

# LEAD Action NEWS

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The newsletter of The LEAD (Lead Education and Abatement Design) Group Inc.

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## WANTED!

### Lead-safety graphics for shooters & food-growers

Please spread the word that the Volcano Art Prize (VAP) 2016 deadline is Monday 25<sup>th</sup> July 2016!! And please enter your own image/slide show/film so you can win a prize! Every VAP entry can potentially be purchased (by anyone) as a Lead Safe World Poster, from <http://www.leadsafeworld.com/shop/> so fame and glory also awaits those who enter! Entries are submitted at <http://volcanoartprize.com/submitentry/>

As The LEAD Group has applied for two grants to distribute information and posters to both shooters at gun clubs and schools with food gardens, we're particularly keen to receive entries in Volcano Art Prize this year, which could be used to illustrate these projects. As an inspiration to all our readers, Dr Michael Hindmarsh has entered the following excellent photo in VAP 2016 from <http://volcanoartprize.com/portfolio-item/aurukun-shooter-with-spoonbills-barramundi-mixed-tucker-bag/>:



James with a mixed tucker bag. He was my best friend and helper at Aurukun.

VAP Entry 2016:  
Title: Aurukun shooter with spoonbills & barramundi mixed tucker bag. Notice: Mr James Kalkyorta (pictured here) is deceased. Lead-safety Message: Australian hunters take care not to eat lead shot in your tucker! Materials: Photo. Artist/Photographer: Dr Michael Hindmarsh.



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**Volcano Art Prize**

[Volcano Art Prize](#) 2016 Entry Deadline: Mon 25<sup>th</sup> July 2016!



## Editorial

*By Elizabeth O'Brien, Editor-in-Chief, LEAD Action News*

There's only a couple of weeks to go for your chance to get your lead-safety message across via a photo, art work or film! The LEAD Group's Volcano Art Prize (VAP) entry deadline for 2016 VAP is Monday 25<sup>th</sup> July 2016. And although we'd love to receive images we can use in our project for shooter lead-safety/protecting flora and fauna from lead ammunition, and our project for lead-safe school food gardens, really, any entries and all entries are most welcome!!



[www.pictureproducts.com.au](http://www.pictureproducts.com.au)

Our marvellous sponsor Pictureproducts is just waiting to print your image on a mug as a keepsake and constant reminder of your talents. There are 30 mug prizes and whatever cash that's donated for the purpose of cash prizes too. And throughout this newsletter and previous issues, you'll see the excellent winning images that are currently out there in the real world on a mug, and which anyone at anytime can have made into a Lead-safety Poster just by copying the VAP URL of the image they choose and ordering the Poster at <http://www.lead safeworld.com/product/lead safeworld-poster/>

With your creative input, eventually we'll have a Lead Safety Poster for every situation. Be inspired by the examples here which are already up and on display, spreading the word!

Test for **lead** and other heavy metals with a LEAD Group Kit before you buy property  
[www.lead safeworld.com/shop](http://www.lead safeworld.com/shop)




For more lead-safety information:  
THE LEAD GROUP INCORPORATED 1800 626 086  
[www.lead.org.au](http://www.lead.org.au)

The most important lead test at any age, is a blood lead test – ask your doctor



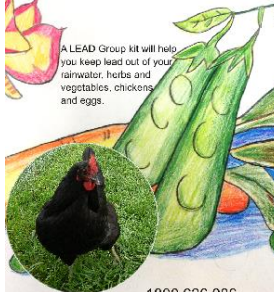
For more information  
THE LEAD GROUP INCORPORATED 1800 626 086  
[www.lead.org.au](http://www.lead.org.au)

You can test for many possible sources of **lead** in a pet's environment with a LEAD Group lab kit  
[www.lead safeworld.com/shop](http://www.lead safeworld.com/shop)



For more lead-safety information:  
THE LEAD GROUP INCORPORATED 1800 626 086  
[www.lead.org.au](http://www.lead.org.au)

Be **lead-safe** when you grow your own food!



A LEAD Group kit will help you keep lead out of your rainwater, herbs and vegetables, chickens and eggs.

THE LEAD GROUP INCORPORATED 1800 626 086  
[www.lead.org.au](http://www.lead.org.au)  
[www.lead safeworld.com/shop](http://www.lead safeworld.com/shop)

These Lead-Safety Poster URLs:

1. Test for lead and other heavy metals with a LEAD Group Kit before you buy property  
For Sale Sign slide - <http://volcanoartprize.com/portfolio-item/entropy-1/>
2. The most important lead test at any age, is a blood lead test - ask your doctor  
<http://volcanoartprize.com/portfolio-item/our-children-heading-for-a-lead-free-society/>



3. You can test for many possible sources of lead in a pet's environment with a LEAD Group lab kit <http://volcanoartprize.com/portfolio-item/dont-let-animals-health-go-down-like-a-lead-balloon/>
4. Be lead-safe when you grow your own food!  
Marrickville Council Sustainability Grant Poster - [www.lead safeworld.com/product/lead safeworld-poster/](http://www.lead safeworld.com/product/lead safeworld-poster/)

This issue of *LEAD Action News* begins with the best Australian article I've ever found on "Effects Of Lead On The Environment". It was put together by the inimitable Deni Greene et al in 1993 and we published a draft version in *LEAD Action News volume 1 number 2*, at [www.lead.org.au/lanv1n2/lanv1n2-8.html](http://www.lead.org.au/lanv1n2/lanv1n2-8.html)

The article "Effects Of Lead On The Environment" comes from the books by Greene et al "Reducing Lead Exposure In Australia" published in July 1993 – and still important!

Then we have published a letter I received in 2005 on "Australian moves to ban lead in shot and fishing sinkers", which I'm trying to get an updated version of. Please send in any info you have on the issue!

Thanks to our wonderful volunteer translator Orlando Aguirre-Lopez, we have the French version of the Tom Neltner article published in Spanish in the last issue of *LEAD Action News volume 16 number 3*, and in English in the previous *LEAD Action News volume 16 number 2*: "Household Action Level for Lead in Drinking Water."

Next is a series of other useful articles written by or with help from the IPEN and Leadnet listserv/egroup networks on: "US & Californian laws controlling lead and cadmium in jewellery", "Review of Urban Soil Lead Remediation Literature", and "Lead in paint and Poverty alleviation."

Then we look at "Our Corrupt Legal System" and the way "Changes to our corrupt legal system could result in crime prevention."

Darryl Turner then asks us to compare Arsenic in Victorian times and fluoride today, and has backed up his concern with an abstract, media release and letters linking lead and fluoride. These show for instance, elevated blood lead levels in children exposed to water disinfection and fluoridation chemicals, and how ending-silicofluoride use can reduce childrens lead blood levels and therefore violent crime. The two letters ask federal government agencies in the USA and Australia to end water fluoridation in order to not only reduce exposure to fluoride but also reduce lead in drinking water.

We end this issue with "Lead in Literature" and another poem by Walt Whitman.



## Effects of Lead on the Environment

*Text by Greene, Deni; Berry, Prof Mike; Garrard, Dr Jan. Funded by National Health and Medical Research Council (NHMRC), Commonwealth Environment Protection Agency (CEPA) and Dept of Health, Housing, Local Government, & Community Services (DHHLGCS). Published by Commonwealth Dept of Human Services and Health Published July 1993.*

*Graphics come from Volcano Art Prize (VAP) Website of The LEAD Group.*

### **Other Recommendations - Recommendations for a National Strategy, from: Reducing Lead Exposure In Australia, Final Report Vol 1 - Pages ES 7 To ES 20**

- ...
- Prohibit sale and use of lead shot, lead in children's toys, paints and crayons, lead fishing weights, lead curtain weights and other products in which lead can be readily replaced.
- ...



VAP Entry 2013. Title: Lead Fishing Gear Creates Orphans, Lead-safety message: "Many species unwillingly ingest lead objects, which, if left untreated, will kill them. Respect them and reconsider your fishing gear choices." Photographer: Jennifer Lee Harackiewicz. <http://volcanoartprize.com/portfolio-item/harackiewicz-jennifer-lead-fishing-gear-creates-orphans/>



## **Effects of Lead on The Environment - From: Reducing lead exposure in Australians. Final Report Vol 1 - pp 21-23**

Lead moves into and through ecosystems. Atmospheric lead is deposited on vegetation, ground and water surfaces. The chemical and physical properties of lead and the biogeochemical processes within ecosystems will influence the movement of lead through ecosystems. The metal can affect all components of the environment and can move through the ecosystem until it reaches an equilibrium. Lead accumulates in the environment, but in certain chemical environments it will be transformed in such a way as to increase its solubility (e.g., the formations of lead sulfate in soils), its bioavailability or its toxicity. The effects of lead at the ecosystem level are usually seen as a form of stress (US EPA 1986).

In general, there are three known ways in which lead can adversely affect ecosystems. Populations of micro-organisms may be wiped out at soil lead concentrations of 1,000  $\mu\text{g/g}$  or more, slowing the rate of decomposition of matter.

Populations of plants, micro-organisms and invertebrates may be affected by lead concentrations of 500 to 1,000  $\mu\text{g/g}$ , allowing more lead-tolerant populations of the same or different species to take their place. This will change the type of ecosystem present. At all ambient atmospheric concentrations of lead, the addition of lead to vegetation and animal surfaces can prevent the normal biochemical process that purifies and repurifies the calcium pool in grazing animals and decomposer organisms (IPCS 1992).

### **Exposure Routes for Lead to the Environment**

The main sources of lead entering an ecosystem are atmospheric lead (primarily from automobile emissions), paint chips, used ammunition, fertilizers and pesticides and lead-acid batteries or other industrial products. The transport and distribution of lead from major emission sources, both fixed and mobile, are mainly through air (IPCS 1992). While most of the lead discharged into air falls out near the source, about 20 percent is widely dispersed. Studies have demonstrated that measurements of lead in Greenland rose and fell with the rise and decline of use of alkyl-leaded petrol in the United States, Eurasia and Canada over the past century (Rosman et al. 1993). The size of the lead particles will govern how far they move from the source.



## **Effects of Lead on Soils**

It is known that lead accumulates in the soil, particularly soil with a high organic content (US EPA 1986). Lead deposited on the ground is transferred to the upper layers of the soil surface, where it may be retained for many years (up to 20,000 years). In undisturbed ecosystems, organic matter in the upper layer of soil surface retains atmospheric lead. In cultivated soils, this lead is mixed with soil to a depth of 25 cm (i.e. within the root zone). Atmospheric lead in the soil will continue to move into the microorganism and grazing food chains, until an equilibrium is reached.

Given the chemistry of lead in soil, the US EPA (1986) suggests that the uneven distribution of lead in ecosystems can displace other metals from the binding sites on the organic matter. It may hinder the chemical breakdown of inorganic soil fragments and lead in the soil may become more soluble, thus being more readily available to be taken up by plants.

## **Effects of Lead on Plants**

Plants on land tend to absorb lead from the soil and retain most of this in their roots. There is some evidence that plant foliage may also take up lead (and it is possible that this lead is moved to other parts of the plant) (IPCS 1992). The uptake of lead by the roots of the plant may be reduced with the application of calcium and phosphorus to the soil. Some species of plant have a capacity to accumulate high concentrations of lead (IPCS 1992).

The pores in a plant's leaves let in carbon dioxide needed for photosynthesis and emit oxygen. Lead pollution coats the surface of the leaf and clogs these pores, which hinders the movement of gases in and out of the leaf and reduces the amount of light reaching it. This results in stunting the growth or killing the plants, by reducing the rate of photosynthesis, inhibiting respiration, encouraging an elongation of plant cells, influencing root development or by causing premature aging. Some evidence suggests that lead can affect population genetics. All these effects have been observed in isolated cells or in hydroponically grown plants in solutions of around 1-2 µg/g of lead in soil moisture (e.g. the lead levels experienced by ecosystems near smelters or roadsides) (US EPA 1986).



Lead in air may be transferred to plants directly through fallout or indirectly through uptake from the soil. The pattern and degree of lead accumulation are largely influenced by the state of growth of vegetation; i.e. active growth periods in spring as compared to low growth periods through autumn and winter.



2015 VAP Entry. Title: Rainbow Bird. Lead-safety Message: Clean air for every person and every animal. Materials: Lead pencils and coloured pencils. Artist: Karina Wang.

<http://volcanoartprize.com/portfolio-item/rainbow-bird/>

## Effects of Lead on Microorganisms

Evidence exists to show that lead at the concentrations occasionally found near roadsides (i.e. 10,000 – 40,000  $\mu\text{g/g}$  dry weight), can wipe out populations of bacteria and fungi on leaf surfaces and in soil. This can have a significant impact, given that many of these micro-organisms are an essential part of the decomposition food chain. The micro-organism populations affected are likely to be replaced by others of the same or different species, although these may be less efficient at decomposing organic matter. Evidence also suggests that micro-organisms can make lead more soluble and hence more easily absorbed by plants. That is, bacteria exude organic acids that lower the pH in the immediate vicinity of the plant root (US EPA 1986).

