

# Public Meeting on Lead Monitoring in Belding

Department of Natural Resources and Environment  
Department of Community Health  
Ionia County Health Department

**September 23, 2010**

# Belding Public Meeting...

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# Discussion Points

- Why is the DNRE monitoring the air for lead in Belding?
- What did DNRE's monitoring show?
- Why does lead pose a health concern?
- Data on Blood Lead Levels in Belding
- What is being done to lower the airborne lead levels in Belding?

# Why is the DNRE Monitoring the Air in Belding ?

- New U.S. Environmental Protection regulations for Lead (November 2008)
  - Lowered the National Ambient Air Quality Standard for lead by a factor of 10, from 1.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) to 0.15  $\mu\text{g}/\text{m}^3$
  - Required states to determine if monitoring was necessary for airborne lead monitoring near sources emitting more than 1 ton per year

# Why Belding?

- National and DNRE databases showed that four facilities in Michigan were emitting 1 ton per year or more of lead
  - US (Great Lakes) Steel-Ecorse
  - Consumers Energy: Campbell- West Olive
  - St. Mary's Cement-Charlevoix
  - **Mueller Industries-Belding**

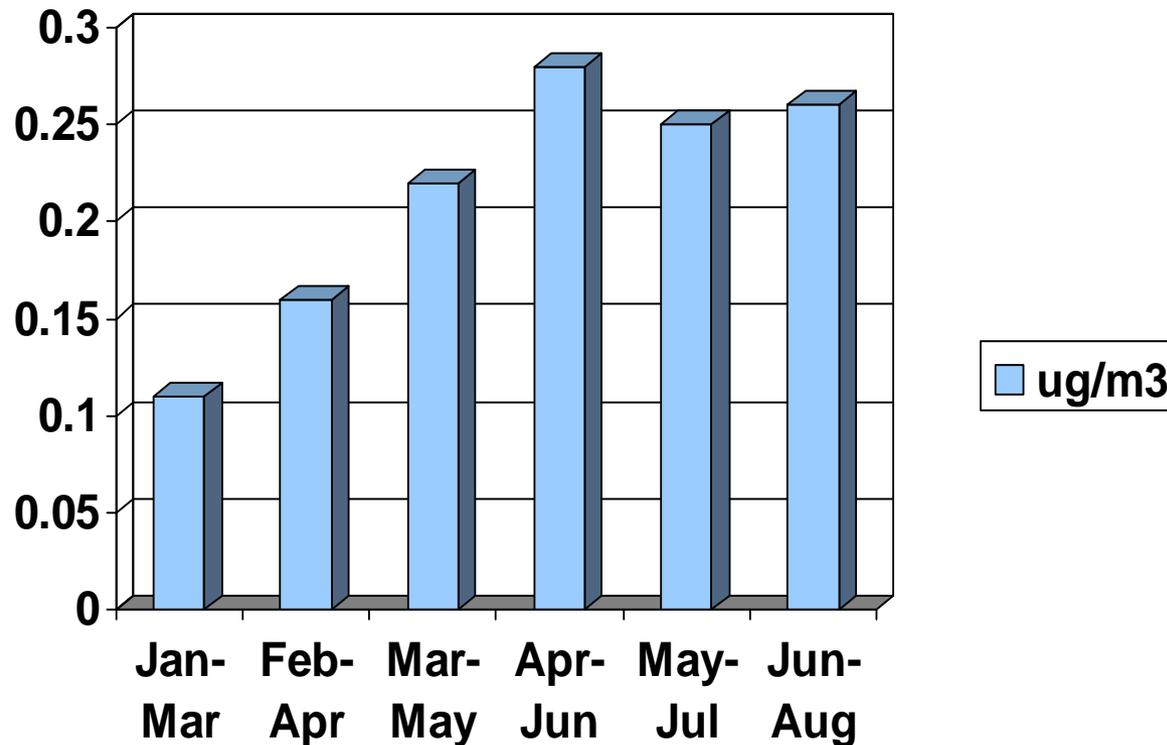
# Multi-tiered Process

- Monitoring still not required if computer modeling predicts that impact would be less than one-half of the health standard.
  - The predicted impact from Mueller Industries was greater than 1/2 the health standard.
  - The other sources were less than this screening criteria.

