

Fall 2013 Blood Lead Results



Participation Rates

Results

Environmental Conditions

Age Groups Targeted

- 1991-2000: age 6-60 months
- 2001-2005: age 6-36 months
- 2006-2008: age 6-60 months
- 2009-2013: age 6-36 months

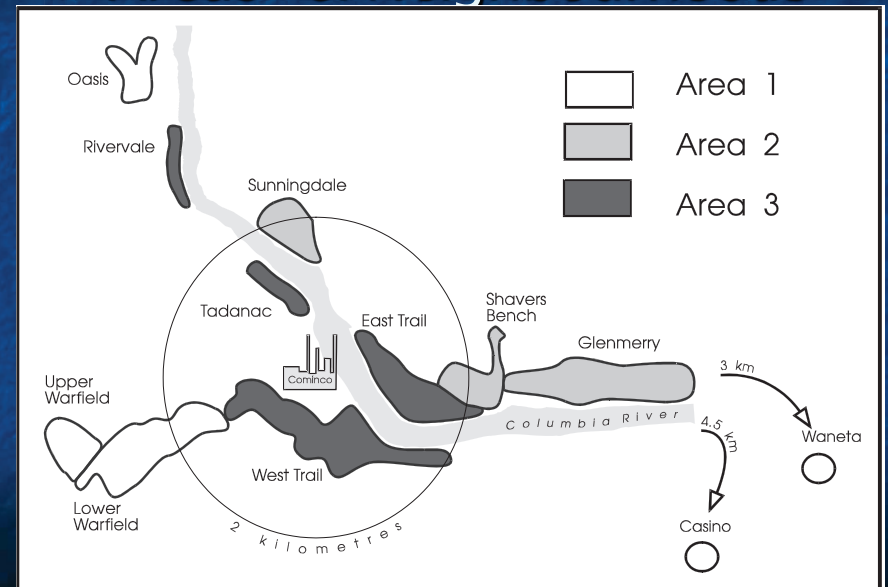


Who Was Tested in 2013?

- Target group:
 - Children aged 6-36 months, living in City of Trail or Rivervale (Area 2/3)
 - Children aged 6-36 months, living in Warfield, Casino, Oasis, Waneta (Area 1)
- Also:
 - New to area, up to age 5 yrs (60 mos)
 - Previous case management for follow-up

Hx

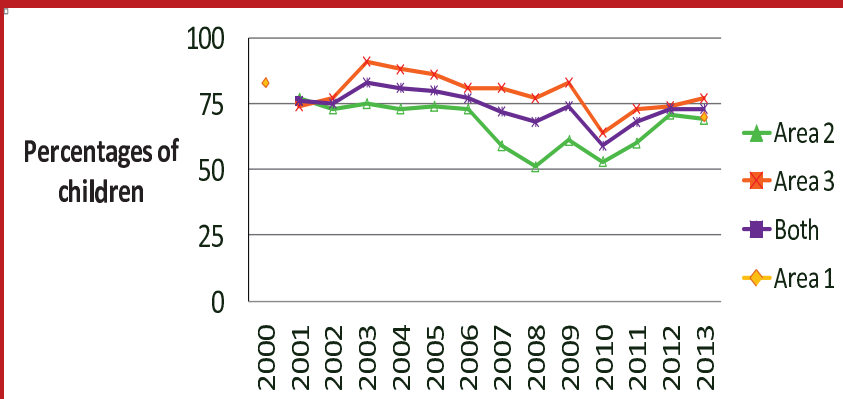
"Areas" & Neighbourhoods



Fall 2013 Total Participation By Areas

Participation for 2013 (Children under 3 years)				2012
Breakdown by Areas	# Children Contacted	# Children Participating	% Children Participating	
AREA 1 TOTAL	60	40	67%	
AREA 2 TOTAL	78	54	69%	71% (49)
AREA 3 TOTAL	100	77	77%	74% (73)
AREA 2 & 3	178	131	74%	73% (122)
AREA 1, 2 & 3	238	171	72%	