## Effects of Lead on Animals

Lead affects the central nervous system of animals and inhibits their ability to synthesize red blood cells. Blood lead concentrations of above 40  $\mu\text{g/dL}$  can produce observable clinical symptoms in domestic animals. Calcium and phosphorus can reduce the intestinal absorption of lead (US EPA 1986). The US EPA report generalizes that a regular diet of 2-8 mg/lead per kilogram of body weight per day, over an extended period of time, will cause death in most animals. Grazing animals are directly affected by the consumption of forage





and feed contaminated by airborne lead and somewhat indirectly by the uptake of lead through plant roots. Invertebrates may also accumulate lead at levels toxic to their predators.



2012 VAP Entry. Title: Still Life with Shot Gun Cartridge and Orchids. Lead-Safety Message: The use of lead shot ammunition by hunters is threatening the survival of our endangered raptors (vultures, hawks, falcons, eagles and owls), switch to non leaded shot now! Orchid Penjing Sculptor/Artist: Arthur Rouw.  
<http://volcanoartprize.com/portfolio-item/still-life-with-shot-gun-cartridge-and-orchids/>

Lead shot and lead weights can severely affect individual organisms and threaten ecosystems (IPCS 1992). After three to ten days of waterfowl ingesting lead shot, the poison will reach the bloodstream and be carried to major organs, like the heart, liver and kidneys. By the 17<sup>th</sup> to 21<sup>st</sup> day the bird falls into a coma and dies. Following the ingestion of lead shot, lead toxicoses has been observed in Magpie geese; Black swans, several species of duck (including Black duck and Musk duck) and Hardhead species (OECD 1993).



VAP Entry 2013. Title: Boat on pristine waterway, Lead-safety message: "Whether you're painting watercolours or going fishing, buy lead free products." Description of Work/Material: Watercolour painting, non-toxic paint. Artist: Yvonne Preston.  
<http://volcanoartprize.com/portfolio-item/boat-on-pristine-waterway/>



Organic lead is much more readily taken up by birds and fish (IPCS 1992). Aquatic organisms take up inorganic lead through a transfer of lead from water and sediments; this is a relatively slow process. Organic lead is rapidly taken up by aquatic organisms from water and sediment. Aquatic animals are affected by lead at water concentrations lower than previously thought safe for wildlife. These concentrations occur often, but the impact of atmospheric lead on specific sites with high aquatic lead levels is not clear (US EPA 1986).



Title: Aboriginal tortoise. Lead safety message: Animals should not eat lead as they can be poisoned. Age 8. Materials: Dot Painting (Non Toxic Oil Pastels on Acid Free Paper). Artist: Leyanna Flaifel. <http://volcanoartprize.com/portfolio-item/aboriginal-tortoise/>.

### References:

IPCS (1992), International Programme on Chemical Safety, Environmental Health Criteria for Organic Lead , unedited draft, EHO, UNEP, ILO, Geneva.



OECD 1993, Draft OECD Chemicals Program. Risk Reduction Monograph No. 1 lead. Background and National Experience with Reducing Risk.

Rosman, K.J.R., Chisholm, W., Boutron, C.F., Candelone, J.P. & Goriach, U. (1993), Isotopic Evidence for the Source of Lead in Greenland Snows Since the Late 1960s' Nature, vol. 362, 25 March, pp. 333-335.

US Environmental Protection Agency (1986), Air Quality Criteria for Lead, EPA Report No. EPA/600/8-83/028aF, Office of Health and Environmental Assessment, Research Triangular Park, North Carolina.



## **Australian moves to ban lead in shot and fishing sinkers**

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**Australian Government**

**Department of the Environment and Heritage**

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Ms Elizabeth O'Brien  
The LEAD Group

Dear Ms O'Brien,

Thank you for your online enquiry of 23 December 2004 regarding moves to ban lead in shot and fishing sinkers. I apologise for the delay in replying.

The Australian Government, at the time of signing the OECD Lead Declaration, directed resources into the immediate environmental concerns of that time, which was the phasing out of leaded petrol and the use of lead in paint. Leaded petrol was successfully phased out in 2001 and the 'Lead Alert' awareness-raising program for the environmental and health effects of lead in paint and remediation measures was launched in the 1990s. Lead Alert information booklets can be obtained by contacting the Department's Community Information Unit on 1800 803 772.

To date, State and Territory governments have largely been responsible for restricting or banning of the use of lead shot in Australia. Where outright bans on the use of lead shot have not been introduced, as an alternative, restrictions on the use of lead shot have been implemented in areas of Australia where lead poisoning of wildlife is known to occur, or high lead densities have been recorded. This has been the case in the Northern Territory, where the NT Conservation Commission banned the use of lead shot at hunting reserves.

The following actions have been taken by State and Territory governments to limit the amount of spent lead shot accumulating in waterways:

- ACT: hunting of native wildlife banned.
- WA: recreational duck and quail hunting banned.
- SA: use of lead shot banned.



- NT: use of lead shot banned in hunting reserves (Lambells Lagoon, Howard Springs, Shoal Bay Coastal Reserve and Harrison Dam Hunting Reserve).
- QLD: Use of lead shot for duck hunting banned. This ban has recently been extended to include waterfowl hunting and will come into force at the beginning of the next hunting season.
- TAS: Use of lead shot banned on public wetlands and Crown Land starting from the beginning of the 2005 hunting season.
- NSW: Recreational duck hunting banned.
- VIC: The use of lead shot for duck hunting is banned.

In addition to these regulations on the use of lead shot, steel shot has been widely available in Australia for more than two decades. According to statistics provided by the Lead Development Association International, only 2% of lead consumption by end-use is used to produce lead shot. Shooters have, mostly voluntarily and partially due to State and Territory government regulations, substituted lead shot for less toxic alternatives (such as steel or bismuth shot).

Approximately 25% of angling in Australia takes place in freshwater; fly, lure and bait fishing, with lead sinkers mostly used in the latter. In addition, the typical freshwater fishing environment is not usually associated with shallow wetlands where ingestion of lead sinkers by waterfowl is likely to occur. Rather, freshwater fishing usually takes place in flowing rivers or deep water impoundments rather than in shallow wetland areas. As a result of these factors, the potential for ingestion of lead pellets by waterfowl is relatively low.

The Australian Government has set guidelines for maximum concentrations of a range of contaminants (including lead) in drinking water, irrigation water, fresh water and marine water to protect human health and the environment. To view these guidelines, I recommend you visit the National Chemical Reference Guide, which will be launched shortly, and can be viewed at [www.deh.gov.au/chemicals-guide](http://www.deh.gov.au/chemicals-guide)

I hope this information assists you. If you would like to discuss this matter further, please contact Sophie Day on 02 6274 1750 or [Sophie.Day@deh.gov.au](mailto:Sophie.Day@deh.gov.au)

Thank you for your email.

Yours sincerely,

Lisa Nardi, Acting Director, Chemical Policy Section, Environment Protection Branch, Department of the Environment and Heritage, 18 March 2005



## **Niveau d'Action des Ménages pour le Plomb dans l'Eau Potable**

### **(French Translation of) Household Action Level for Lead in Drinking Water**

*The following interesting contributions were emailed by Dr Tom Neltner (in March 2016).*

*Tom has kindly given permission for them to be reprinted in LEAD Action News vol 16 no 2.*

*Les contributions intéressantes suivantes ont été envoyées par courrier électronique par le Dr Tom Neltner (en Mars 2016). Tom a gentiment donné la permission pour eux d'être reproduits dans le "LEAD Action News" vol 16 no 2.*

*Translated into French by Orlando Aguirre-López, for LEAD Action News vol 16 no 3.*

*Traduit en Français par Orlando Aguirre-López pour "LEAD Action News" vol 16 no 3.*

EHP a publié un article impressionnant qui a examiné la relation entre les niveaux de plomb dans le sang et les niveaux de plomb dans l'eau potable. Ref: « *Utilisation d'un Index Cumulative pour Estimer l'Impact de la Concentration de Plomb en l'Eau du Robinet sur les niveaux de plomb dans le sang en Enfants de 1 à 5 ans (Montréal, Canada)* », par Gérard Ngueta, Belkacem Abdous, Robert Tardif, Julie St-Laurent et Patrick Levallois- à <<http://ehp.niehs.nih.gov/1409144/>>.

Ils ont ajusté pour les facteurs communs tels que les risques et de peinture à base de plomb et la saison de l'année. Les niveaux de plomb dans l'eau potable montent en été. Ils ont conclu que 1ppb (partie par milliard) dans l'eau (1 microgramme par litre, 1 ug/L) correspond à 0.35 ug/dL dans le sang chez les enfants âgés de 2 à 5.

Les deux principales hypothèses ont été de 50% l'absorption du plomb et la demi-vie d'un mois pour le plomb dans le sang. Ce semble faible pour les jeunes enfants et ma compréhension est que la demi-vie est susceptible plus. Le niveau de plomb dans l'eau (WLL, pour son nom dans Anglais) est environ



trois fois plus en été par rapport à l'hiver sur la base de la citation suivante de l'article :

Les moyennes géométriques de WLL ( $\pm$  SE) étaient  $2.7 \pm 2.2$   $\mu\text{g/L}$  pendant l'hiver et elles étaient  $8.1 \pm 1.5$   $\mu\text{g/L}$  pendant l'été ». « L'étude a été faite à Montréal – où il est assez froid en hiver.

Découvrez la dernière histoire dans l'excellente série de « USA Today » sur le plomb dans l'eau potable dans :

<<http://www.usatoday.com/story/news/nation/2016/03/25/epa-household-action-level-lead-drinking-water/82209520/>>.

Le titre est « Le retard d'EPA pour libérer le niveau de danger du plomb dans l'eau monte préoccupation, des questions ».

Aussi, si vous êtes intéressés par la question, consultez mon dernier blog à : <<http://blogs.edf.org/health/2016/03/25/lead-hal/>>.[le texte de blog suit]

**Fondation de Défense de l'Environnement (EDF, USA), Blog Post, 25e Mars 2016**

**Niveau d'Action de Ménages pour le Plomb dans l'Eau Potable; EPA a besoin de communiquer l'Estimation basée sur la santé.**

***Tom Neltner, J.D., est le Directeur de la Politique des Produits Chimiques.***

A [new article in USA Today's series](#) on lead in drinking water shines a light on the Environmental Protection Agency's (EPA) delays in releasing a health-based "household action level" for lead. EPA's National Drinking Water Advisory Council ([NDWAC](#)) [recommended](#) that the agency develop this number to help parents, in consultation with their pediatrician and public health agency, decide whether to invest in a filter for the water they use to make up their child's infant formula.

Un [nouvel article dans la série de « USA Today »](#) sur le plomb dans l'eau potable met en lumière des retards de l'Agence de Protection de l'Environnement (EPA, par son nom en Anglais) en libérant un « niveau d'action de ménages », sur la base de la santé, pour le plomb. Le Conseil Consultatif pour l'Eau Nationale Potable, de EPA, ([NDWAC](#), par son nom en Anglais) a [recommandé](#) que la 'agence développe ce nombre pour aider les



parent, en consultation avec leur pédiatre et l'agence de la santé publique, de décider d'investir dans un filtre pour l'eau, qu'ils utilisent pour compenser la formule infantile de leur enfant.

Sans un nombre certain, sur la base de la santé, les gens utilisent à tort actuellement le « niveau de mesures de plomb » de l'EPA de 15 parties par milliard (ppb) comme le niveau en dessous duquel aucune action est nécessaire. Le problème est que ce niveau n'a aucun rapport avec le risque sanitaire. Il est basé sur une disposition de la règle de l'eau potable qui exige que les services publics engagent un contrôle de la corrosion et, potentiellement, conduisent le remplacement de la ligne de service quand au moins 10% de pires résultats d'échantillon-cases dépassent ce niveau.

Un an après s'être engagé à développer le niveau d'action des ménages, il apparaît liée à la révision attendue depuis longtemps de l'agence de son règlement de 1991 visant à protéger les personnes du plomb dans l'eau potable. Les communautés partout au pays soulèvent des inquiétudes légitimes au sujet de la salubrité de leur eau et ont besoin d'un bon encadrement de la santé publique. Ils ne devraient pas avoir à attendre l'établissement de règles pour cette information. Je sais que l'EPA est un organisme de réglementation. Mais d'abord et avant tout l'EPA est une agence de santé publique avec responsabilité aux consommateurs pour la salubrité de l'eau potable.

Je comprends aussi le défi de développer une estimation étant donné qu'il n'y a pas d'exposition au plomb sans danger – les gens peuvent méconnaître les niveaux inférieurs à ces nombres comme s'ils étaient complètement sûrs. D'autre part, en l'absence d'un tel nombre, ils sont déjà à tort en utilisant le niveau d'action actuel de 15 ppb pour signifier que l'eau est sans danger et aucune action est nécessaire.

Il existe un précédent pour la mise en nombres basés sur la santé pour les différents risques de plomb. L'agence l'a fait pour le plomb dans le sol et pour le plomb dans la poussière sur les planchers ou les rebords des fenêtres. Pour le plomb dans la poussière, l'EPA a établi 40 microgrammes de plomb par pied carré du plancher des maisons et de installations occupées par enfants, comme la définition d'un danger qui doit être éliminé. Ceci est équivalent à un gramme - la même quantité de sucre dans un paquet que nous ajoutons à notre thé – réparti uniformément sur environ 1/2 du terrain de football. L'agence a fixé ce niveau parce qu'il entraînerait «une probabilité de 1 à 5% d'un enfant en





particulier de dépasser un niveau de plomb dans le sang de 10 µg/dL » [supérieure à 10 µg/dL était la définition d'un « élevé niveau de plomb dans le sang », en 2001, lorsque la règle a été promulguée]. Bien que des recherches ultérieures ont montré que le risque de plomb dans la poussière était beaucoup plus grande et, en 2009, l'EPA s'a engagé à réviser le nombre, il montre encore la valeur de fournir aux gens un niveau auquel un ménage doit agir.



