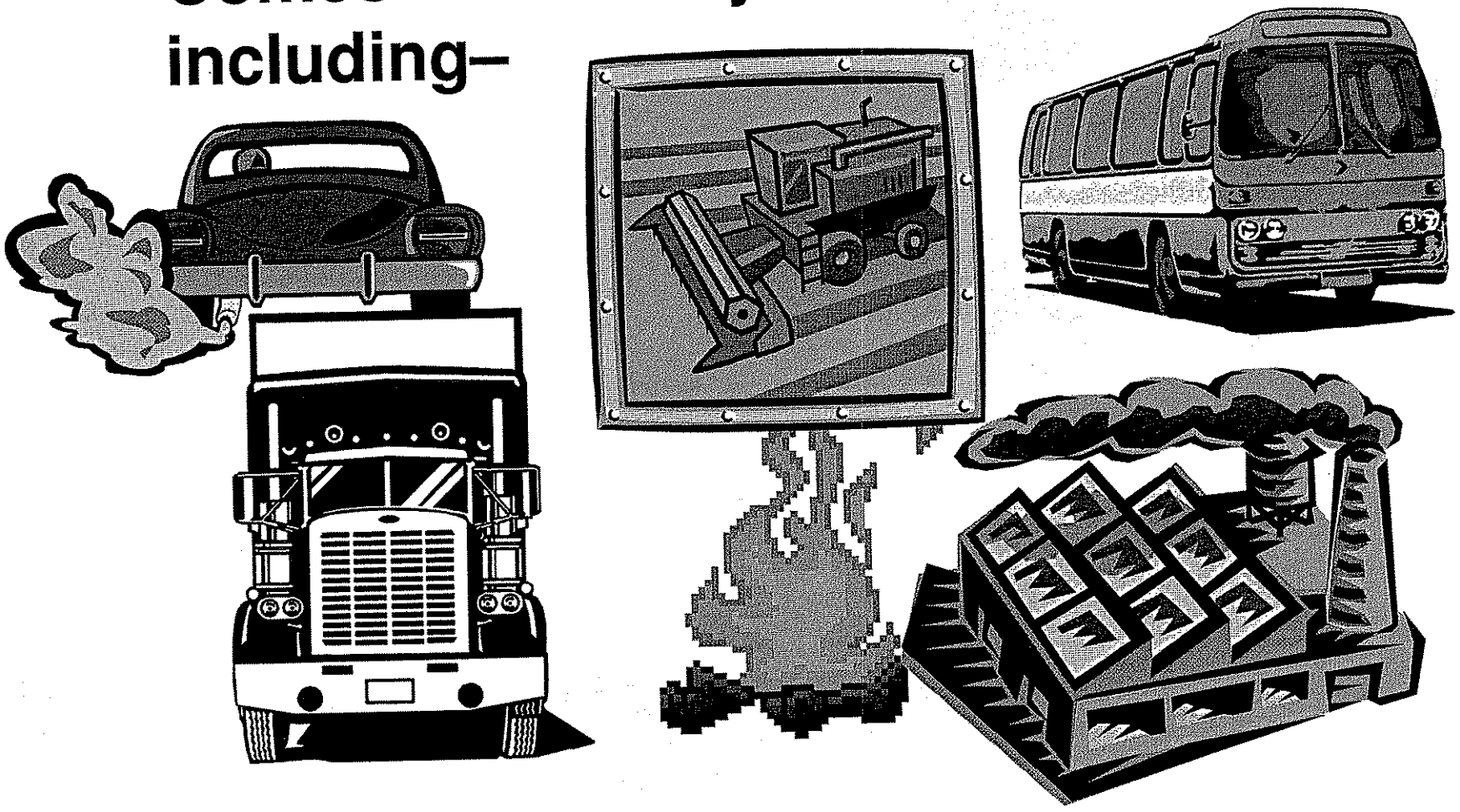
- **Comes from many sources, including–**



How big is a particle?