Percentages for participation by area and general trend



Capillary Samples

- Capillary samples are prone to skin contamination (CDC, 1997)
<http://www.cdc.gov/nceh/lead/publications/1997/pdf/c2.pdf>
- Capillary samples have statistically higher lead levels : 1991-2013
- There have been more capillary samples taken in recent years than in earlier years of the program
- Affects conclusions and comparisons that can be drawn from data

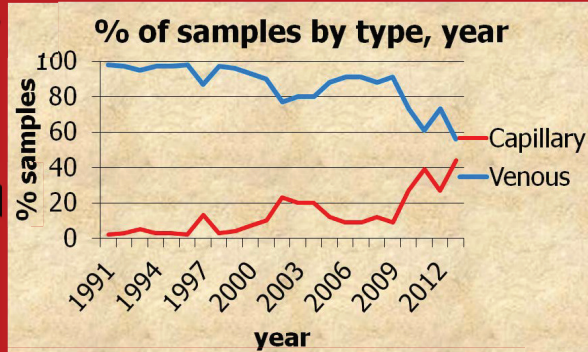
Why was a capillary sample taken?

- Not affected by

- Gender
- Area
- Neighbourhood

- Affected by

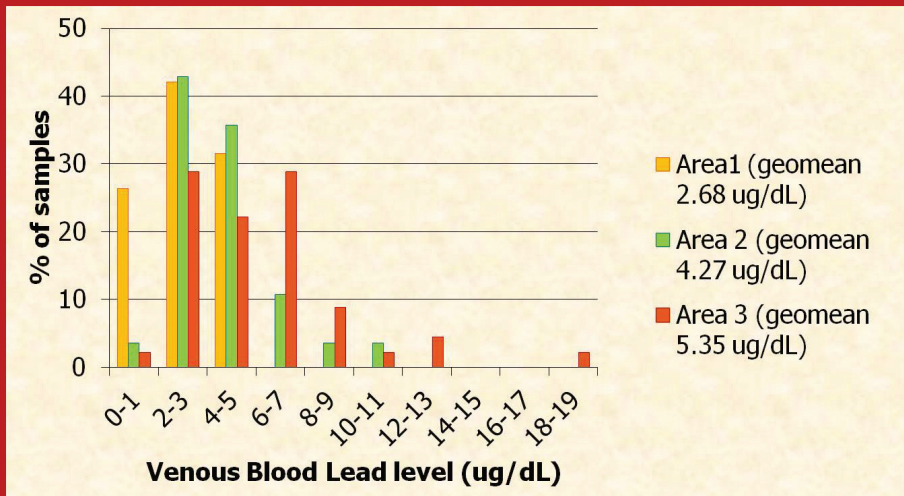
- Age (younger are more likely to have capillary)
- Year (more likely to have capillary in recent years)



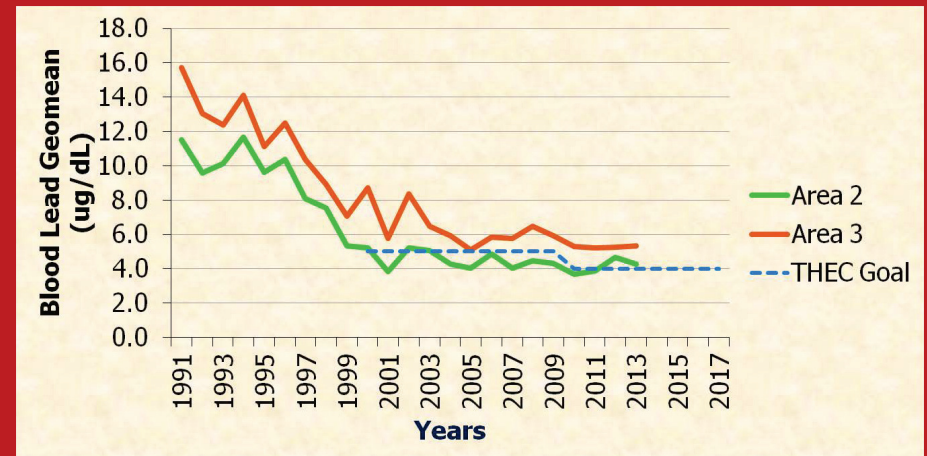
Decision made to analyze venous samples only