Title Lead-Free Rainwater Collage Lead-Safety Message: To achieve lead-free rainwater for drinking, employ the right plumber to remove lead from the roof, and install a first flush diverter and lead-free potable-water-safe flashing, piping, tank, pump etc.  
<http://volcanoartprize.com/portfolio-item/504/>

Ces mesures aident les responsables de la santé publique, les organismes de logement, et les parents à mieux évaluer le risque des dangers de plomb, à déterminer ce qu'ils doivent faire pour réduire le risque et à guider la façon de fixer les priorités. Un certain nombre basé sur la santé permet aux gens de faire des choix éclairés. L'agence l'a fait pour la poussière et le sol. Elle a besoin de le faire pour l'eau.

En Février 2015, le groupe de travail de NDWAC, a demandé à l'EPA pour développer une valeur estimée pour un niveau d'action des ménages pour aider le groupe de travail en le développement de ses recommandations. L'agence a



accepté et a fourni des mises à jour en Avril 2015 et a réaffirmé son engagement en Juin 2015. Aucun numéro a été libéré.

Compte tenu des développements de Flint et les preuves de plomb dans les systèmes d'eau dans tout le pays (comme il est expliqué dans une convaincante Série « Usa Today »), le retard est intenable. EPA ne doit pas attendre sur une proposition de règle d'agir. Elle doit concentrer son expertise scientifique dans l'élaboration d'une bonne estimation, la rendre public, et d'utiliser un processus d'examen externe par les pairs pour assurer que la science est forte.

Pour plus d'information sur le "Niveau d'Action des Ménages pour le plomb dans l'eau potable », Voir aussi [www.edf.org/leadpipes](http://www.edf.org/leadpipes).

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### **Commentaire du Groupe LEAD dans "EDF Blog Post": Niveau d'Action des Ménages pour le Plomb dans l'Eau Potable**

COMMENTAIRES SOUMI À:

<http://blogs.edf.org/health/2016/03/25/lead-hal/comment-page-1/#comment-10704>

Le quel excellent blog Tom!

Comme je passe la plupart de mon temps à conseiller les parents et les autres sur les niveaux d'action de plomb pour garder eux-mêmes et leurs familles à l'abri de plomb, j'ai attendu la révision des « niveaux d'action de plomb » pour le sol, l'eau, la peinture, le poussière essuyez, etc. vers le bas en ligne avec le « niveau d'action de plomb dans le sang » pour passer de 10 ug/dL (microgrammes par décilitre) à 5 ug/dL aux États-Unis, et avec la baisse proposée à un objectif de moins de 1 ug/dL de plomb dans le sang au Canada.

Étant un parent scientifique avec non ressources, mais impatient moi, ma solution, tout attente pour l'action de l'EPA des États-Unis, a été de rechercher la monde entier pour les plus faibles « niveaux d'action de plomb » dans les différents milieux de l'environnement, et puis de prendre de rapports arithmétiques simples en fonction du « niveau d'action de plomb dans le sang » au moment où « le niveau d'action de plomb » a été recommandé ou réglé pour la poussière – ou le sol – ou l'eau etc. Par exemple, l'Australie a un niveau « ligne directrice » (ou action) pour l'eau potable de 10 ppb (10 ug/dL) que j'ai



remis à 1 ppb (c. à 1/10) dans l'instant que mes conseillers techniques, professeurs Chris Winder, Mark Taylor et Bruce Lanphear ont écrit que le niveau de plomb dans le sang doit être inférieure à 1 ug/dL (c. 1/10 du précédent « niveau d'action de plomb dans le sang » de l'Australie).

En d'autres termes, je recommande qu'un parent utilise uniquement de l'eau contenant moins de 1 ppb plomb pour faire les préparations pour nourrissons et que si leur secteur de l'eau ou l'eau de pluie contient plus de plomb que cela, ils déterminent la source du plomb et, en conséquence qu'ils se plaignent à l'Autorité de l'Eau, ou remplacent les robinets de la maison ou les tuyaux, ou la pompe d'eau de pluie, ou le toit ou le réservoir, ou qu'ils se débarrassent du plomb clignotant, etc.

La filtration, à mon avis, est la dernière ligne de défense dans la hiérarchie des contrôles et doit être utilisé comme le dernier recours si l'éradication de la source de plomb se révèle impossible.

De même, je recommande que les appuis de fenêtre accessibles aux enfants et les planchers de jeu, tous ont tous les niveaux de plomb d'essuyez en moins de 12 ug/m<sup>2</sup>.

Voici comment j'ai calculé ça: "Les niveaux de PbD [poussière de plomb, en Anglais] sur les planchers entre 6 ug/pied<sup>2</sup> [environ 60 ug/m<sup>2</sup>] et 12 ug/pied<sup>2</sup> [environ 120 ug/m<sup>2</sup>] peuvent être prévu que protègent la plupart des enfants qui vivent dans maisons pré-1978 d'avoir un niveau de plomb dans le sang supérieur ou égal à 10 ug/dL. La protection à des niveaux de plomb inférieurs nécessiterait PbDs aussi inférieurs. « Référence : Exposition des Enfants des États-Unis au Poussière de Plomb Résidentiel, 1999-2004 : II. La Contribution de la Poussière Contaminée avec Plomb aux Niveaux de Plomb dans le Sang des enfants à : <http://www.ehponline.org/members/2008/11918/11918.pdf> (14/11/08).

À la lumière de la recommandation du plomb dans le sang du "The LEAD Group" (voir ci-dessus), nous avons appliqué un facteur simple de 1/10 à la conclusion, mis ci-dessus, du Référence EHP, et je suis arrivé à la recommandation du « niveau de plomb pour la poussière essuyez » du « LEAD Group » pour l'Australie (où 1997 est l'équivalent le plus proche de la norme de la peinture au plomb des États-Unis de 1978) :

"Il peut être prévu que les niveaux de PbD [poussière de plomb] sur les planchers entre 6 ug/m<sup>2</sup> et 12 ug/m<sup>2</sup> peuvent protéger la plupart des enfants



qui vivent dans des foyers d'avant 1997 d'avoir un niveau de plomb dans le sang supérieur ou égal à 1.0 ug/dL. La protection contre des plus faibles niveaux de plomb dans le sang faudrait un PbD inférieur ».

Avec mes pragmatiques niveaux d'action de plomb, à base de mathématiques, je maintiens que les parents peuvent obtenir non détectables niveaux de plomb dans le sang tandis que les cerveaux de leurs jeunes enfants sont encore en développement, plutôt qu'attendre des niveaux d'action fixés par le gouvernement qui ne peuvent se produire jusqu'à ce que leurs enfants sont déjà à l'école (et dans la lutte).

Cordialement,

Elizabeth O'Brien, Conseiller pour le Plomb, Partenariat pour un Monde à l'abri de Plomb, « The LEAD Group Inc. ». Australie.



## US and Californian laws controlling lead and cadmium in jewellery

Information collated by Elizabeth O'Brien, with help from members of the Leadnet egroup

The United States, has created the most stringent laws controlling lead in children's jewelry/jewellery and the State of California, has the most stringent laws controlling lead in adult's jewellery and cadmium in children's jewellery.



2012 VAP Entry. Title: All that Glitters is not Gold or Silver. Lead-Safety Message: If jewellery is cheaper or heavier than expected, ask the retailer for lead test result or assume it contains lead. Never let it into the mouths of babes. Materials: Photo manipulated in Powerpoint. Artist: Ardhika Wira. <http://volcanoartprize.com/portfolio-item/all-that-glitters-is-not-gold-or-silver/>

The US Consumer Product Safety Commission (CPSC) limit of lead in children's products including jewelry/jewelry is 100 ppm (100 parts per million is equivalent to 100 milligrams per kilogram -mg/kg - or 0.01%) of lead, and this lead limit applies even to the sale, loan or donation of used (ie second-hand) children's metal jewellery. Children's products are defined by the



US CPSC as those products designed or intended primarily for children 12 years of age or younger.

Presumably, if children's jewelry includes a surface coating eg beads or charms that are coated with ink or paint, then the surface coating on the jewelry component must comply with the more stringent lead limit (from [http://www.cpsc.gov/en/Business--Manufacturing/Business-Education/Lead/Total-Lead-Content/#tl\\_04a](http://www.cpsc.gov/en/Business--Manufacturing/Business-Education/Lead/Total-Lead-Content/#tl_04a) ) for:

#### *Lead in Paint and Similar Surface Coatings*

All **children's products**, and some furniture, for adult and children, must not contain a concentration of lead greater than 0.009 percent (90 parts per million) in paint or any similar surface coatings. Household paint must also meet this requirement.

However in California, the regulation limiting lead and cadmium relates to all jewellery sold in California, with its most stringent limits on lead and cadmium being applied to children's jewellery, although children are defined as being 6 years old and under.

The following text comes from <http://oehha.ca.gov/proposition-65/proposition-65-faqs>

*What are the Proposition 65 requirements for lead in jewelry?*

*Lead is listed under Proposition 65 as known to the State of California to cause both cancer and reproductive harm. Jewelry is just one of many types of products that may contain lead. Manufacturers and importers of lead-containing jewelry must warn consumers if they will be exposed to lead in jewelry in an amount that exceeds the safe harbor level of 0.5 micrograms per day.*

*Proposition 65 settlements often result in reformulation of products so that they contain fewer chemicals and other substances known to cause cancer or reproductive harm. For example, a [2006 settlement of a Proposition 65 lawsuit \(link is external\)](#) set standards for lead in jewelry and other products. The companies involved in the settlement agreed to reduce the lead content in jewelry and other products.*

*Other state and federal laws also regulate lead in jewelry. For example, the [California] Department of Toxic Substances Control enforces the [Lead Containing Jewelry Law \(link is external\)](#)<sup>2</sup>, which limits the amount of lead in jewelry and establishes specific testing procedures for that jewelry. [DTSC has a fact sheet \(link is external\)](#) that gives additional information.*



Nationwide, the federal [Consumer Product Safety Improvement Act of 2008 \(link is external\)](#) enforced by the Consumer Product Safety Commission regulates lead in children's products, including children's jewelry. More information is available in their document [Children's Products Containing Lead; Procedures and Requirements for Exclusions From Lead Limits Under Section 101\(b\) of the Consumer Product Safety Improvement Act \(link is external\)](#).

Cadmium, another chemical on the Proposition 65 list, has been used as a substitute for lead in jewelry-making. Exposures to cadmium are subject to the same Proposition 65 warning requirement as lead. Since [January 1, 2012, a separate California law \(link is external\)](#)<sup>3</sup> has regulated children's jewelry that contains any component or is made of any material that is more than 0.03% cadmium by weight. The Department of Toxic Substances maintains a website with information [Cadmium in Children's Jewelry \(link is external\)](#).

<sup>2</sup> Cal. Health & Safety Code, §§ 25214.1-25214.4.2

<sup>3</sup> Cal. Health & Safety Code, § 25214.2

The following headings/links and text comes from the above link named "DTSC has a fact sheet", that is, from "Lead In Jewelry" fact sheet, at <http://www.dtsc.ca.gov/LeadInJewelry.cfm>

### **Why be concerned?**

*Children 6 years old and under are most at risk because their bodies are growing quickly. Jewelry containing lead poses a particular concern because children are prone to placing jewelry in their mouths, which can result in absorption of dangerous levels of lead. Lead poisoning is blamed for the death of a four year old in Minnesota who swallowed a lead containing jewelry charm.*

### **California's Metal-Containing Jewelry Law:**

- *Forbids a person to manufacture, ship, sell, or offer for retail sale or offer for promotional purposes jewelry in California unless it is made entirely from one or more of the materials specified in the law,*
- *Mandates lead restrictions for certain of the specified materials allowed in manufacturing jewelry, and*
- *Establishes separate provisions for children's jewelry, body-piercing jewelry, and all other jewelry.*

*After California enacted the Lead-Containing Jewelry Law to place limits on lead levels in jewelry, some manufacturers replaced lead with cadmium, which is also toxic. In response, California's legislature amended the Lead-Containing Jewelry law (now known as the Metal-Containing Jewelry Law)*



to restrict not only lead, but also cadmium, in children's jewelry. Cadmium levels in children's jewelry must be less than 300 parts per million, by weight. Please see our [Cadmium in Children's Jewelry Web page](#).