# January 2010: Lead Monitoring Begins

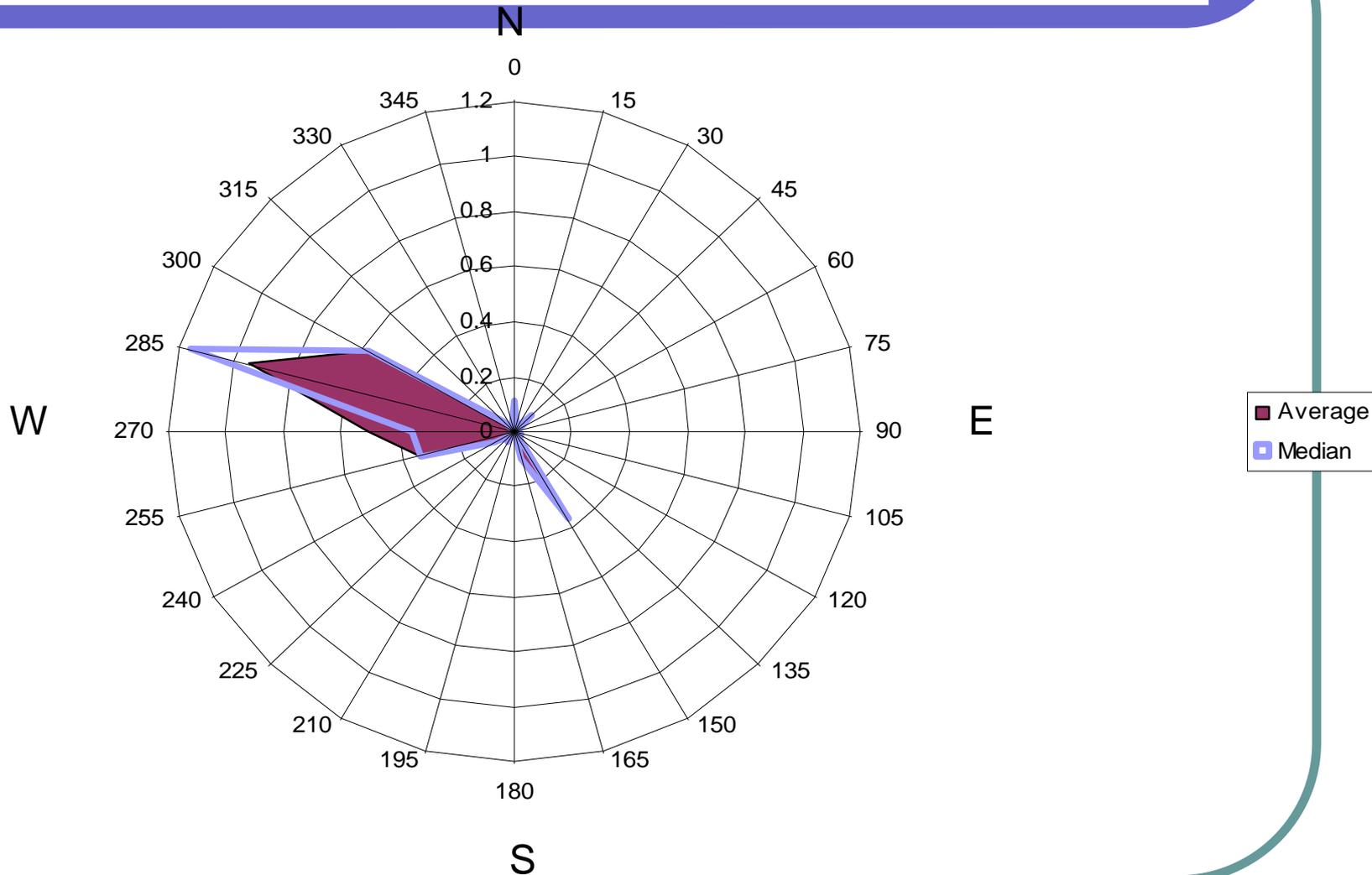


# What did DNRE's monitoring show?



Belding air-lead levels (2010 Data)

# Average Concentration by Wind Direction Jan 2010 - Aug 2010



# Why does lead pose a health concern?

Robert Sills, DNRE Air Quality Division

Toxics Unit Supervisor

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# General Information on Lead

- Lead is a naturally occurring heavy metal.
- Found at low levels virtually everywhere, in air, water, soil and food.
- House dust can also have high levels of lead.
- High environmental levels can occur due to historical lead use in gasoline and paint, and, air emissions from industries.