- Allows apples to be compared to apples
- Capillary samples are known for contamination, no way to completely control for contamination
- Small number of children with capillaries with high values were resampled and resulted in lower lead levels (2013 period)
- Sufficient power without capillary samples
- Moving to more stringent sampling methodology to ensure capillary samples are (more) comparable.

Venous Blood Lead levels 2013 by Area

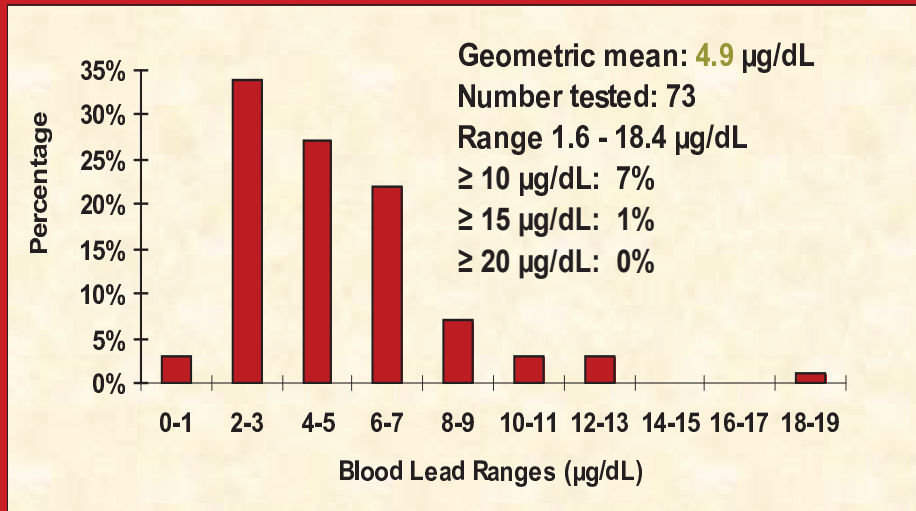


Venous blood lead geomean by Area

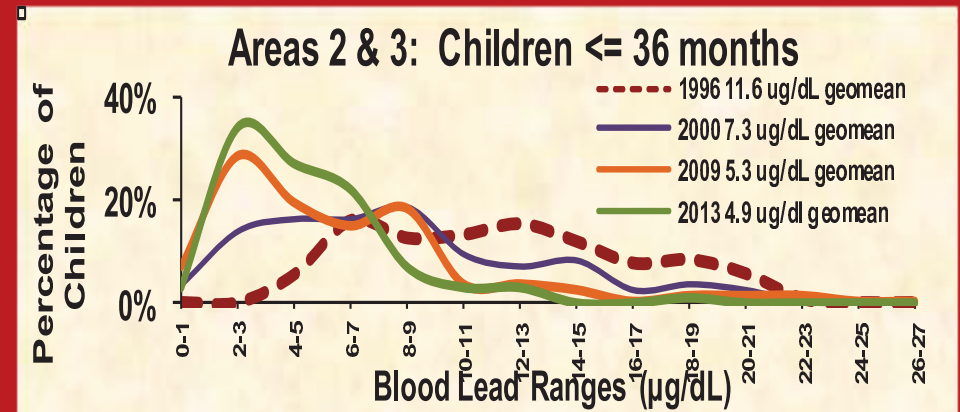


2013 Venous Blood Lead Histogram: Area 2/3

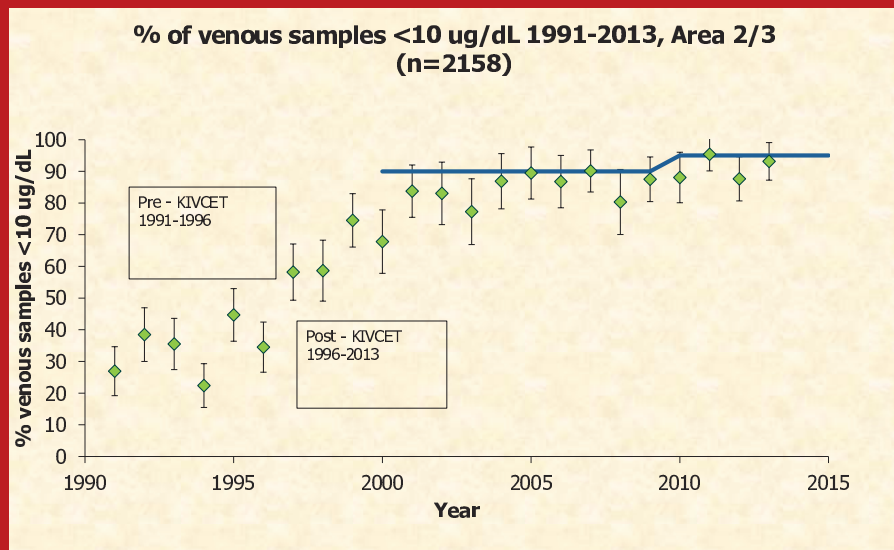
(Age 6 mos. - 36 mos.)



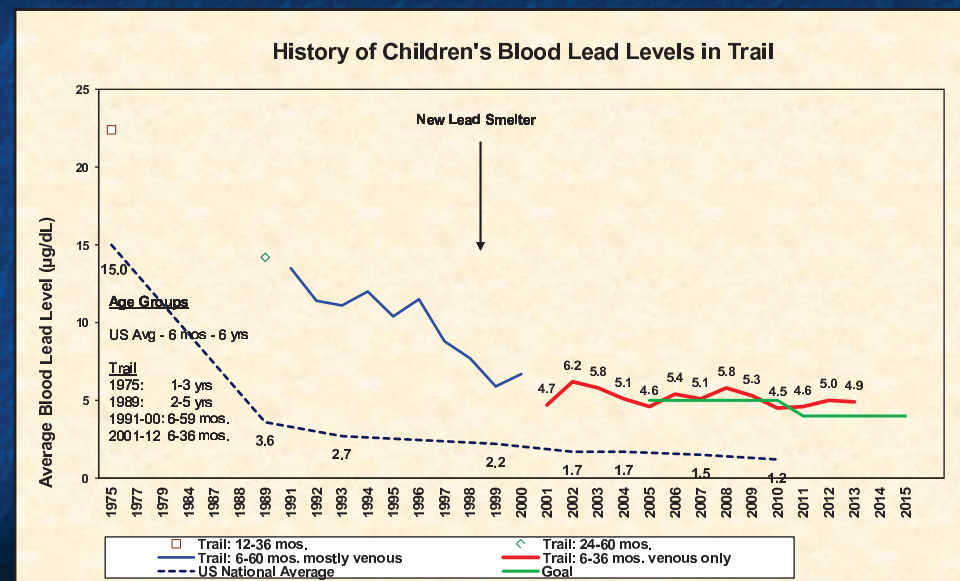
1996-2013 shift Venous blood lead levels



Goal for 2015

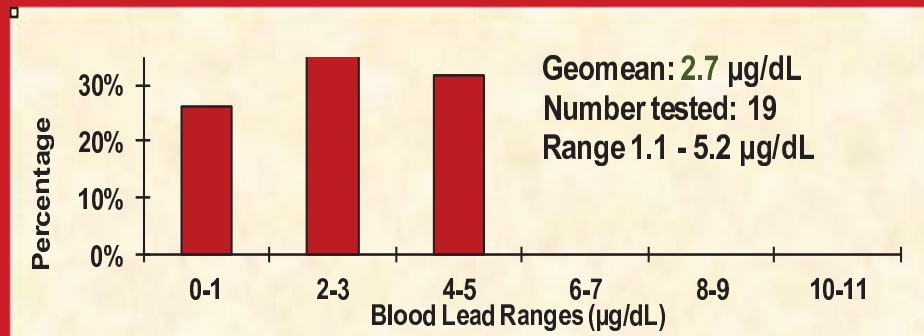


Comparison with "background"