The above fact-sheet contains a "Lead Restrictions" link which goes to <http://www.dtsc.ca.gov/PollutionPrevention/ToxicsInProducts/upload/simple-lead-guide-rev.pdf> where you'll find the following title and text:

**GUIDE TO LEAD RESTRICTIONS IN JEWELRY IN CALIFORNIA**  
(Health and Safety Code sections 25214.1-25214.4.2), which contains the following lead limits:

*The purpose of this guide is to clarify the lead restrictions for two categories: children's jewelry and all other jewelry except body-piercing jewelry.<sup>1</sup>*

**Children's jewelry<sup>2</sup> – under California law:**

*Metallic materials: less than 0.06 percent (600 ppm) lead by weight (unless they are class 1 materials, which carry no lead restriction)*

*Plastic or rubber, including acrylic, polystyrene, plastic beads and stones, and polyvinyl chloride (PVC): less than 0.02 percent (200 parts per million) lead by weight.*

*Glass or crystal decorative components: must weigh less than one gram, excluding any glass or crystal components containing less than 0.02 percent (200 ppm) lead by weight and that have no intentionally added lead*

*A dye or surface coating: less than 0.06 percent (600 ppm) lead by weight*

*Printing ink or ceramic glaze: less than 0.06 percent (600 ppm) lead by weight*

*Class 3 materials: less than 0.02 percent (200 ppm) lead by weight.*

*Non-metallic materials that are Class 1 materials (for example – glass, ceramic, or crystal components, certain gemstones, and elastic, fabric, ribbon, rope, or string, without intentionally added lead) can be used in children's jewelry, as long as they do not violate the glass or crystal component restrictions above.*

**All other jewelry (except body-piercing jewelry):**

*Electroplated metal alloys: less than 6 percent lead by weight.*

*Unplated metals (other than Class 1): less than 1.5 percent by weight.*

*Plastic or rubber, including acrylic, polystyrene, plastic beads and stones, and polyvinyl chloride (PVC): less than 0.02 percent (200 parts per million) lead by weight.*

*A dye or surface coating: less than 0.06 percent (600 ppm) lead by weight.*

*[The above are "Class 2 materials".]*





*Any material not a class 1 or class 2 material [“Class 3 material”]: less than 0.06 percent (600 ppm) lead by weight.*

*The following materials can be used in jewelry intended for adults, and have no lead restrictions:*

*Class 1 materials, namely:*

*o Stainless or surgical steel.*

*o Karat gold.*

*o Sterling silver.*

*o Platinum, palladium, iridium, ruthenium, rhodium, or osmium.*

*o Natural or cultured pearls.*

*o Glass, ceramic, or crystal decorative components, including cat's eye, cubic zirconia, including cubic zirconium or CZ, rhinestones, and cloisonné.*

*o A gemstone that is cut and polished for ornamental purposes. The following gemstones are not class 1 materials: aragonite, bayldonite, boleite, cerussite, crocoite, ekanite, linarite, mimetite, phosgenite, samarskite, vanadinite, and wulfenite.*

*o Elastic, fabric, ribbon, rope, or string, unless it contains intentionally added lead and is listed as a class 2 material.*

*o All natural decorative material, including amber, bone, coral, feathers, fur, horn, leather, shell, wood, that is in its natural state and is not treated in a way that adds lead.*

*o Adhesive.*

*1 The body-piercing jewelry provisions under the Metal-Containing Jewelry Law identify the materials that can be used in this jewelry, without specifying lead restrictions. “Body-piercing jewelry” is defined as that part of the jewelry that is placed in a new piercing or a mucous membrane. [Please see Health and Safety Code section 25214.1(b) for a full definition.]*

*2 Under California’s Metal-Containing Jewelry Law, “children” are defined as age 6 and younger. “Children’s jewelry” is defined as “jewelry that is made for, marketed for use by, or marketed to, children. [Please see Health and Safety Code section 25214.1(c) and (d) for full definitions.]*

The astute reader will notice that the federal US CPSC lead limit of 0.01% for children’s jewelry is more stringent than some of the Californian lead limits in various components of children’s jewelry, and covers children up to 12 years of age, not just 6 years of age. The article *State Authority to Regulate Toxins in Children's Consumer Products*, by Adjunct Professor Doug Farquhar and Scott Hendrick, at <http://elr.info/news-analysis/40/10282/state-authority-regulate-toxins-childrens-consumer-products> comments specifically on this point:



*State legislatures have been at the forefront in introducing and adopting policies to restrict or ban specific hazards in certain products, seeking to regulate the amount of lead, cadmium, phthalates, bisphenyl-A, and other compounds in children's products. Congress followed the state efforts by enacting the Consumer Product Safety Improvement Act [CPSIA] of 2008, which bolsters previous efforts by the Consumer Product Safety Act, the Federal Hazardous Substances Act, and other federal laws. As a result, some state laws are preempted and some may have to be modified, while others remain unchanged...*

*Children's jewelry, as defined under California's state law, falls under the scope of federal law regulating the lead content of children's products.<sup>100</sup> Therefore, because California's lead content restrictions in children's jewelry target the same risk of injury—child lead poisoning—as the federal standards, and prescribe requirements as to the content of these products, California's standards are preempted unless identical to the federal regulations.*

*California's statute sets a number of different lead content restrictions for children's jewelry based on the type of material used. In each case, these are different than the federal graduated standard. Therefore, California's law regulating the lead content of children's jewelry will likely be pre-empted by the standards in the Consumer Product Safety Improvement Act of 2008.*

But as Caroline Cox from the Center for Environmental Health in Oakland, California commented in an email to Leadnet egroup:

“At the time it was passed, it was much better than any federal standards because there weren't any of those. Once CPSIA passed, those children's standards were much more health protective. However, I believe that the standards for "adult" jewelry are still important. Also, the cadmium standard is stricter than the voluntary ASTM standard.”

Responding to the above comment in another email to Leadnet, Dr Jeffrey Weidenhamer, Trustees' Distinguished Professor of Chemistry, Department of Chemistry, Geology & Physics, University Of Ashland, Ohio stated:

“I want to second Caroline Cox's comments about so-called 'adult' jewelry. The definitions of children's jewelry are so restrictive that many inexpensive items that would appeal to young children do not fit the classification of children's jewelry. These items can have high lead and/or cadmium content and this is not restricted by current laws, despite the fact that these are items that children may have access to.”

So until lead is banned in jewellery globally, be aware and buy lead-free!



2013 VAP Entry. Title: A Lead Weight. Lead-Safety Message: Always buy lead-free products if they are available eg lead-free ammunition, crystal, fishing sinkers, jewellery, artists' paints, wheel weights. Description of Work/Material: Photograph. Artist/Photographer: Judy Pinn. <http://volcanoartprize.com/portfolio-item/a-lead-weight/>

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# Review of Urban Soil Lead Remediation Literature

*By Dr. Mark A. S. Laidlaw*

Urban soils in many communities in the United States and internationally have been contaminated by lead from past use of lead additives in gasoline/petrol, deterioration of exterior paint, emissions from lead smelters and battery recycling and other industries.

Exposure to soil and related dust lead is widespread in many inner city areas. Up to 20-40% of urban children in some neighbourhoods have blood lead levels equal to or above 5 micrograms per decilitre, the reference level of health concern by the U.S. Centers for Disease Control and Prevention (CDC) since 2012, and of the Australian National Health and Medical Research Council (NHMRC) since 2015.



2013 VAP Entry. Title: Backyard vegies. Lead-Safety Message: These backyard vegies are organic and lead-free. Are yours? Materials: Photo. Artist/Photographer: Gabriel Anderson. <http://volcanoartprize.com/portfolio-item/these-backyard-vegies-are-organic-and-lead-free-are-yours/>



Given the widespread nature of lead contamination in urban soils, exposure has proved challenging to reduce. In order to prevent this exposure, an evidence-based approach is required to isolate or remediate the soils and prevent children and adult's ongoing exposure.

To date, the majority of community soil lead remediation efforts have been focused in mining towns or in discrete neighbourhoods where lead smelters have impacted communities. These efforts have usually entailed very expensive dig and dump soil lead remediation techniques, funded by the point source polluters.

Remediating widespread urban soil contamination using this approach is neither economical nor feasible from a practical standpoint. Despite the need to remediate/isolate urban soils in inner city areas, no deliberate, large scale, cost-effective lead remediation schemes have been implemented to isolate inner city soils impacted from lead sources other than mines and smelters. However, a growing body of literature of smaller scale pilot studies and programs does exist regarding low cost efforts to isolate lead contaminated urban soils.

Despite the widespread need for soil lead remediation in urban communities, there are relatively few peer reviewed studies in the literature that can serve as a base of evidence to evaluate the effectiveness of soil lead interventions.

In order to address this information gap, case studies from the literature regarding soil lead remediation were reviewed and have been posted under the heading "Solutions to the Problem: Review of the Soil Lead Remediation Literature" on the web page [www.urbanleadpoisoning.com](http://www.urbanleadpoisoning.com) in the form of a table with links to the journal articles, including studies where children's blood lead levels were reduced by remediation of lead-contaminated home and preschool yard soil.

The table of "Solutions" is followed by a section titled: "Simple Non-toxic Way Forward" which lists the following four steps of Professor Howard Mielke's approach to managing lead-contaminated soil:

- 1.) Cut lawn as low as possible
- 2.) Lay down Bright Orange Geotextile
- 3.) Terraseeding (soil and seed mix) -or- 3.) Apply Topsoil Using Topsoil Slinger &
- 4.) Hydroseed during Spring

Geotextile

[Geotextile link](#)



Topsoil Slingers

[Topsoil Slinger Video # 1](#)

[Topsoil Slinger Video # 2](#)

[Topsoil Slinger Video # 3](#)

[Topsoil Slinger Video # 4](#)

Terraseeding (mix soil and grass seed)

[Terraseeding](#)

Hydroseeding

[Hydroseeder Video # 1](#)

In case you didn't check out those video links (above) yet, according to Geoscape Contracting in Ontario, Canada: "Terraseeding is an innovative and proven method of seeding large areas by automatically mixing composted soil with seed and applying it to the landscape with the use of a Terraseeding blower truck." See [www.geoscapecontracting.com](http://www.geoscapecontracting.com)

A "slinger" is a machine for spreading clean topsoil evenly and Hydroseeding is a planting process that uses a slurry of seed and mulch.



Hydroseeding being carried out at the [Isle of Grain](http://www.isleofgrain.co.uk), Kent, UK.  
<https://en.wikipedia.org/wiki/Hydroseeding>

This information is being presented in order to inform scientists and the public that there are solutions to the urban soil lead contamination problem.



## Lead in paint and Poverty alleviation

By Sara Brosché, PhD, Global Lead Paint Elimination Project Manager, IPEN (International POPs Elimination Network), E-mail: [sarabrosche@ipen.org](mailto:sarabrosche@ipen.org) - sent in an email to the IPENListserv, 16 June 2016.



VAP Entry 2013: Many Languages, One Common Problem. Lead-safety message: "Lead affects not just one nation, but a global community." Materials: a graphics application incorporating a map and List of lead in different languages. Collage Artist: Natalie Cecere. <http://volcanoartprize.com/portfolio-item/cecere-natalie-many-languages-one-common-problem/> ; <http://volcanoartprize.com/wp-content/uploads/2013/09/Cecere-Lead-in-Different-languages.pdf>

Recent research at the New York University has shown the high cost of childhood lead exposure for a country in terms of loss of lifelong earnings. That is, a child whose brain development is harmed due to exposure to lead during early years will not be able to reach its full potential and contribute fully to the country's economic development. In fact, these costs are far higher than the official development assistance many developing countries and countries in transition receive. Although not the only one, lead paint is a major source of childhood lead exposure.



This research is available through a NYU website:

<http://www.med.nyu.edu/pediatrics/research/environmentalpediatrics/leadexposure>

And if a country is hard to find on the map, the numbers are listed in this table (compared to development assistance):

<http://www.med.nyu.edu/pediatrics/sites/default/files/pediatrics/worldmap/images/ODA-table-color.pdf>

And here, as percentage of the lost GDP:

[http://www.med.nyu.edu/pediatrics/sites/default/files/pediatrics/worldmap/images/Attina-Trasande\\_supplemental-material.pdf](http://www.med.nyu.edu/pediatrics/sites/default/files/pediatrics/worldmap/images/Attina-Trasande_supplemental-material.pdf)

Looking at the smaller scale, the child who is harmed by lead exposure during early ages will not be able to contribute fully to the economy of its family. In addition, such a child has a higher likelihood of being a burden on the health care system, the school system, the penitentiary system and other social welfare structures due to the effects of childhood lead exposure. These include various physical problems, a lowered IQ and learning problems, lower impulse control and higher aggressiveness.

So, eliminating lead paint in a country will most certainly help alleviate poverty both at the larger national scale, as well as on the individual level.

These are some very brief comments on the issue, I would be happy to elaborate and add more detail as needed.

