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# LEAD Action NEWS

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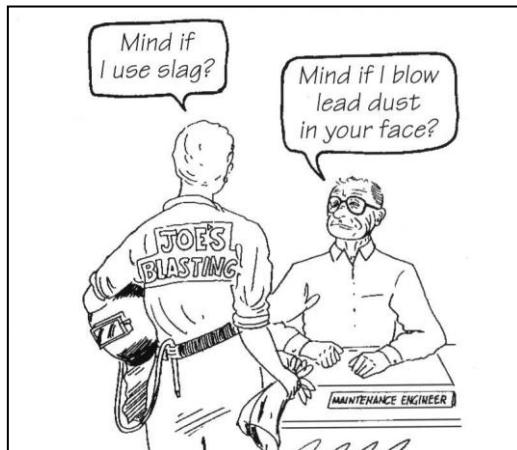
## Lead Poisoned People are Everywhere

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### Editorial

Lead poisoned people really are everywhere. In this issue we look at just some of their circumstances, be they children in India, or children lead poisoned in their own homes in Australia - in the city or in mining towns, or be they adults - from police firearms instructors to miners to paint blasting contractors. [Thanks to Tim Gooden of Blastmaster for permission to reproduce the following cartoon.]



### Disclaimer:

The views expressed in LEAD Action News are not necessarily those of The LEAD Group Inc. LEAD Action News does not purport to express NSW Government views or policy on lead.

### Reprinting articles:

We encourage further publicity for our articles, but it is essential that you contact the editor before reprinting, especially since we may not own copyright. Phone Elizabeth O'Brien on (02) 9716 0014.

### Acknowledgments:

Many thanks to Margaret Johnston and Charis Picardo for all their excellent typing. And thanks to those wonderful people who wrote articles for this newsletter and who have been so patient:- especially Mike Van Alphen, Andrew Gray, Theresa Gordon and Jenny Rowbotham. Thanks to the people who are constantly on the lookout for things to send in:- Noela Whitton, Andrew Gray, Brian Gulson, Fred Salome, Carol Bodle, etc.

# Lead Poisoning in India

By Mike van Alphen, Lead Sense, PO Box 3421, Rundle Mall South Australia 5000

The recent conference [8<sup>th</sup> - 10<sup>th</sup> February 1999] on lead poisoning in Bangalore India, run by The George Foundation highlighted the results of a major blood lead survey of Indian children. Called "Project Lead Free" the study involved the collection of approximately 22,000 samples from children, pregnant women and workers in the battery and paint industries. While the investigations took place variously from Bangalore, Delhi, Mumbai, Calcutta, Chennai, Vellore and Hyderabad the overwhelming number of samples were from the Bangalore area.

Preliminary compilations of results for children under 12 years based on just PbB (lead in blood) data indicated that PbB was greater than 10 µg/dL for 51.4 % of children in India. The statistics may well be more telling for children less than 5 years old for example but this data was not available.

The range of Pb (lead) exposure sources in India is extensive and as yet not well understood. A great deal of concern was placed on the effect of urban population growth, increased vehicle ownership and the number of smokey two-stroke motor vehicles using leaded petrol. During the conference a plan was announced to phase out Pb petrol from March 2000. *[Ed. Note: this is well ahead of Australia's planned phase-out date of December 2003 for leaded petrol.]*

Key suspected population-wide sources of Pb were considered to be water supplies, and tinned eating utensils. The common practice of using a Pb-Sn (lead-tin) alloy to coat the inside of copper eating utensils is considered to have potentially widespread impacts. Vessels and pipeworks for drinking water are also of concern but there is limited information. Cows foraging on roadsides were considered to pose some risk of passing on Pb in milk but more information specifically connecting environmental Pb levels with Pb in cows milk appeared to be required. This was an issue of some sensitivity. More generally the potential for passing Pb into food through containers such as soldered cans were considered but little could be said of the extent of this exposure. Discussions of soldered tins perhaps represent more recent western experience, however perhaps of more relevance to India could

be the practice of wrapping foodstuffs in newspaper. Pb is still present in both printing inks and 'typemetals' in India. Given the common processes of grinding spices and grains - there are numerous opportunities for the incorporation of Pb in foods due to the wear of machinery bushings, brass fittings and tinned metal surfaces. The manufacture of 'hooch' using car radiators for condensing alcohol, is just one example of a widespread problem with unregulated manufacturing in India. The degree to which Pb was recycled in the community was also of concern. For example vehicle sump oil containing Pb used for other purposes such as starting cooking fires.