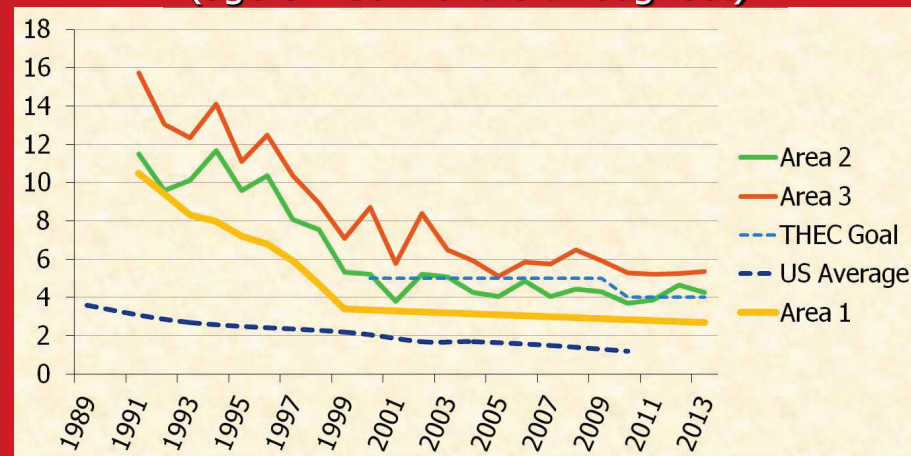
2013 Venous Blood Lead Histogram: Area 1

(Age 6 mos. - 36 mos.)

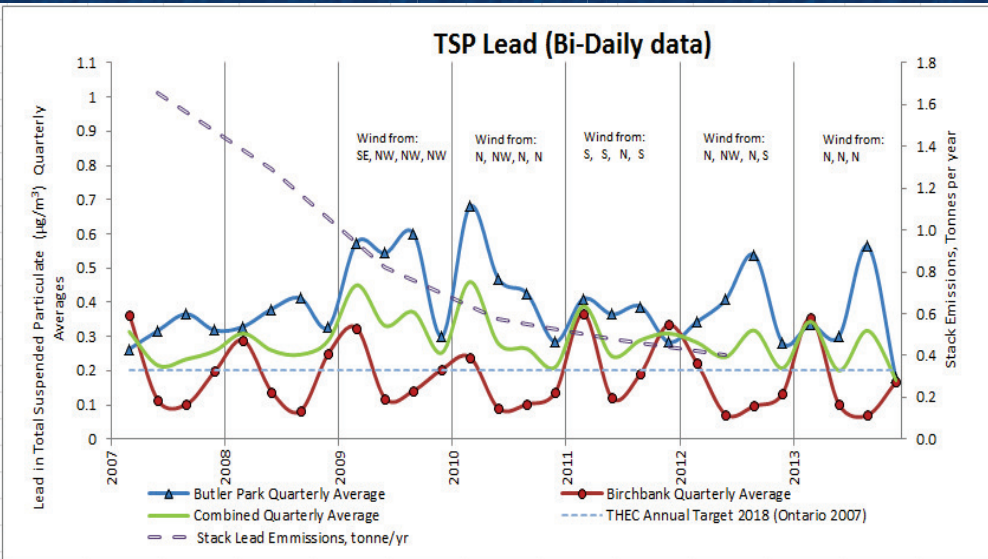


Venous Blood Lead Geomean by Area

(age 6 – 36 months throughout)