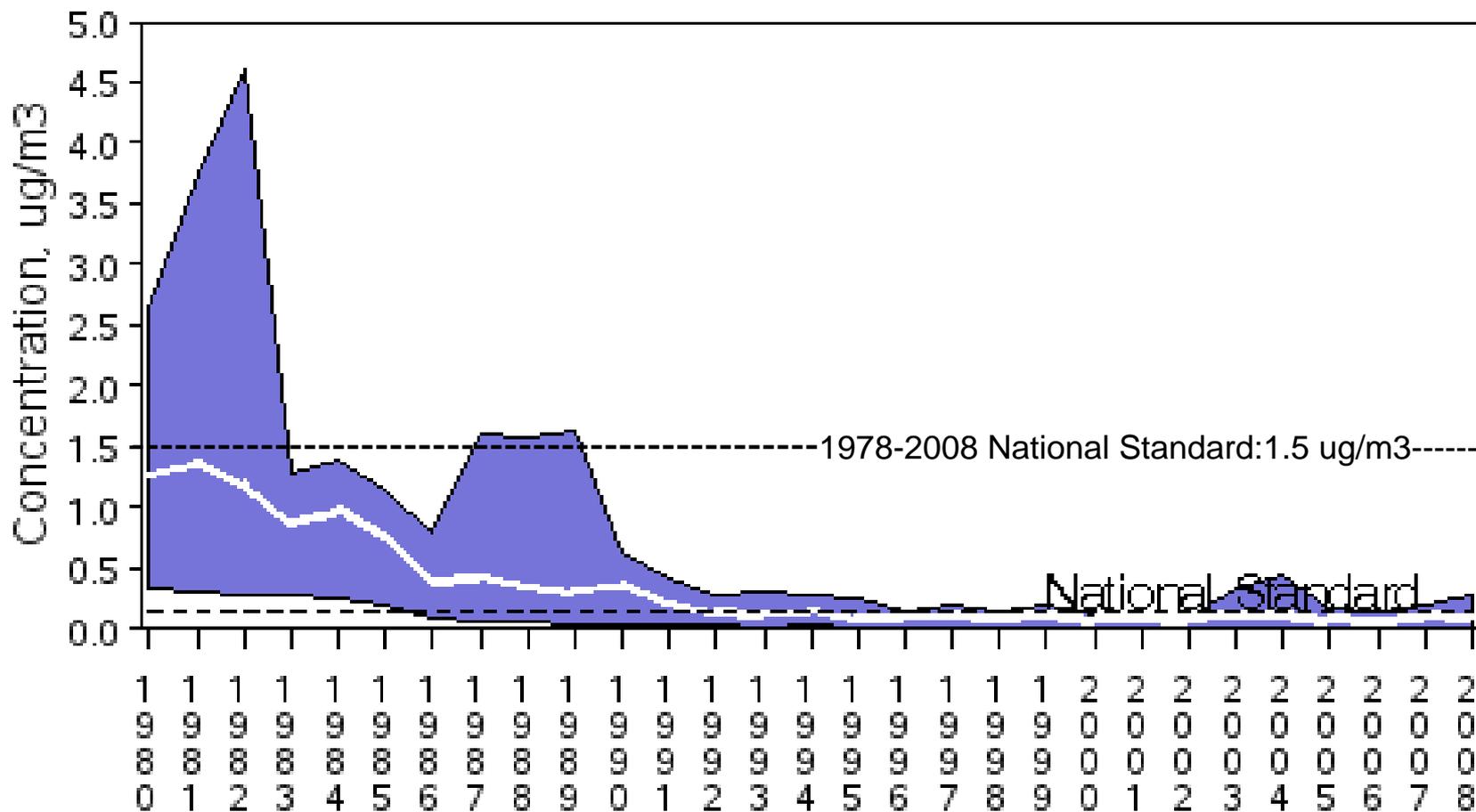
# Air Lead Levels

- MI ambient air lead levels (2005-2009): ranged from about 0.003 to 0.03  $\mu\text{g}/\text{m}^3$  (3-month averages) for rural and urban monitors
- Grand Rapids monitor: about 0.01  $\mu\text{g}/\text{m}^3$  (3-month average)
- EPA National Ambient Air Quality Standard
- 1978-2008 std: 1.5  $\mu\text{g}/\text{m}^3$  (3-month avg- calendar quarter)
- 2008-present std: 0.15  $\mu\text{g}/\text{m}^3$  (3-month avg)
- Belding: up to 0.28  $\mu\text{g}/\text{m}^3$  (3-month avg, 2010 data)