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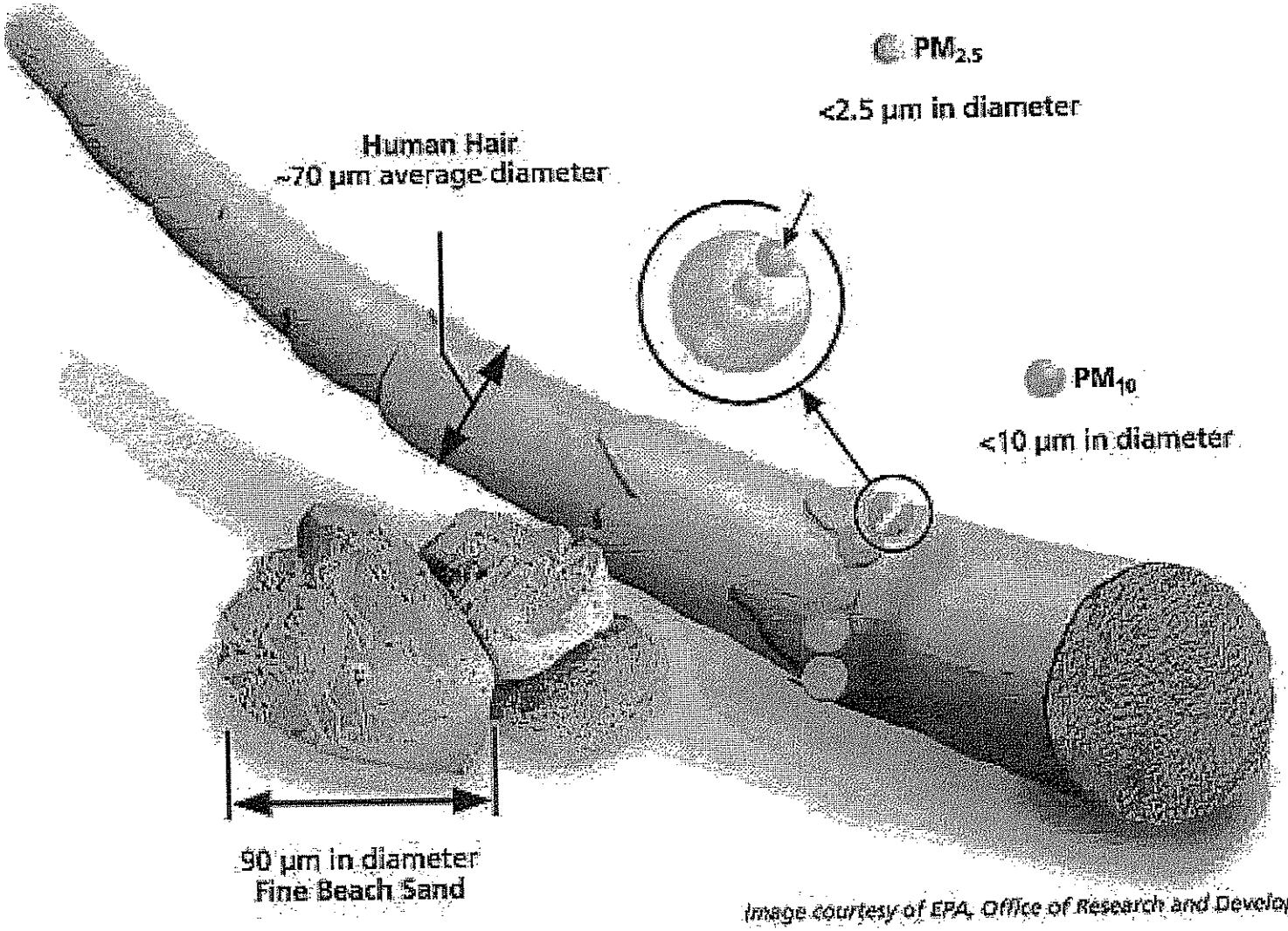

Image courtesy of EPA, Office of Research and Development

Health effects of particle pollution

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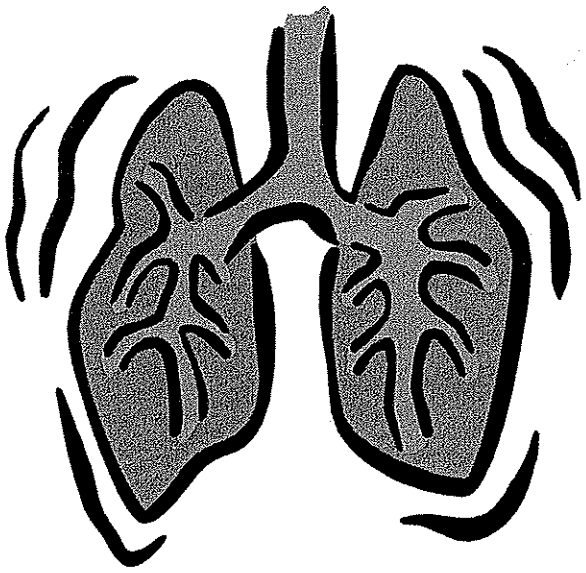