There are more idiosyncratic Pb poisoning sources but Pb-based eye - liner for example and 'folk medicines' are still widespread. The state of India's consumer protection laws, from the absence of implemented poisons regulations to the absence of appropriate labelling and descriptions of goods are in need of attention. One tragic case of Pb poisoning included the adulteration of ice-cream with white lead. Lead has been used as an adulterant or weighting agent in foods and other goods.

Of major concern are the cottage industry hot-spots for example silversmiths, print shops, brass works, small Pb battery assembly workshops, radiator repair workshops, and other such workshops in home settings or where young children have ready access.

Paint Pb exposure was one area that was least well understood. The extent of paint in urban and rural settings was likely to vary greatly. However some indication was given that 10% of Pb consumed in India was used in paint. A quick post-conference survey by the writer based on over the counter paints from Bangalore and Chennai revealed the ready availability of Pb chromate paints. Of 24 paints purchased, 13 had Pb concentrations in excess of 1% by weight and 5 were > 10% Pb. None of these paints were labelled as to appropriate use. This finding is just indicative of the many problems with consumer protection in India. These paints were also analysed courtesy of JBS Environmental Services

and Technologies of Sydney and the quality of data from the portable XRF was demonstrated to be very respectable.

In terms of national child Pb exposure reduction strategies, priorities are still being evaluated and more information is required. In terms of cases of advanced clinical Pb poisoning and death; 'hot-spot' investigations and intervention in cottage industries are likely to return good results. Removing Pb from petrol however was the easiest step to take in lowering community PbB. Much more remains to be done.

**Thought seed: there should be an Australian workshop to follow up on the Indian Lead Conference. Who would like to pay for it and run it? The conference papers for The George Foundation's Indian Lead Conference will be published in July 1999 at [www.leadpoison.org](http://www.leadpoison.org). For more information about The George Foundation see [www.tgf.world.org](http://www.tgf.world.org)**

## Proposed Diesel Tax Cut - Impacts on Waste Oil Market

*Extracts of The Parliament of the Commonwealth of Australia, Inquiry into the GST and a New Tax System - Report of the Senate Environment, Communications, Information Technology and the Arts References Committee, March 1999.*

### EXECUTIVE SUMMARY (Page ix)

#### The Environment

The Committee believe that the Government's proposed new tax system would take Australia backwards in its impact on the environment, and represents the loss of a rare opportunity to change the tax system and implement reforms that would result in greater ecological sustainability. In the face of Australia's failure to implement ecological tax reform to date, and the far-reaching implications of global ecological threats, the need for tax reform which has enhanced environmental objectives has never been greater.

Ecological tax reform has been embraced in several OECD countries but if the new tax package were to proceed, Australia would be the only country in recent times to introduce a net reduction in taxes and charges for fuel and energy.

The Committee heard compelling evidence that the proposal would deliver higher levels of pollution and waste, and act to discourage the growth of more sustainable practices, including:

- a significant increase in greenhouse gas emissions;
- increases in some major air pollutants, especially in urban areas, with associated health costs;
- loss of market share for solar energy products

and services in favour of unsustainable energy sources;

- increased demand for road freight at the expense of rail freight, with significant increases in greenhouse gas emissions and other pollutants as a result;
- the collapse of the gaseous fuels industry;
- a general increase in business transport and a shift to diesel within that away from petrol;
- increased demand for private motor vehicle use at the expense of public transport; and
- an overall increase in the energy and resource intensity of the Australian economy.

Environment Australia told the Committee that the government's environmental objectives were not changed by the tax reform proposals. Environment Australia argued that the proposed new tax system would improve the robustness of economic sectors and so enhance their capacity to manage any economic adjustment in response to environmental policies. The Committee rejects this view.

There was no evidence of consultation between Environment Australia and Treasury on the subject of the tax package. The Committee found it extraordinary that proposals with such profound implications for the environment should be developed without reference to the relevant Commonwealth department, and appears to indicate how little consideration has been given to environmental concerns.