IPEN - a toxics free future





## Lead is still present in excess in paints sold in many countries in Africa

2012 VAP Entry. Title: Lead is still present in excess in paints sold in many countries in Africa.

Lead-Safety Message: Ask your health department or the manufacturer before you buy paints, so you know which brands have no added lead. Description of Work/Materials: Photoshop Poster. Artist: Samuel Tetsopgang. <http://volcanoartprize.com/portfolio-item/lead-in-paints-africa/>

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## **Our Corrupt Legal System – Synopsis (in English and translated into French)**

By Evan Whitton, Publisher: BookPal, 2010, ISBN 10: 1921681071 ISBN 13: 9781921681073, Softcover

[E-book: <http://netk.net.au/Whitton/OCLS.pdf>,  
<http://netk.net.au/whittonhome.asp> ]

### **Synopsis**

[URL:[http://www.abebooks.com/products/isbn/9781921681073?clickid=TGp2ZLXUESUE2TZ2BcUZ-W-GUKSV34TGfWwI3Io&cm\\_mmc=aff\\_-ir\\_-64682\\_-77798&ref=imprad64682&afn\\_sr=impact](http://www.abebooks.com/products/isbn/9781921681073?clickid=TGp2ZLXUESUE2TZ2BcUZ-W-GUKSV34TGfWwI3Io&cm_mmc=aff_-ir_-64682_-77798&ref=imprad64682&afn_sr=impact) ]

Synopsis written in English, Translated into French by Orlando Aguirre-Lopez

The lawyer-run adversary system used in Britain and its former colonies, including the US, India, Canada, New Zealand, and Australia does not try to find the truth. It is the only system which conceals evidence. 'Our Corrupt Legal System' explains why trial lawyers, famously economical with the truth, control evidence; civil hearings take weeks, months or years; in serious criminal cases, 24 anti-truth devices allow more than 50% of guilty accused to escape justice. By contrast, in the investigative system used in Europe and other countries, including Japan, trained judges control evidence and seek the truth; civil hearings take a few hours; 95% of guilty accused are convicted. It is the most widespread, accurate and cost-effective system. Russell Fox, an Australian judge who researched the law for 11 years, concluded: 'The public estimation must be correct, that justice marches with the truth.' The vast majority of voters will support change to a truth seeking system: trial lawyers are fewer than 0.2% of the population; the public are 99.8%. 'A masterpiece.' - Phillip Knightley, twice British Journalist of the Year.

### **FRENCH TRANSLATION**

*Notre Corrompu Système Juridique*

Par Evan Whitton  
Editeur: BookPal 2010  
Couverture souple



Avis synopsis en Anglais, Traduit en Français par Orlando Aguirre-López

## **Synopsis**

Le système accusatoire, avocat terme, utilisé en Grande-Bretagne et ses anciennes colonies, y compris les États-Unis, l'Inde, le Canada, la Nouvelle-Zélande et Australie, ne cherche pas à trouver la vérité, il est le seul système qui dissimule des preuves. 'Notre Corrompu Système Juridique' explique pourquoi les avocats de procès, très célèbres pour leur économie avec la vérité, contrôlent la preuve ; les audiences civiles, prennent des semaines, des mois ou des années, dans les affaires pénales graves ; 24 dispositifs anti-vérité permettent plus de 50% des accusés de culpabilité d'échapper à la justice. En revanche, dans le système d'enquête, utilisé en Europe et d'autres pays, dont le Japon, les juges formés contrôlent la preuve et cherchent la vérité ; les audiences civiles prennent quelques heures ; 95% des coupables accusés sont condamnés. Il est le système le plus répandu, précis et économique. Russell Fox, un juge Australien qui a étudié la loi pendant 11 ans, a conclu : « L'estimation du public doit être correcte, que la justice marche avec la vérité. « La grande majorité des électeurs soutiendra le passage à un système de recherche de la vérité : les avocats de sentiers sont moins de 0.2% de la population ; le public est de 99.8%. 'Un chef-d'œuvre' – Phillip Knightley, deux fois journaliste britannique de l'année.

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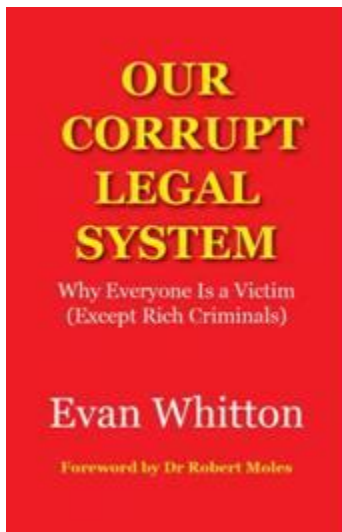
# Changes to our corrupt legal system could result in more funding for crime prevention

## OUR CORRUPT LEGAL SYSTEM- Why Everyone Is a Victim (Except Rich Criminals), by Evan Whitton

*Review by Elizabeth O'Brien\**

A new book argues that changing from our adversarial legal system to an inquisitorial (truth-seeking) system will increase justice and reduce taxes.

We believe the benefits of change are amply demonstrated in Evan Whitton's *Our Corrupt Legal System: Why Everyone is a Victim (Except Rich Criminals)*.



He says the adversarial system conceals compelling evidence, and highly-paid lawyers adept at sophistry control the evidence and the process.

Consequences include: at least 1% of prison inmates are innocent; more than half the guilty escape justice; civil hearings can take months; lawyers for white collar suspects can run taxpayer-funded agencies, e.g. the tax office, round the courts for years and perhaps run out of money.

The 1936 Tax Act barred artificial tax evasion schemes “absolutely”, but a champion sophist, Garfield Barwick, persuaded the High Court in 1957 that absolutely does not mean absolutely; there could be exceptions. Paying tax became optional for the self-employed and companies, and pay-as-you-earn taxpayers had to make up the difference.

Barwick persisted with sophistry when he became Chief Justice in 1964. His court's rulings, including that a profit is a loss, resulted in tax evasion estimated at \$800 million, some \$11 billion at today's rates, from 1970 to 1978. In 1980, PAYE taxpayers paid 81.2% of all income tax. Tax Commissioner Michael Carmody said in 1999 that tax schemes had caused “\$3.5 billion in claims and rising”. Tax evasions schemes have not diminished.



There is thus more than a grain of truth in H.L. Mencken's observation: "If all the lawyers were hanged tomorrow, and their bones sold to a mah-jongg factory, we'd be freer and safer, and our taxes would be reduced by almost half."

Whitton notes that in the inquisitorial system reformed by Napoleon, judges who are trained separately from lawyers (and paid at judges' rates) control the process and search for the truth. Lawyers are kept on a tight leash. Results include: the innocent are rarely charged; almost all the guilty are convicted; civil hearings take about a day.

He says it will not be impossible to change: we already use the inquisitorial system for inquiries of various kinds, including inquests and Royal Commissions.

I suggest that part of the tax savings accruing from the change to a truth-seeking system might be used to give added funding to an organisation whose work will reduce crime rates because it increases awareness of the damage lead poisoning does to children's brains and adults' longevity, and how to alleviate the damage.

*Our Corrupt Legal System* is available from [www.thebookdepository.com](http://www.thebookdepository.com) (free shipping worldwide), Amazon, and other booksellers.

\* Full disclosure. LEAD Group President, Elizabeth O'Brien, was involved in editing the book,



## **Les modifications apportées à notre corrompu système juridique pourrait entraîner davantage de fonds pour la prévention du crime**

**NOTRE CORROMPU SYSTÈME JURIDIQUE- Pourquoi tout le monde est une victime (Sauf les Criminels Riches), par Evan Whitton**

### **(FRENCH translation of) Changes to our corrupt legal system could result in more funding for crime prevention**

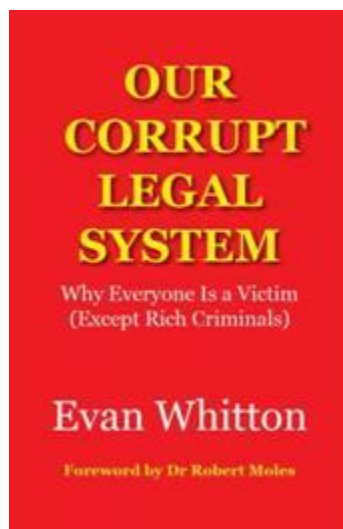
**OUR CORRUPT LEGAL SYSTEM- Why Everyone Is a Victim (Except Rich Criminals), by Evan Whitton**

*Review written in English by Elizabeth O'Brien\*, Translated into French by Orlando Aguirre-Lopez*

*Revue écrite en Anglais par Elizabeth O'Brien\*, Traduit en Français par Orlando Aguirre-López*

Un nouveau livre fait valoir que l'évolution de notre système judiciaire accusatoire à un système inquisitoire (recherche-de-la-vérité) augmentera la justice et réduira les impôts.

Nous croyons que les avantages du changement son amplement démontrées dans *Notre Corrompu Système Juridique* de Evan Whitton : *Pourquoi Tout le Monde est une Victime (Sauf les Criminels Riches)*.



Il dit que le système accusatoire dissimule des preuves convaincantes et des avocats hautement rémunérés, aptes à sophisme, contrôlent les éléments de preuve et le processus.

Les conséquences comprennent: au moins 1% des détenus en prison sont innocents; plus de la moitié des coupables échappent à la justice ; les audiences civiles peuvent prendre de mois ; les avocats des suspects de 'col blanc' peuvent courir les organismes financés par



les contribuables, par exemple le bureau des impôts, et arrondir les tribunaux pendent des années et peut-être qu'ils manquent d'argent.

La Loi de l'Impôt de 1936 interdit l'évasion artificielle des régimes fiscaux « absolument », mais un champion sophiste, Garfield Barwick, persuada la Haute Cour en 1957 que absolument ne signifie pas absolument ; il pourrait y avoir des exceptions. Le paiement des impôts est devenue facultative pour les indépendants et les entreprises et le salaire que vous gagnez comme contribuables a dû faire la différence.

Barwick persisted with sophistry when he became Chief Justice in 1964. His court's rulings, including that a profit is a loss, resulted in tax evasion estimated at \$800 million, some \$11 billion at today's rates, from 1970 to 1978. In 1980, PAYE taxpayers paid 81.2% of all income tax. Tax Commissioner Michael Carmody said in 1999 that tax schemes had caused "\$3.5 billion in claims and rising". Tax evasions schemes have not diminished.

Barwick a persisté avec le sophisme quand il est devenu Juge en Chef en 1964. Les décisions de sa Cour, y compris que le profit est une perte, a entraîné une évasion fiscale estimée à \$800 millions, quelque \$11 milliards au taux d'aujourd'hui, entre 1970 et 1978. En 1980, les contribuables PAYE ont payé 81.2% de tous les impôts sur le revenu. Le Commissaire d'Impôt, Michael Camody, a déclaré en 1999 que les régimes fiscaux avaient causé « \$3.5 milliards de revendications, et à la hausse ». Les stratagèmes d'évasion fiscale n'ont pas diminué.

Il y a donc plus d'un grain de vérité dans l'observation de H.L. Mencken : « Si tous les avocats ont été pendus demain, et leurs os vendus à une usine de 'mah jong', nous serions plus libres et plus sûr, et nous impôts seraient réduits de près de la moitié.

Whitton note que, dans le système inquisitoire, reformé par Napoléon, les juges qui sont formés séparément des avocats (et payés au taux des juges) contrôlent le processus et la recherche de la vérité. Les avocats sont tenus en laisse serré. Les résultats comprennent : les innocents sont rarement inculpés ; presque tous les coupables sont condamnés ; les audiences civiles prennent environ d'un jour.

Il dit que ce ne sera pas impossible de changer: nous utilisons déjà le système inquisitoire pour les demandas de divers types, y compris les enquêtes et les Commissions.

Je suggère qu'une partie des économies d'impôt découlant de la modification à un système de recherche de la vérité peut être utilisée pour donner un financement supplémentaire à une organisation dont le travail permettra de réduire le taux de criminalité, car elle augmente la conscience des dommages que le saturnisme fait pour le cerveau des enfants et pour la longévité des adultes, et la façon d'atténuer les dégâts.



“*Notre Corrompu Système Juridique*” est disponible à partir de [www.thebookdepository.com](http://www.thebookdepository.com) (livraison gratuite dans le monde entier), Amazon et autres libraires.

Divulgateur complet. La présidente du ‘LEAD Group’, Elizabeth O’Brien, a été impliquée dans l’édition du livre, y compris le suggère de l’ajout de ce qui suit :  
« Malcolm Turnbull (BCL Oxon), un homme politique Australien, a été encouragé par des éléments de son parti (Liberal) en Novembre 2009 pour dire que le réchauffement de la planète a été super-évalué.

La baisse, il a dit qu’il n’était plus un avocat, et donc ne pouvait pas courir un argument dans lequel il ne croyait pas ».

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## **Poisoning by arsenic in Victorian times and today: the more things change, the more they stay the same!**

*Information collated by Darryl Turner, with comments*

*"Arsenic pervaded almost every aspect of life in nineteenth-century Britain and the poison left a toll of death and illness.*

***A by-product of an emerging smelting industry, arsenic was cheap and readily available as a rat killer by the 1800s.***

***Arsenic also was odorless and tasteless and easily confused with flour or sugar and other cooking essentials.***

*By the 1830s, morbid descriptions of murders with arsenic terrified the public and became a staple of the British popular press.*

*But most of the fatalities from arsenic were more pedestrian: from accidental use in food or from exposure to arsenical compounds in consumer goods such as fabric dyes and wallpapers, in facilities that made these products and in the polluted air.*

***Arsenic was used even in medications to treat anything from asthma and cancer to reduced libido and skin problems."***

<http://historynewsnetwork.org/article/131120>

Now why I'm sending this information to you is that I was watching a program about arsenic use in the Victorian times and you'll see that I've put a link to that very program/video down the page.

The program is called, *THE HIDDEN KILLERS OF THE VICTORIAN HOME*.