- As many as 24,000 deaths annually in CA
- Increases risk of death at high levels over hours to a few days
- Increases risk of death at lower levels over a long period

--*Health Effects Institute* 2000; Dominici F et al, *Am. J. Epidemiol* 2002

Health effects of particle pollution

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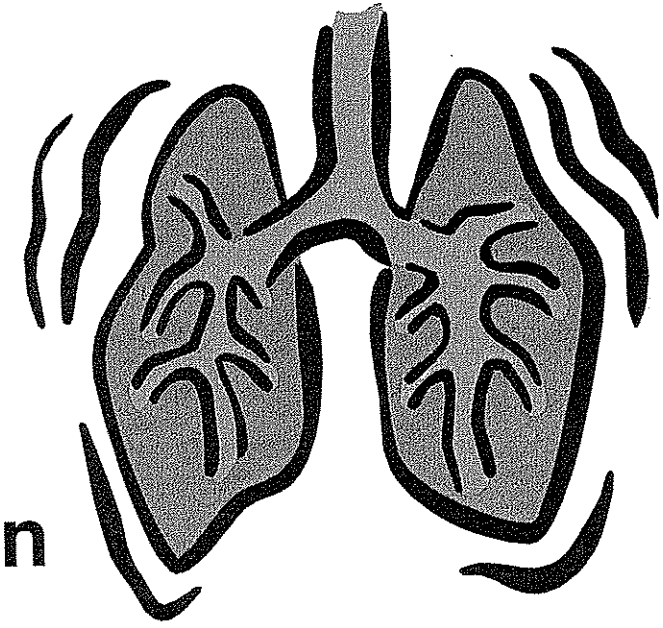
- Increased risk of :
  - Lung Cancer
  - Heart attacks
  - Asthma attacks
- Increased hospitalization & ER visits
- Slowed lung function growth in children
  - Pope and Dockery, JAWMA, 2006



Who is at risk from particles?

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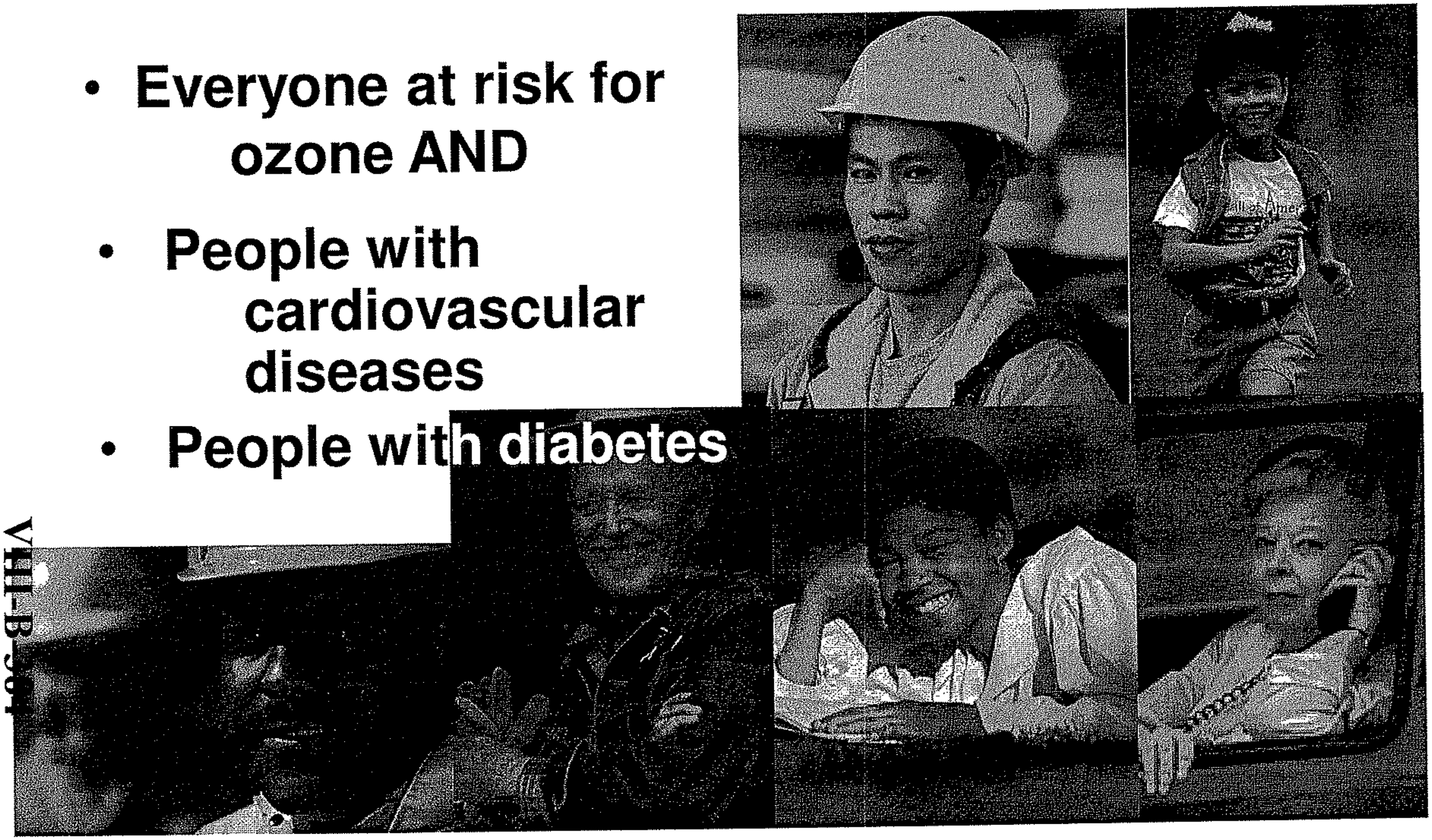
- Everyone at risk for ozone AND
- People with cardiovascular diseases
- People with diabetes