# Lead Air Quality, 1980 - 2008

(Based on Annual Maximum 3-Month Average)

National Trend based on 19 Sites



1980 to 2008 : 92% decrease in National Average

# Health Concern for Elevated Lead Exposure

- No “threshold” for effects has been identified
- Children are the most sensitive
- Effects on development, IQ, behavior
- Irreversible effects
- CDC Action Level = 10 ug/dl blood
- EPA air standard: protects public health, accounting for all air-related exposure, including inhalation and ingestion
- EPA considered a significant IQ loss = 1-2 IQ points

## What environmental exposures usually cause blood lead levels of concern?

- Lead paint in older housing is major cause
- High lead levels in soil can contribute
- High lead levels in air or drinking water can contribute (Belding water is quite LOW in lead: 3 ppb is 90<sup>th</sup> percentile)
- Elevated lead in air in Belding may contribute to children's total exposure, but expected to be minor (perhaps 1-2% of total) if house dust lead is elevated (from lead paint) and topsoil lead is elevated.

## What is the level of concern for Belding air lead levels?

- 0.28 ug/m<sup>3</sup> is almost double the current air standard of 0.15, and much higher than G.R. (0.01 ug/m<sup>3</sup>)
- Belding levels much lower than historical U.S. urban levels (to early 1990s)
- The standard protects from significant IQ loss (1-2 IQ points)
- Causes of standard exceedance should be promptly addressed
- Air lead levels contribute to elevated exposure, but only a modest amount compared to lead paint
- Public precautionary measures not recommended at this time

# Contact Information

Robert Sills, DNRE Air Quality Division

Toxics Unit Supervisor

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# Blood Lead Levels in Belding

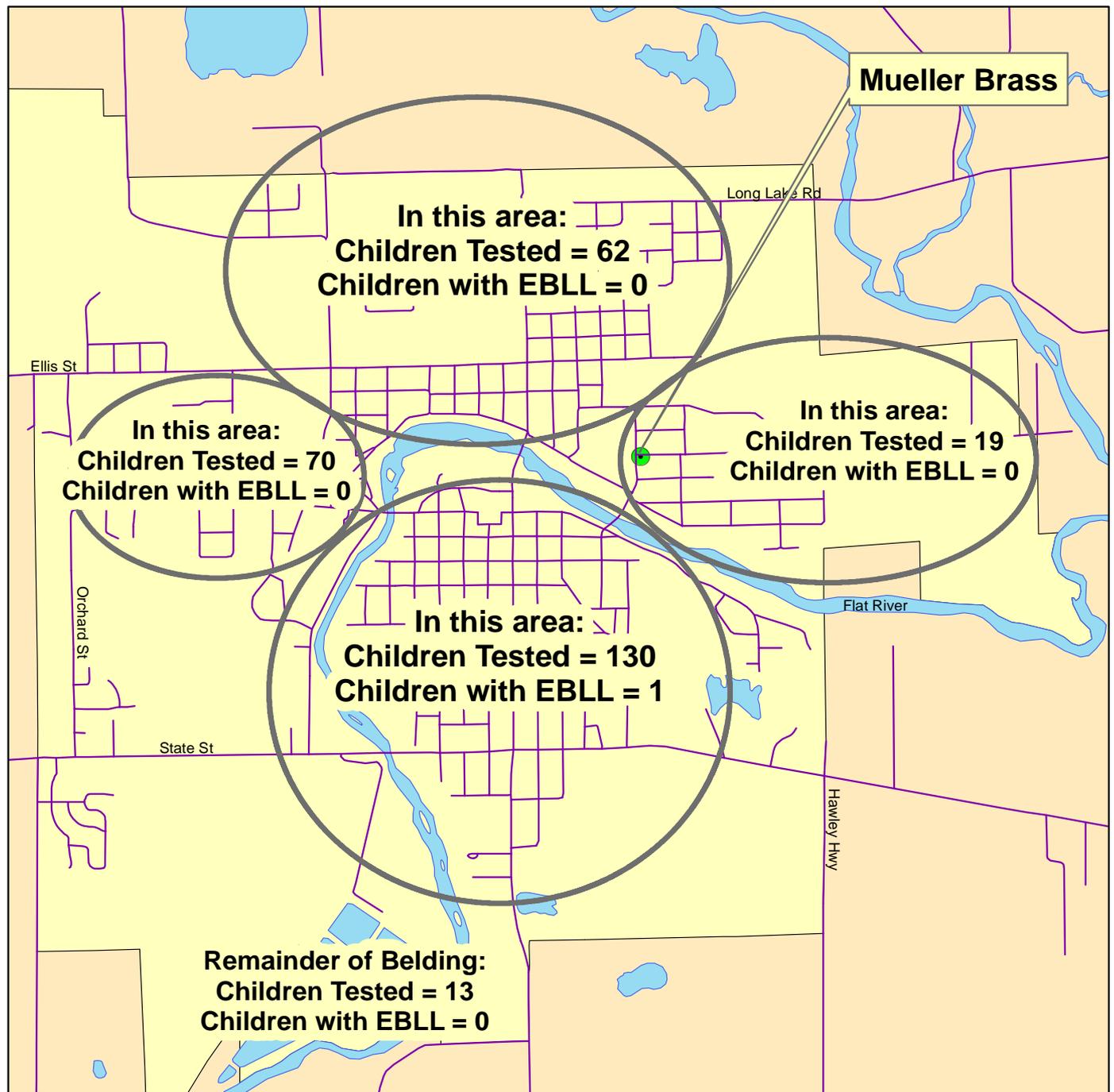
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Belding,  
Michigan