Some of you like myself may have seen another program very similar to this one before but I can't remember mentioning this information about men having vested interests in the industry and if I missed it my apologies.

Now below is the link to that very story/program I saw on SBS television just now.



The first four and a half minutes of this forty-one minute documentary set the scene of the rise of consumerism in mid-19<sup>th</sup> century English cities. Keep watching if you wish to understand why the wallpaper craze caught hold (especially those made with a rich green-coloured copper arsenate pigment), and about the contemporaneous rise in arsenic poisonings at home during the era, but if you just want to know how much arsenic was used and why so much arsenic was used, all you have to do is start/fast forward the video to around about the 12 minute and 20 second mark and watch through to the 17 minute and 50 second mark (when they move on to other hazards like tight corsets and, at 33 minutes, gaslighting and gas heating). It will hit you like a sledge hammer that what is presented right before your ears and eyes about mining vested interests is happening now, today and at this very minute in time.

### **Hidden Killers of the Victorian Home - Full Documentary**

**Published on Oct 5, 2015**



<https://www.youtube.com/watch?v=Sy7iUoWi> -U

In the program you'll see that it was mentioned that William Morris, the famous designer and wallpaper manufacturer, a so called champion of the arts and crafts movement at the time, was the director of the biggest arsenic producing mine in the world. It was said that that mine produced enough arsenic to kill everyone on the planet. Despite doctors saying that people were dying due to exposure in their homes to arsenical papers, Morris claimed these people were "bitten by the witch fever."

Now it's not hard to remember what's been going on with the likes of ALCOA and the fertilizer industry, having sodium fluoride and hydrofluorosilicic acid



as waste by-products of those aluminium/aluminum smelting and mining industries, being used to fluoridate water since the 1950s.

For instance, see the excellent interview of Dr Geoff Pain regarding the hazards and politics of fluoridation of water, from Community Television West TV in Perth, at <https://www.youtube.com/watch?v=npTI-4lsdG8> (*HAVE YOUR SAY! So6E01 P1*) and <https://www.youtube.com/watch?v=hi4meBAhtso> (*HAVE YOUR SAY! So6E01 P2*).



2012 VAP Entry. Title: Water must not contain lead. LEAD SAFETY Message: Lead-contaminated water remains a major problem. Description of Work/Materials: Digital photo. Artist/Photographer: Alejandro Casas Palomino. <http://volcanoartprize.com/portfolio-item/water-must-not-contain-lead/>

Dr Pain has recommended to *LEAD Action News* readers, an article he wrote called *Plumbosolvency exacerbated by Water Fluoridation*: at [https://www.researchgate.net/publication/282439972\\_Plumbosolvency\\_exacerbated\\_by\\_Water\\_Fluoridation](https://www.researchgate.net/publication/282439972_Plumbosolvency_exacerbated_by_Water_Fluoridation) which includes the following:

### ***Recommended actions and alternative Strategy***

Considering the available information, the following actions could partially ameliorate the Plumbosolvency threat from supply networks:

- Immediate cessation of Fluoridation
- no addition of Phosphates
- minimal use of Chlorine
- use Ozone instead of Chlorine
- adjustment of pH with the least contaminating alkali available
- acceleration of Lead pipe replacement



Geoff Pain has also commented further that: "Re: Lead pipes, I have been told that there are some still in the Melbourne supply, but have no details. It is leached from solder in copper pipes and brass taps. I know that the Kalgoorlie-Perth pipeline was joined at every length with Lead when constructed and believe that is still in the circuit."

You can read over 130 articles about fluoride written and shared by Dr Pain on his website at [www.researchgate.net/profile/geoff\\_pain](http://www.researchgate.net/profile/geoff_pain) including *Fluoride causes Death and Disease*, conference paper by Dr Geoff Pain, at [https://www.researchgate.net/publication/303911083\\_Fluoride\\_causes\\_Death\\_and\\_Disease](https://www.researchgate.net/publication/303911083_Fluoride_causes_Death_and_Disease) (see graphic below).



### Fluoride causes Heart Attack, Stroke and Sudden Death



Every 12 minutes, an Australian dies from cardiovascular disease.

Fluoride continuously accumulates in the human body over a lifetime including the heart and arteries

See my review

[https://www.researchgate.net/publication/293593658\\_Fluoride\\_causes\\_Heart\\_Disease\\_Stroke\\_and\\_Sudden\\_Death](https://www.researchgate.net/publication/293593658_Fluoride_causes_Heart_Disease_Stroke_and_Sudden_Death)

Anti-fluoridation scientists like Dr Geoff Pain are campaigning for the final 5% of the global population still living with fluoridated water (including many Australians) to be protected from this 20<sup>th</sup> Century use of industrial waste. Dr Pain

As you can see above, ***"this has happened before people!"***

I think that we can use this information to our advantage, ***"BIG TIME!"***



## The links between lead and fluoride

*Abstract, media release and letters provided by Darryl Turner*

As with lead poisoning, fluoride poisoning is associated with heart attack, stroke and lowered IQ. And there are more links between lead and fluoride, as noted in the Journal article abstract and media release by Prof. Roger D. Masters and Myron J Coplan, and the letters by John Teagle and Dr. Richard Sauerheber below.

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## Confirmation of and explanations for elevated blood lead and other disorders in children exposed to water disinfection and fluoridation chemicals

*By Myron J. Coplan, Steven C. Patch, Roger D. Masters, Marcia S. Bachman.  
Available online 1 March 2007, NeuroToxicology Volume 28, Issue 5, September 2007, Pages 1032-1042 - <http://www.ncbi.nlm.nih.gov/pubmed/17420053>*

### Abstract

Silicofluorides (SiFs), fluosilicic acid (FSA) and sodium fluosilicate (NaFSA), are used to fluoridate over 90% of US fluoridated municipal water supplies. Living in communities with silicofluoride treated water (SiFW) is associated with two neurotoxic effects: (1) Prevalence of children with elevated blood lead (PbB > 10 ug/dL) is about double that in non-fluoridated communities (Risk Ratio 2,  $x_2 p < 0.01$ ). SiFW is associated with serious corrosion of lead-bearing brass plumbing, producing elevated water lead (PbW) at the faucet. New data refute the long-prevailing belief that PbW contributes little to children's blood lead (PbB), it is likely to contribute 50% or more. (2) SiFW has been shown to interfere with cholinergic function. Unlike the fully ionized state of fluoride (F<sup>-</sup>) in water treated with sodium fluoride (NaFW), the SiF anion, [SiF<sub>6</sub>]<sup>2-</sup> in SiFW releases F<sup>-</sup> in a complicated dissociation process. Small amounts of incompletely dissociated [SiF<sub>6</sub>]<sup>2-</sup> or low molecular weight (LMW) silicic acid (SA) oligomers may remain in SiFW. A German PhD study found that SiFW is a more powerful inhibitor of acetylcholinesterase (AChE) than NaFW. It is proposed here that SiFW induces protein mis-folding via a mechanism that



would affect polypeptides in general, and explain dental fluorosis, a tooth enamel defect that is not merely “cosmetic” but a “canary in the mine” foretelling other adverse, albeit subtle, health and behavioral effects. Efforts to refute evidence of such effects are analyzed and rebutted. In 1999 and 2000, senior EPA personnel admitted they knew of no health effects studies of SiFs. In 2002 SiFs were nominated for NTP animal testing. In 2006 an NRC Fluoride Study Committee recommended such studies. It is not known at this writing whether any had begun.

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E-mail: [Roger.D.Masters@Dartmouth.Edu](mailto:Roger.D.Masters@Dartmouth.Edu)

January 22, 2010

## Ending silicofluoride use can reduce children's blood lead and violent crime

Source: News Release | Research Professor of Government & Nelson A. Rockefeller Professor Emeritus; President, Foundation for Neuroscience & Society

Posted on January 22nd, 2010

Location: **United States, National USA**

[Note, June 2016: The text of this media release was published at <http://fluoridealert.org/news/ending-silicofluoride-use-can-reduce-childrens-blood-lead-and-violent-crime/> but the link to the original release that contains several graphs and tables is now broken.]

### INTRODUCTION:

Peer reviewed scientific studies over the last decade, summarized in the **attached Graphs and Table**, reveal that exposure to silicofluoride compounds has harmful side effects on human behavior and health. Millions of Americans are exposed to residue from these chemicals, which are used in 90% of fluoridated public water supplies. Because the harmful effects are not associated with the use of sodium fluoride, the problem is not linked to every form of "fluoride." Unlike sodium fluoride, silicofluorides are waste products from weapons-grade uranium processing and, despite having been nominated for testing by the National Toxicology Program in 2002, they still have never been properly tested.

### BACKGROUND:

Although water **fluoridation** has been hotly debated for over 50 years, neither proponents nor critics have focused on the specific chemical compounds used for that purpose. During World War II, when nuclear weapons were secretly



developed, it was necessary to find a discrete means of disposing of toxic waste products from uranium processing. Under the cover of water “fluoridation” for dental health, the substitution of fluorosilicic acid ( $H_2SiF_6$ ) or sodium silicofluoride ( $Na_2SiF_6$ ) for sodium fluoride ( $NaF$ ) served this purpose. Both silicofluorides are toxic before dissolving partially in water, and — unlike sodium fluoride — neither “dissociates” totally into their component elements, as was assumed when the Public Health Service formally approved them for use in 1950. This historical context explains why water fluoridation has been debated without reference to the chemical compounds that most communities use to accomplish it. Today, however, the practice urgently needs to be re-examined in the light of findings in neurotoxicology over the last decade.

### **SILICOFLUORIDES, BRAIN CHEMISTRY, AND BEHAVIOR:**

Peer reviewed scientific studies, published in journals such as *Neurotoxicology*, and the *International Journal of Environmental Studies*, show the link between silicofluoride use and harmful side effects on behavior and health. Because these harmful side effects are not observed where sodium fluoride is added to water, not all fluoridation systems present the dangers discussed here. After Westendorf (1975) linked silicofluorides to acetylcholinesterase inhibition and poor impulse control, others found they increase children’s blood lead levels and reduce the activity of dopamine, another neurotransmitter essential for self-control. The foregoing discoveries have identified reasons that significantly higher rates of violent crime, substance abuse, and learning disabilities are found where silicofluorides are added to public water supplies.

Although it may seem implausible that we are poisoning our own children, it’s essential to consider the circumstances in which silicofluorides were introduced — and to remember the tragedy often attributed to lead water pipes in ancient Rome. Moreover, this is not the only time in history that government bureaucrats and entrenched interest groups have refused to admit they made a mistake. What’s telling is that repeated offers to debate silicofluoride safety have consistently been ignored by dentists and doctors who claim water fluoridation is safe regardless of the chemical used for the purpose. Following publication of the first findings described here, in 2002 the National Toxicology Program nominated the silicofluorides for government testing — but no such studies have been done.

### **RESEARCH FINDINGS**

**ONE:** Controlling for socio-economic and ethnic factors, silicofluorides are associated with increased lead absorption from industrial pollution and old housing. (See Figure 1). These effects are confirmed by multivariate analyses of three large population studies (total sample over 400,000 children).





**TWO:** Lead is known to interfere with the neurotransmitter dopamine, an effect which increases impulsive behavior. That silicofluoride is linked to harmful effects on brain chemistry and behavior is confirmed by evidence of a greater frequency of learning deficits and higher rates of violent crime where water is treated with these chemicals (Figures 2a-2b). This effect is NOT found for rates of property crime, which is less likely to be impulsive than acts of violence.

**THREE:** Where silicofluoride use is combined with addition of chloramine as a disinfection agent, laboratory experiments show increased leaching of lead from brass meters, faucets, or other water fixtures (Table 1).

**FOUR:** Since minorities and poor children are significantly more vulnerable to blood lead levels over 10?g/dL (Figure 3a-b), these findings reflect a grave injustice.

These and other research findings co-authored by the undersigned justify an immediate moratorium on using silicofluorides. Such a ban should not be lifted unless objective peer-reviewed studies demonstrate silicofluorides are safe and thus provide an alternative explanation of our findings.