Children's Lungs

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- **Children breathe faster, their lungs are smaller and they are more affected by unhealthy air.**
- **Air pollution harms children's lungs for life. Exposure to high levels of smog causes delayed lung development and reduced lung function in children.**
- **Asthma is the most common chronic disease among children in California, and impacts children in low income areas. In Bay Area, one in five children has asthma.**
- **Children lose 1.3 million school days in California due to unhealthy air. And their parents must stay home to take care of them, resulting in workplace absenteeism.**

USC Children's Health Study

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- Reduced lung function growth from ages 10-18
- Up to 20% reduction in lung function growth
- Correlated with nitrogen dioxide, PM, acid vapor, ozone
- Likely that changes are permanent
- Long-term health implications
- Greatest effect may occur later in life (reduced lung function – a risk factor for adult respiratory illness and death)

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The major sources of smog and soot also contribute to greenhouse gases

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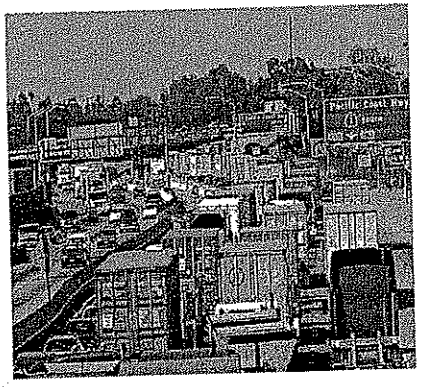

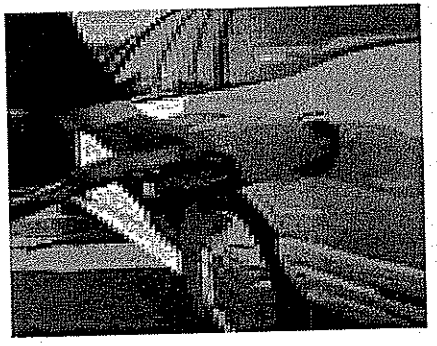

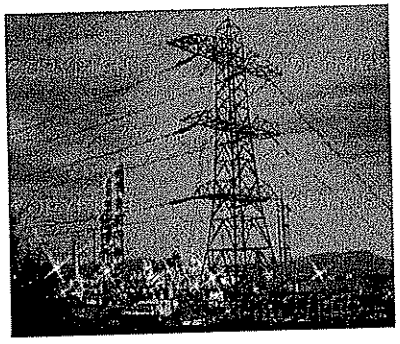

What about Global Warming?