#### Reduction in Diesel Fuel Excise (Page x)

The tax package would provide a substantial incentive to people to use more environmentally polluting modes of transport, the opposite direction from the one in which transport

policy should be moving.

International studies clearly demonstrate that taxes of fuel should be increased in order to internalise the environmental costs produced by the transport industry and that the biggest increase ought to apply to diesel fuel because, at least in urban areas, it has the most damaging effect on human health. The tax package, by reducing the price of the one fuel that the scientific consensus suggests we should be doing most to discourage, does the opposite.

The diesel currently imported to Australia has a high level of sulphur and results in a much higher level of particle emissions than gaseous fuels. According to National Environment Protection Council estimates, 1,062 people die each year from particulate exposure. The Committee heard conservative estimates that at least 65 more people would die each year in Australia as a result of the increase in urban air pollution and traffic accidents if the GST package goes ahead as proposed. These would be predominantly young children and the elderly.

Medical evidence linking particulates from diesel engines with conditions like asthma are translating into social costs which some reports rate as high as \$2 billion per year.

The Committee found the evidence presented on the health impacts of diesel fuels profoundly disturbing. There is a significant problem to be addressed in relation to the current level of diesel use, let alone the likely further impacts which would follow from a lowering of the diesel excise and the resulting disincentive to convert to other fuels.

### **Road and Rail Transport** (Page xi)

Diesel use in rail transport is at least three times more efficient per tonne kilometre than in road transport... The Government's proposals would:

- shift ten per cent of inter-stage freight from rail to road;
- (Page xii) increase heavy vehicle traffic and increase the potential for truck-related crashes;
- increase fuel usage and greenhouse gas emissions; and
- increase road congestion.

### **Public Transport**

There was general agreement in evidence to the Committee that the effect of the proposed tax package would be to increase private vehicle

use in urban areas at the expense of public transport. All the work that has been put in over the past 10, 15 or 20 years to move people away from the private motor car would be eroded by the Government's proposals.

(Page xiii) Australia already has very low public transport patronage, only one third that of European cities and one of the lowest in the OECD. Concessional tax treatment of public transport is common public policy in European VAT tax regimes, some countries providing GST-free public transport.

### **Renewable Energy**

The reduction in diesel fuel excise would bankrupt this industry and completely undermine the positive environmental impacts of the industry. Approximately 540 million litres of new oil was sold in 1996, of which about 149 million litres, or 28 per cent, was collected for recycling. The evidence also raised serious questions as to what is being done with the 390 million litres of waste oil that is currently not being recycled. Oil that is not recycled appropriately will find its way into the soil, the water table and eventually waterways, damaging terrestrial and marine vegetation and wildlife.

### **Particulates – 'smoke'** (Page 4)

Diesel particulates are toxic and extremely detrimental to health. In August 1998 the California Air Resources Board (ARB) approved a proposal to list particulate emissions from diesel-fuelled engines as a Toxic Air Contaminant (TAC). Overall, more than 40 substances in diesel are listed as TACs by the ARB and by the US Environmental Protection Authority as hazardous air pollutants

(Page 5) Long-term exposure to diesel has been associated with a 40 per cent increase in the relative risk of lung cancer. In addition, there is a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed.

The burning of waste sump oil as a cheap fuel produces harmful emissions of lead, cadmium, chromium, zinc, sulphur, nitrogen, hydrocarbons and chlorinated hydrocarbons.

### **Environmental Standards for Vehicles** (Page 7)

Australian emission standards for diesel vehicles are extremely lenient. Most four-wheel drive diesel vehicles permitted under Australian standards would not be allowed on the road in the US, Japan or Europe.

## **Recycled Oil (Page 48)**

The Committee heard compelling evidence from oil recyclers suggesting that the reduction in diesel fuel excise would bankrupt the sector and completely undermine the positive environmental impact of the industry.

Mr Fred Wren, the Managing Director of Wren Oil in Western Australia, told the Committee that approximately 540 million litres of new oil was sold in 1996, of which about 149 million litres, or 28 per cent, was collected for recycling.

In broad terms, oil recyclers collect waste oil from all sources, clean or re-refine it and then, place the product back into the marketplace. The main product is diesel extender. With excise exemptions, re-refined oil can be sold competitively for blending with diesel to run remote power stations. The removal of diesel excise without compensation for oil recyclers would make new diesel cheaper and the existing market would be lost.