More information (including a full bibliography and access to Westendorf's thesis) is available at: <http://www.dartmouth.edu/~rmasters>

For further information or hard copies of technical publications, contact:

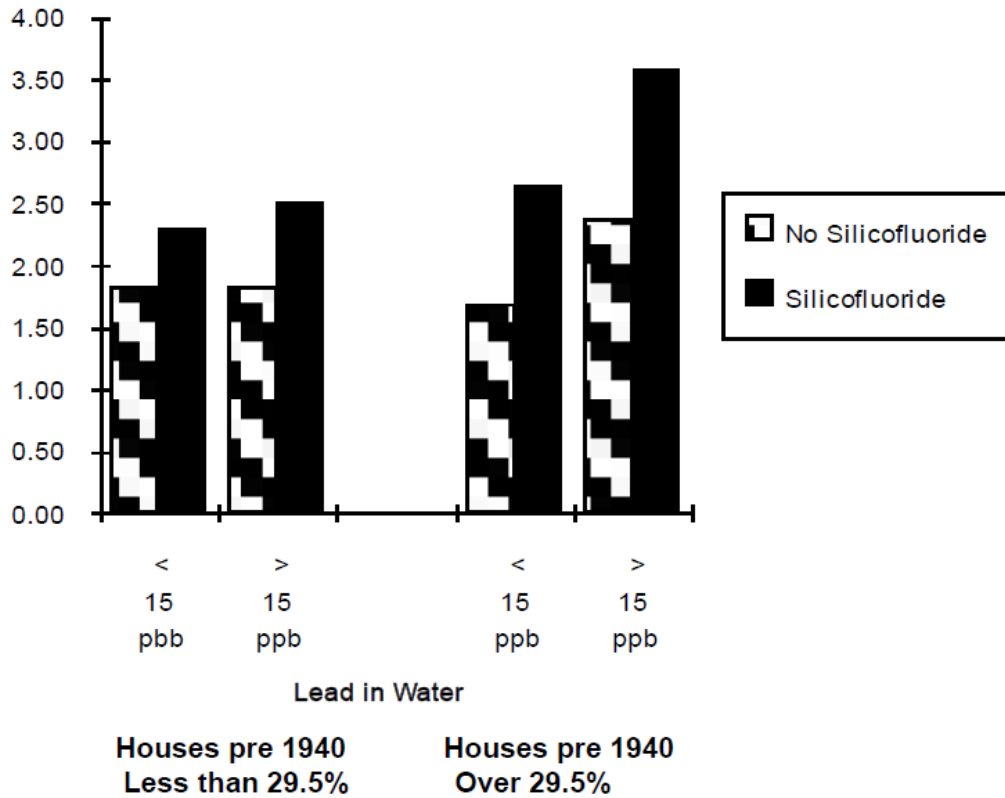
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**Figure 1**

**Factors Associated with Children's Blood Levels - Massachusetts**



Statistical Significance of Analysis of Variance (ANOVA):

Main EFFECTS

% Houses pre 1940:  $p = .00901$ ,  $F 21.17$

90th percentile 1st Draw Lead > 15ppb:  $p = .0101$ ,  $F 6.75$

Silicofluoride use:  $p = .0177$ ,  $F 5.63$

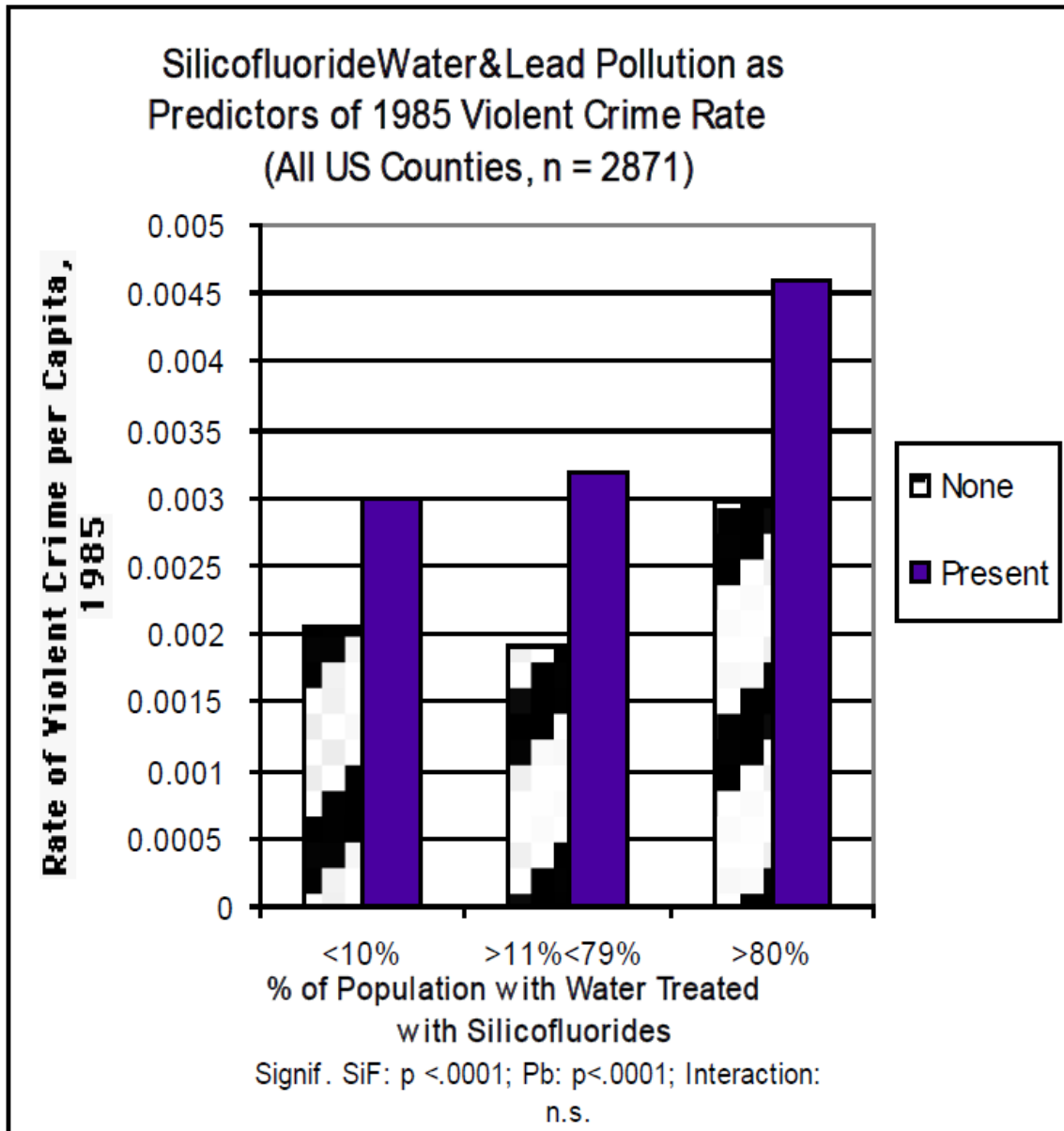
Interaction effect

silicofluoride use \* 1st Draw Lead in Water:  $p = .0422$ ,  $F 4.18$

Source: Masters & Coplan, "Water Treatment with Silicofluorides and Lead Toxicity," *International Journal of Environmental Studies*, 56: 435-439 (1999), Fig. 1.



Figure 2a



Lead Pollution in EPA Toxic Release Inventory:

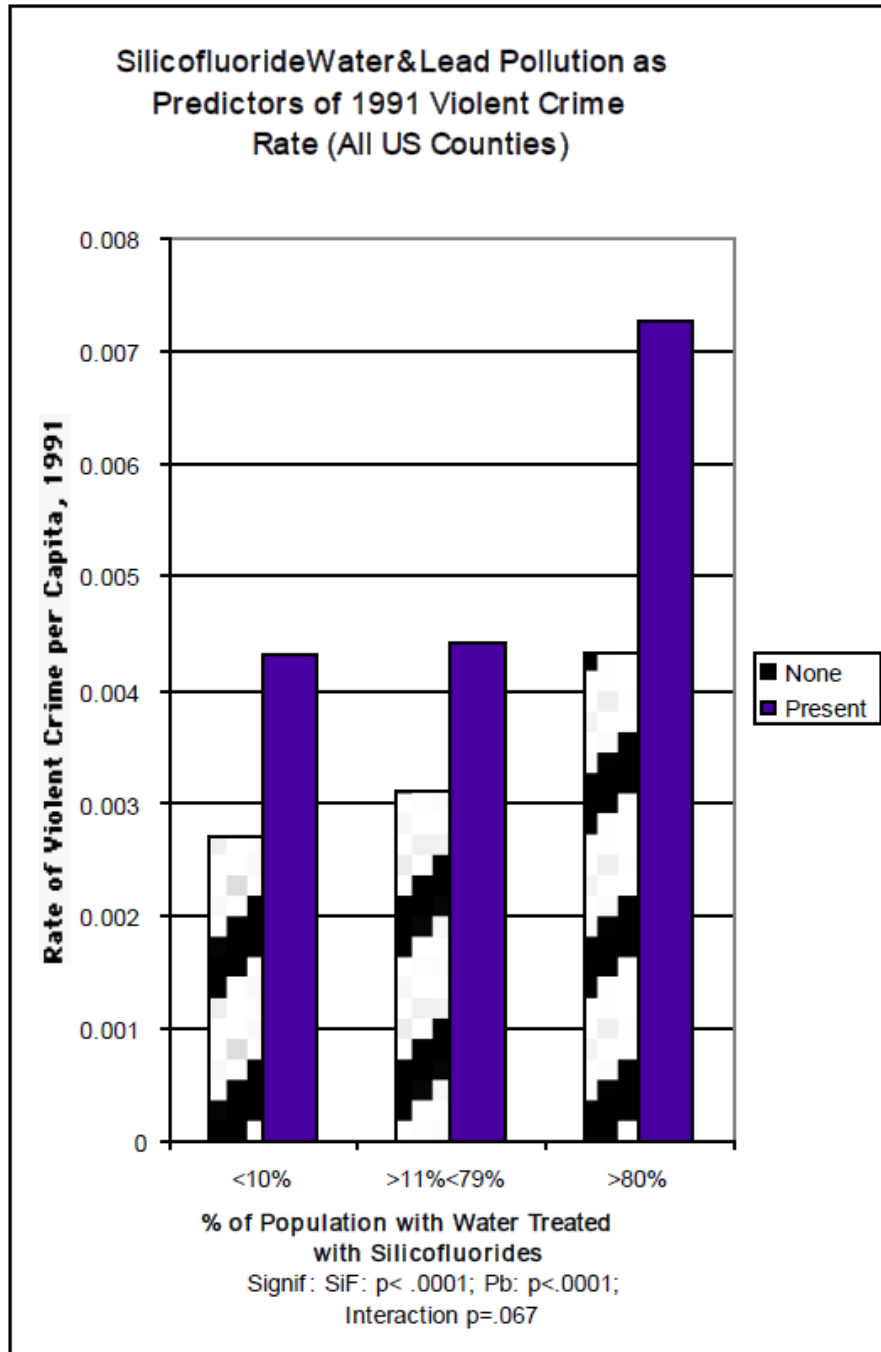
solid bars = present; diagonal stripes = absent.

Source: Roger D. Masters, "Biology and Politics: Linking Nature and Nurture,"

*Annual Review of Political Science* 4 (2001), 345-369, Figure 4a.



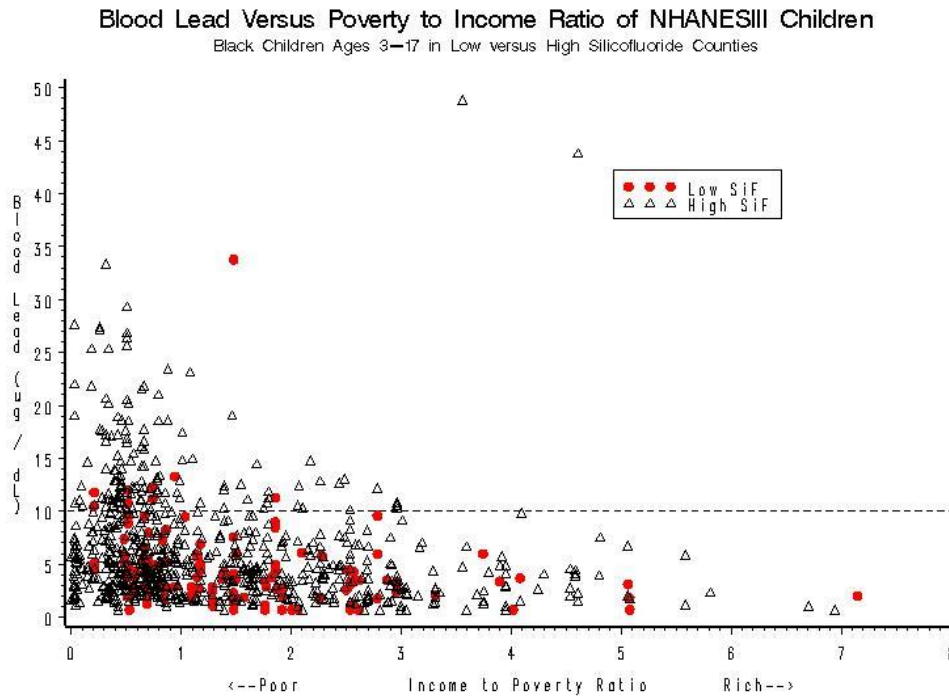
Figure 2b



Lead pollution: solid bars. Source: Roger D. Masters, "Biology and Politics: Linking Nature and Nurture," *Annual Review of Political Science* 4 (2001), 345-369, Figure



**Figure 3a**



	Number Tested	VBPb>10µg/dL	Odds Ratio	Risk Ratio
Low SiF	127	10	.079	232/79 =
High SiF	612	142	.232	2.9

Note that among Blacks in NHANES III sample, blood lead levels over 10µg/dL are substantially more frequent than among whites (Fig. 3b below). Almost all Blacks with high blood lead (including the 2 individuals with average wealth) were in counties with high exposure to silicofluoride treated water. With the exception of 2 individuals of average wealth who were exposed to silicofluorides, those Blacks with high blood lead tended to be poor (all living where the poverty-income ratio =/<3 and almost all =/<2). That is, race, poverty, and exposure to silicofluorides are associated with higher risk of dangerous lead levels (as found in other samples).