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- **Global warming impacts that could harm lung health**
  - **Higher levels of ozone and particle pollution**
  - **Drier climate may lead to increased wildfires**
  - **Increase in allergens from change in plant growth**

Global warming feedback loop

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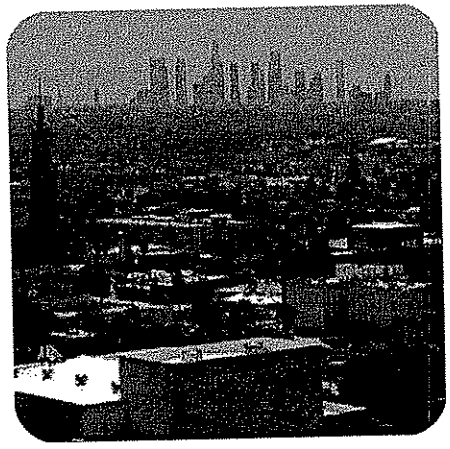
Global warming contributes to…



Unhealthier air, which contributes to…

Increased asthma attacks, lung cancer, emphysema, bronchitis and breathing problems

Fossil Fuels Biggest Culprit

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Source: Energy Information Administration, Emissions of Greenhouse Gases in the United States 2001 (Washington, DC, 2002

2008 State of the Air

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Californians breathe the worst air in the country

LA - 167 days (ozone)*

Fresno - 114 days (PM)*

Bay Area – 24 days (PM)*

*** Exceedances of federal standards 2004-2006**

Our public policy priorities

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- **Strong, measurable GHG reduction targets**
- **Strong diesel truck regulations**
- **Reducing emissions from ports**
- **Land use planning that dramatically reduces vehicle miles traveled**
- **Clean alternative fuels and zero emission vehicles**

How you can help

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- **Drive less and go electric**
- **Walk and bicycle more; take transit**
- **Don't burn wood**
- **Sign a card to support strong diesel truck and bus rule**
- **Join our e-advocacy network to clean up air pollution and support tough GHG targets and land use plans**
- **Join our Healthy Air Walk**
  www.healthyairwalk.org

Healthy Air Walk

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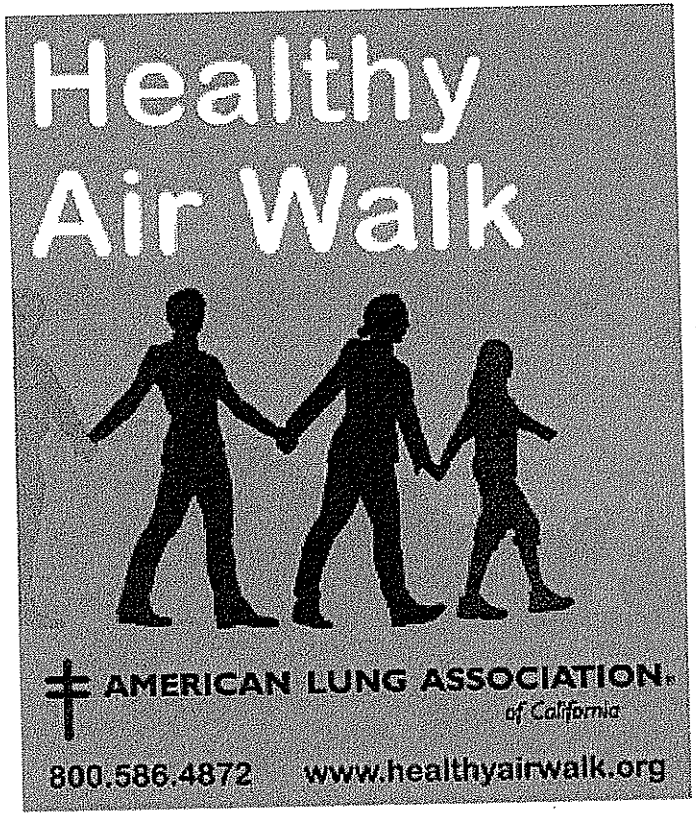
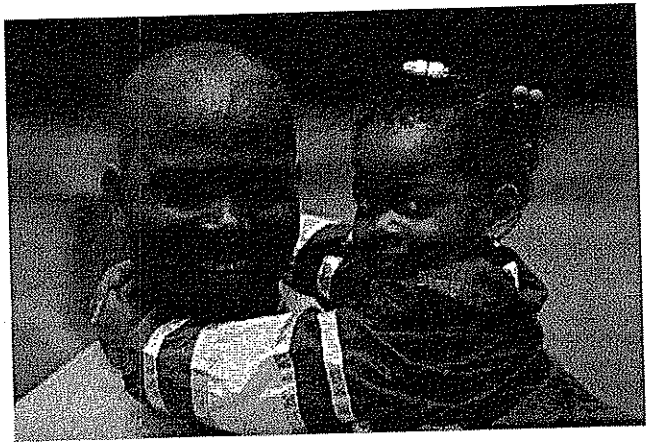
BAY AREA AIR QUALITY MANAGEMENT DISTRICT





Saturday, October 11
Lake Merritt
Oakland

www.HealthyAirWalk.org

When you can't breathe, nothing else matters

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