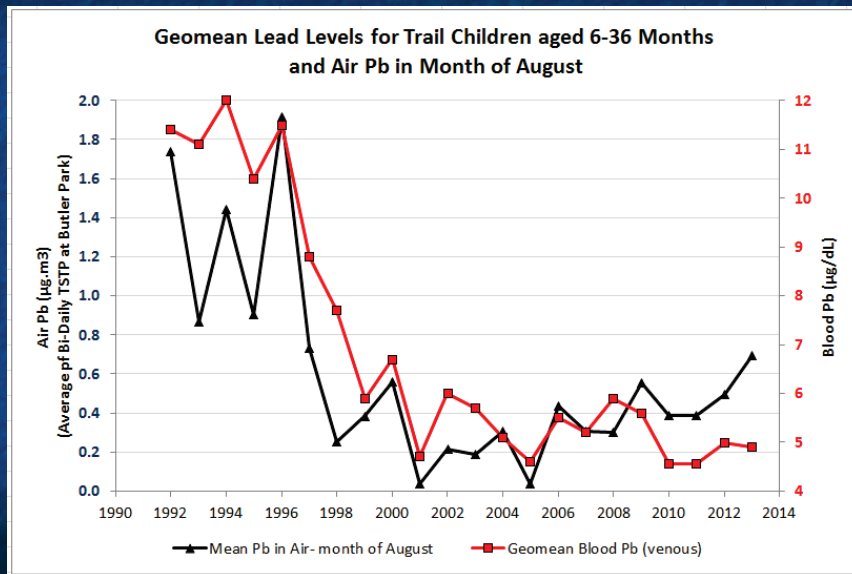
Air Lead Levels - Butler Park Stn



Air Lead Levels - Butler Park Stn

	2013	2012	2009
Jul	0.54	0.56	0.66
Aug	0.70	0.50	0.56
Sep	0.45	0.56	0.59
AVERAGE	0.56	0.54	0.60

Air Pb/Blood Pb Relationship



August Ambients Investigation

An internal investigation was launched and factors that may have been contributing were identified and addressed. As a result of the investigation we took the following corrective actions :

- Filters were replaced at two baghouses and an air leak was repaired. A system was also installed to monitor differential pressure to provide early detection of similar issues
- Concentrate is now sprayed with water to reduce dust and a testing system has been implemented to ensure moisture levels are appropriate prior to shipping
- The seals were replaced in a process material crusher and internal operating procedures were reviewed and enhanced.

Concluding messages

- Air quality has the biggest impact on blood lead levels. Teck's fugitive dust reduction project currently offers the greatest opportunity to reduce lead emissions even further to achieve our health and environment goals.
- Late summer 2013 conditions were again warm and dry. The three-month average for lead in air in July, August and September was about the same as last year, but August levels were higher than typical. A full investigation was undertaken to determine the cause, and corrective actions were taken both to fix the issue and to prevent re-occurrence.

Concluding messages

- There is no known threshold below which there is no effect from lead exposure. The lower the better.
- There has been huge improvement in children's blood lead levels over the past 20 years, and Trail is at the forefront of smelter communities in terms of low lead emissions and blood lead levels.
- There is some expected variation from year to year due to the small number tested, variation in weather, air quality etc. Overall the trend has reached a plateau over the last several years.

Concluding messages

- 2013 results show a significantly higher average lead level for the children tested by the capillary method and this testing runs a greater risk for contamination of the blood sample. We have chosen to present the venous only results to ensure that comparisons can be made across the years.
- Interior Health is investigating this issue and will present its recommendations to the THEC January 14, 2014.
- Trail Area Health and Environment Program supports will not be impacted by these questions

Concluding messages

- When looking at only the venous blood results from the past few years we are continuing to move toward our goal of 95% children with BLL <10ug/dL
- Future recommendations on area 1 program support and continued testing to be determined by the THEC in 2014

Concluding messages

- To reach our 2015 goal we require continued efforts from the internationally recognized model partnership that is the THEC
- For information regarding lead, it's effects, and the robust community supports available please visit www.THEP.ca

Questions and Comments