Children  
< 6 years  
of age

Tested for  
Lead Poisoning  
from 2007  
to Present

“EBLL” =  
elevated blood lead levels  
i.e., 10 micrograms/deciliter  
or higher



# Children Tested for Lead Poisoning 2007 to Present

## City of Belding

Children Tested = 294

Children w/EBLL = 1 (0.3 %)

## ZIP Code 48809

Children Tested = 571

Children w/EBLL = 2 (0.4 %)

## Ionia County

Children Tested = 2,478

Children w/EBLL = 19 (0.7%)

## State of Michigan

Children Tested = 436,234

Children w/EBLL = 4,753 (1.1%)

(“EBLL” = elevated blood lead levels -- i.e., 10 micrograms/deciliter or higher)

September 20, 2010, Source: MDCH Data Warehouse

# Adults Tested for Lead Poisoning 2008 to Present

City of Belding

Tested = 50

BLLs  $\geq$  25 ug/dL\* = 2

Ionia County

Tested = 183

BLLs  $\geq$  25 ug/dL\* = 3

State of Michigan

Tested = 32,236

BLLs  $\geq$  25 ug/dL\* = 231

\*Triggers MIOSHA Inspection

September 21, 2010

Source: Michigan Adult Blood Lead Epidemiology and Surveillance database

# What is being done to lower the airborne lead levels in Belding?

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# Source of Lead

- Lead is a component of the brass at Mueller Industries
- Mueller has equipment that emits lead during the brass rod making process

# Control of Lead Emissions

- Processes that emit lead at Mueller Industries have DNRE air use permits that restrict emissions
- Processes have control equipment to reduce pollutant emissions to the air

# Emissions Testing

- September 2009 – Mueller Industries conducted testing to evaluate emissions at the request of DNRE
- Testing showed the exceedance of permitted emission limits for the West Chip Dryer
- Violation Notice issued by DNRE to Mueller Industries for violating the permitted emission limits

# Control Equipment Upgrades

- In response to the test results Mueller started modifications to the control equipment to decrease emissions
- June 1, 2010 Mueller conducted preliminary testing that showed reduced lead emissions
- To further reduce emissions Mueller proposed installation of an enhanced scrubber system

# Control Equipment Upgrades

- The enhanced scrubber system was installed last week on the West Chip Dryer
- Started operation on Monday

# On-going Activities

- Testing is scheduled for September 30<sup>th</sup> to determine if the enhanced system reduces emissions below the permitted limits for the West Chip Dryer
- DNRE has requested additional testing to assure that all processes are complying with lead emission limits