Mr David Braham, General Manager of Mulhern Waste Oil, told the Committee that his company collects 80-85 per cent of waste oil in the Adelaide area, and a higher proportion of waste oil from outlying areas of South Australia and the Northern Territory. He said that with the removal of diesel fuel excise his small family business would be unable to compete with the major petroleum companies.

(Page 49) "The cost of production is approximately 25 cents a litre and that will be below the selling price of diesel by the major petroleum companies. They will completely undercut us, so we are dead in the water there – unless the excise is left on diesel after the GST is introduced."

In Western Australia, Wren Oil collects about 12 million litres of waste oil per annum. Mr Fred Wren, Managing Director, told the Committee that he began collecting sump oil in 1981 and learned about the harmful chemicals it contained:

"We collect sump oil from every type of transport – from all mining, shipping, industrial and domestic sources that one can think of. Sump oils contain lead and other heavy metals. Most of the waste oil in Australia is burned untreated as a cheap fuel oil with the emissions going through the air we breathe... The place is still full of waste oil. Where do we put it?"

Mr Braham supplied information to the Committee which indicated that untreated waste sump oils contain about ten per cent of additives, including toxic substances such as zinc,

phosphorus, barium, calcium, magnesium, silicon and sulphur. Other hazardous contaminants from engines include heavy metals such as the waste oil produces harmful emissions: more than fifty per cent of the lead, cadmium, chromium and zinc is emitted to the air, as well as oxides of sulphur and nitrogen and hydrocarbons.

Waste oil is not classified as a hazardous liquid but it contains hazardous materials which may be carcinogenic, and which are certainly harmful to the environment when disposed of improperly.

Mr Wren relayed the events of a 1992 meeting with the Australian Institute of Petroleum where an industry spokesman said that the oil industry's first preference was to dump waste oil in roads for dust control or in pits out in the bush.

"I told them the meeting that Wren Oil recycled small amounts of hydraulic oil. They said, 'Keep it small'. They would not like to see lubricants as the cream and when finished it should be burnt. The diesel excise exemption works very well at no cost of the expenditure side of the budget: it is just an invisible cost to the revenue side of the budget as foregone excise. The GST tax reforms that remove the diesel excise will kill off this market completely. What do we do with 12 million litres of waste oil? Senators, tell us where to put it."

(Page 50) The Committee was disturbed by the evidence it received in relation to waste oil and believes that there are profound implications for the environment if the tax package is implemented as proposed. Quite apart from the economic effect on oil recycling businesses, and the associated job losses, there would be a massive increase in the volume of waste oil to be disposed of. The Committee considers that waste oil should be regarded as a retrievable energy source and that its processing should attract appropriate government support.

The evidence also raised serious questions as to what is being done with the 390 million litres of waste oil that is currently *not* being recycled. Oil that is not recycled appropriately will find its way into the soil, the water table and eventually waterways, damaging terrestrial and marine vegetation and wildlife. The long-term cost of our failure to address this issue will be very significant indeed, in both economic and environmental terms; the two cannot be separated.

# Police Association Prosecutes NSW Police over Lead

*The following is the Editorial from POLICE NEWS, JANUARY, 1999, Page 3. Reprinted with kind permission.*

## **UNSAFE WORK PRACTICE AND LEAD**

The emphasis on Occupational Health and Safety is increasing daily with the increasing costs of death and injury in the workplace. The New South Wales Government has initiated processes to have the Occupational Health and Safety Act No. 20 of 1983 redrafted. The redraft of the legislation is to be written in plain English to make it more user friendly so that everyone can understand their roles and responsibilities. The Police Association, in conjunction with the Labor Council of new South Wales, is involved in this process. John Cumberland, our Occupational Health and Safety Coordinator, was invited to represent the Labor Council and place a submission before the Parliamentary Subcommittee.

The Act obliges employers to provide a safe system of work. Unfortunately some of the steps taken by corporations and Government bodies fail to comply with this requirement. The recent injuries to a number of our members as a result of overexposure to lead is an example of this.

Lead is an industrial toxicant with a long history of use in the workplace. The negative health effects it produces means it requires control. Boston University's Department of Public health suggests that lead poisoning of employees at weapons ranges may be more significant than formerly realised.