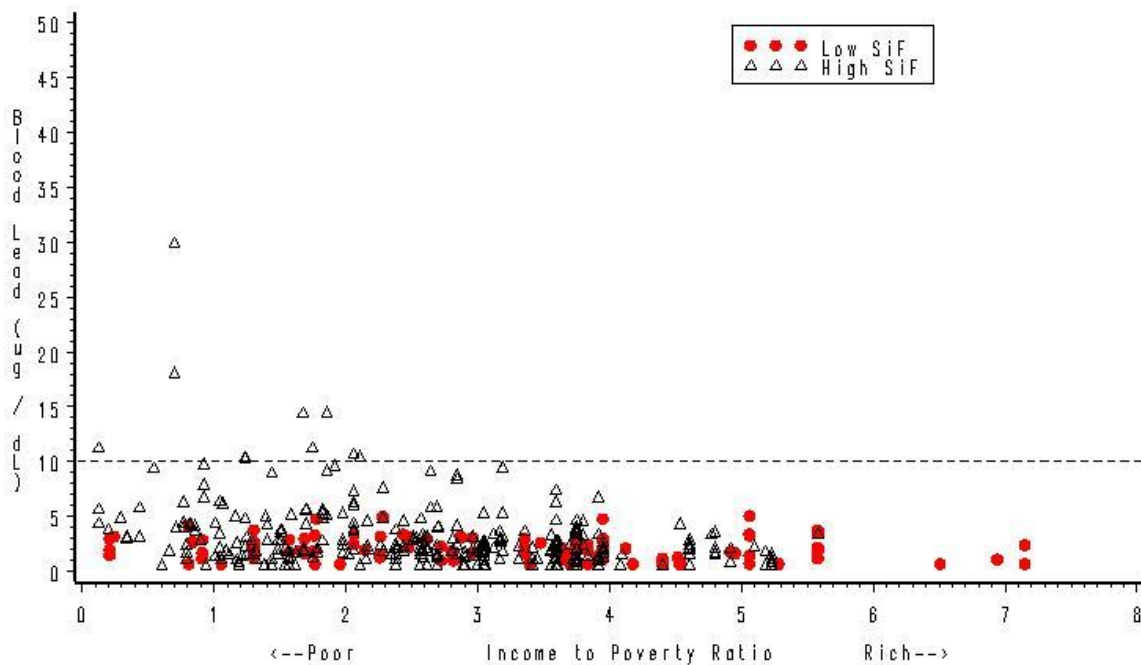
Source: Myron J. Coplan, et al., “Confirmation of and Explanation for Elevated Blood Lead and other disorders in children exposed to water disinfection and fluoridation chemicals,” *Neurotoxicology* 28 (2007), 1032-1042



**Figure 3b**

**Blood Lead Versus Poverty to Income Ratio of NHANESIII Children**

White Children Ages 3–17 in Low versus High Silicofluoride Counties



Source: Third National Health and Nutrition Evaluation Survey, CDC Fluoridation Census

	Number Tested	VBPb>10µg/dL	Odds Ratio	Risk Ratio
Low SiF	110	0	.00	.032/.00 =
High SiF	310	10	.032	infinite

Note that ALL White children in NHANES III sample who had blood lead over 10µg/dL lived in counties that are relatively poor (income/poverty ratio =< 2) and lived in counties with a high exposure to silicofluoride treated water.

Source: Myron J. Coplan, et al., “Confirmation of and Explanation for Elevated Blood Lead and other disorders in children exposed to water disinfection and fluoridation chemicals,” *Neurotoxicology* 28 (2007), 1032-1042.



**Table I\***

**Maas 2006 Water Lead Data Illustrating Enhanced Brass Corrosion By Combinations of Water Fluoridation and Disinfection Agents**

Agent <sup>a</sup> Combinations	Water Lead (ppb) Found After Overnight Dwell <sup>b</sup>			
	<u>During 6 weeks of Flow-through Exposure</u>			
	18 Sample	6 Samples		
	<u>Grand Mean Last 2 weeks Peak Value Effect of F agent</u>			
(a) CA + FSA	60	39	300	
(b) CA, extra NH <sub>3</sub> + FSA	61	98	150	b/c 2.1, 2.8, 3.0
(c) CA, extra NH <sub>3</sub>	29	35	50	
(d) CA, extra NH <sub>3</sub> + NaF	36	51	100	d/c 1.2, 1.5, 2.0
(e) CL + FSA	202	45	1,000	e/g 1.8, 5.3
(f) CL + NaF	151	107	210	f/g 1.3 1.2 1.1
(g) CL alone	115	88	190	

Notes: (a) Agents added as 2 ppm: CA=chloramine; CL=chlorine; FSA=fluosilicic acid; NH<sub>3</sub>=ammonia in solution; NaF=sodium fluoride in solution; pH held at 7.2-7.5

(b) Three samples taken per week for six weeks

**Note that combining chloramine disinfection with fluorosilicic acid water treatment (“FSA”), whether or not with extra ammonia, roughly doubles lead leaching from brass. Compared to choramine, chlorine greatly increases lead leaching from brass, but fluorosilicic acid also seriously increases lead leaching associated with chlorine.**

\*Source: Richard Maas et al., “Effects of fluoridation and disinfection agent combinations on lead leaching from leaded brass parts, *Neurotoxicology* 28 (2007),



## Letter to US FDA re: Water fluoridation and lead

Dr Richard Sauerheber  
Palomar College  
San Marcos, CA 92069

June 20, 2016

U.S. Food and Drug Administration (FDA)  
Center for Drug Evaluation and Research  
Rockville, MD 20857

Dear FDA reviewers of petition FDA2007-P-0346

This letter further clarifies previous information sent to the FDA on the issue of water fluoridation and lead, Pb, contamination. The private organization the National Sanitation Foundation has now released its 2015 updated version of regulations on the addition of chemicals into public drinking water supplies in the U.S. The document states that no additive can be added into public water to a final diluted level in the product water in excess of 10% of the EPA allowed MCL for that substance. (An exception however has long been made for fluoride, as an oral ingestible dental prophylactic, since the recommended use level remains 1 ppm which is 25% of the EPA MCL for fluoride of 4 ppm).

There is a new problem now that has surfaced and is related to a highly publicized issue in Flint, MI where blood levels of lead in children have become elevated due to very high levels of lead-leeching chloramines in the Flint River. The NSF ANSI 60 regulations clearly state that water additives cannot cause lead ion in the final product water to be above 10% of its EPA MCL of 15 ppb. Of course fluoridation of Flint in the above conditions would be in violation of NSF regulations. But just as important, this proves, unbeknownst to the NSF and the EPA, that it is not permissible to add fluosilicic acid to most of the water supplies in the U.S. This is because lead contamination is added, when fluosilicic acid is infused to adjust fluoride to 1 ppm, at typically 1.2 ppb additional lead (see data by Mullenix submitted to the FDA June 5, 2014). So any water supply that already has 0.3 ppb lead (and most do in the U.S.) cannot be allowed to fluoridate. The presence of 0.3 ppb plus the added 1.2 ppb total 1.5 ppb, which is 10% of the EPA MCL for lead.

Conclusion: Water districts and public health officials, the EPA, the FDA, etc. need to be alerted to the fact that any water supply with over 0.3 ppb lead cannot be fluoridated under NSF ANSI 60 2015 guidelines with fluosilicic acid materials. This is an intrinsic problem with using fluosilicic acid and, as previously mentioned, is in addition to the lead-leeching caused by the silicic acid byproduct that fluoridation also produces (see June 5, 2014 letter). The FDA could help us with this notification, that certification by NSF must be withdrawn for fluosilicic acid used for fluoridation, or that certification must be accompanied with statements that any water supply with lead above 0.3 ppb cannot use fluosilicic acid materials for fluoridation. The NSF now is playing the role that only the





FDA is supposed to have, where NSF is certifying batches of fluoride compounds intended for ingestion, with the assumption the added fluoride ion is an oral ingestible dental prophylactic, all without FDA involvement or permission.

Thank you.

Richard Sauerheber, Ph.D. Chemistry

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## Letter to NHMRC re Excess lead in US & Australian fluoridated water

*By John Teagle*

To: Ms Cathy Connor

National Health and Medical Research Council (NHMRC)

Dear Cathy

In previous correspondence sent to your office I provided an alarming article concerning the amount of lead in children's bloodstreams.

A copy of this double blind research is again enclosed for your reference and it can be seen that the main reason for the unacceptable blood levels is due to the ingestion of artificial fluoride compounds such as hydrofluosilicic acid.

In particular the following comments are considered relevant here:

*So now we have logically determined the source of the mercury exposures but where does the infant get the lead? This is where it gets even more complicated.*

*There is a manmade molecule called hydrofluosilicic acid that is derived from the manufacturer of phosphate fertilizer or from the mining operations that extract nuclear materials from high phosphate rock. It consists of a core of sand (silica) populated with 6 molecules of fluoride and a water molecule. This forms a unique electrical attraction to lead. In fact it is so unique there is a patent in the US office for this product to extract lead from brass.*

*In 1999 Roger Masters and Myron Coplan analyzed raw data collected by NHANES children's lead study.<sup>6</sup> For many years NHANES has asked every physician who sees a young child to collect a little bit of blood for them to measure the blood lead levels. As a result there are computers full of numbers but up until that point no one had thought to see if there was a connection between blood lead and hydrofluosilicic acid. Dr. Masters*



*and Mr. Coplan took the data from 280,000 children and compared the blood lead levels and other known factors for lead exposure and included whether or not the public drinking water was supplemented with hydrofluosilicic acid. To everyone's amazement except Mr. Coplan's the correlation was startling. Children who were exposed through their drinking water to hydrofluosilicic acid had twice the blood lead levels as those children who were not exposed.*

I now draw your attention to a Macquarie university study currently being undertaken by Paul Harvey.

While this study is ongoing, sample testing of tap water has revealed excessive amounts of lead contained in the fluoridated water – see “Researcher to map lead contamination in New South Wales’ drinking water” at <http://www.mq.edu.au/newsroom/2014/10/24/researcher-to-map-lead-contamination-in-new-south-wales-drinking-water/>

The 24 October 2014 article by Harvey maintains that some testing has revealed lead concentrates in the tap water that exceed the purported Australian Drinking Water Guidelines safe levels by twenty times.

According to this article, tap water has never been tested in this country for safety even though fluoride compounds have been added to Council reticulated water supplies for more than sixty years in some parts of Australia.

Please advise whether your office is aware of this current study and whether you are aware of any testing of tap water conducted by State and Territory health departments or Councils that fluoridate.

As you know, the fluorine ion contained in artificial fluoride compounds is bound with heavy metals such as lead, arsenic, cadmium, mercury, aluminium and these poisons are ingested by consumers. This matter is discussed in the section 8.1 of the enclosed Code of Practice.

Furthermore, the artificial fluoride compounds are highly corrosive and this would result in an increase in the lead content in tap water. For example hydrofluorosilicic acid used in fluoridation is extremely dangerous – see section 5 of the enclosed Code of Practice.

The lead is contained in copper piping and the fluoridated water is highly acidic, resulting in the lead being leached into the water.

The enclosed Code of Practice also legislates that ***8.1.1 Any impurities in the fluoridating agent shall not cause health problems for consumers or result in non-compliance with the Australian Drinking Water Guidelines. Physical characteristics and variations in strength should not significantly increase***



***risk of reliably maintaining the required fluoride concentration in the treated water.***

The NHMRC is responsible for the compilation and publishing the Australian Drinking Water Guidelines, consequently what controls does the NHMRC have in place, ensuring water authorities are complying with the mandatory requirements of section 8.1.1.

This would necessarily require the testing of consumer's tap water in their residences for levels of contaminants such as lead, arsenic, etc. and whether these impurities are always in accord with the ADWG.

Furthermore, to ensure that the lead levels is less than the purported safe level stated in the ADWG, it is necessary to test consumer's blood.

Yours sincerely

John Teagle

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## Lead in Literature: The World Below the Brine

*By Walt Whitman, first published in 1860, and this final version in the 1871 edition of Leaves of Grass. From:*  
<http://www.whitmanarchive.org/published/LG/1881/poems/113>

The world below the brine,  
Forests at the bottom of the sea, the branches and leaves,  
Sea-lettuce, vast lichens, strange flowers and seeds, the thick tangle,  
    openings, and pink turf,  
Different colors, pale gray and green, purple, white, and gold, the  
    play of light through the water,  
Dumb swimmers there among the rocks, coral, gluten, grass, rushes,  
    and the aliment of the swimmers,  
Sluggish existences grazing there suspended, or slowly crawling  
    close to the bottom,  
The sperm-whale at the surface blowing air and spray, or disporting  
    with his flukes,  
The leaden-eyed shark, the walrus, the turtle, the hairy sea-leopard,  
    and the sting-ray,  
Passions there, wars, pursuits, tribes, sight in those ocean-depths,  
    breathing that thick-breathing air, as so many do,  
The change thence to the sight here, and to the subtle air breathed  
    by beings like us who walk this sphere,  
The change onward from ours to that of beings who walk other  
    spheres.



2015 VAP Entry. Title: Fish. Lead-safety Message: Fish need clean water and clean seaweed to be happy.  
Materials: Watercolour pencils. Artist: Jia Yi Chen. Age 9. <http://volcanoartprize.com/portfolio-item/fish/>



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