Inhalation of airborne lead, or ingestion, at least at high doses, can cause nerve, blood or kidney damage. Symptoms include general fatigue, irritability, concentration difficulties, tremor, headaches, abdominal pain, vomiting, weight loss or constipation.

Members of the New South Wales Police Association have been subjected to an intense conversion-training program for the issue of new firearms. Concerns have been raised over the increased numbers of rounds fired which have led to a higher exposure to the hazardous by-products of the firearm or ammunition. No ongoing monitoring of ranges or trainers has occurred for a number of years.

During testing of weapons trainers, a higher concentration of inorganic lead was found in some blood samples. Students undergoing training and ranges were subsequently tested. The students returned elevated blood lead concentrations and some readings from ranges were quite alarming and well over the National Standards for airborne contaminants. Three ranges have been closed due to the high concentration of airborne lead particles. It is assumed at this stage, that the airflow patterns and the ventilation's inability to remove the lead hazard at these ranges caused the concentration levels.

The Lead Reference Centre and Lead Advisory Service have provided valuable assistance. Initially, in September [1998] our knowledge of the effects and health risks of lead was minimal. These agencies supplied us with the initial documentation and contacts enabling our Occupational Health and Safety Coordinator to better comprehend the problem.

Unfortunately the lack of rudimentary knowledge of the effects of lead extends to the medical field. Members affected by lead weren't able to obtain relevant information from their local general practitioner and even received differing viewpoints from those within the Police Service.

At this stage arrangements are under way to test all weapons trainers, both full and part-time, all ranges, as well as students who have undergone training at specific ranges. The testing of homes of members with elevated blood levels have also been conducted to ensure no secondary contamination of their families.

Meetings have been held with affected members and their families at the instigation of the Police Association. These meetings have been held with Local Area Health Services, the Lead Reference Centre and the Lead Advisory Service and have proved an invaluable tool for the dissemination of information to our members and their families.

A timely education meeting for affiliates of the Labor Council was held at Newcastle at the time of the media release on our concerns about lead. As a result of that meeting we have fielded numerous questions from associate unions and other policing unions nationwide seeking further

advice.

It is our belief that the dangers associated with lead have been known by the Police Service since the early 1980s. The Police Association is therefore in the process of launching prosecution against the Police Service for unsafe workplace and work practices with regard to this issue. This task has been assisted with the guidance and information provided by all the above agencies.

Under the Occupational Health and Safety Act, the Police Service should ensure a safe workplace for all employees. While we know that policing is often unpredictable and

contains hidden dangers, employees should be entitled to a workplace that is free from risks in their day to day processes and procedures. For too long police have been restricted by inadequate budgeting forcing them to make do with inadequate resources and training.

The Occupational Health and Safety Act is very specific. Not only do we as an employee representative organisation and our members have to adhere to this Act, so too does the Police Service.

It will be our intention to make sure they do so.

## **“Lead Changed My Children” – DMSA Case Study**

*By Ann Marie Vella, edited by Anna Priest*

### **Lead-induced learning and behavioural problems**

In early 1994 we found the house of our dreams, a charming old Victorian terrace in need of renovation. Little did we realise at the time what a profound effect living in this house was to have on our children. Within twelve months of moving into this house, our three and a half year old son was admitted to hospital with an extremely dangerous level of lead in his body. Our daughter Cassandra, two years older than Dylan, was also affected by lead poisoning, but not to such a great degree.

During the early months of 1995 we began to remove some of the old paint from the inside and outside walls of the house. This was a job that no previous owners had ever attempted, so we were removing paint that was up to one hundred years old. Shortly after work commenced on the house we began having major problems with Dylan. He became emotionally volatile, and would cry without any obvious reason. He fought constantly, hitting and kicking me and his sister, and playmates.

Before very long he became completely out of control. We were bewildered by this behaviour, which was quite out of character for the Dylan we knew and loved. He was also not speaking well for a child his age, and became very slow at meeting normal developmental milestones. A parent at my daughter's school suggested I have him tested for levels of heavy metals. Our local doctor had a heavy metal saliva test kit, which showed Dylan to be positive for lead. A blood test followed, and the doctor said the results would be back in a week's time. Three days later he rang advising me to get Dylan to

hospital immediately. Dylan's lead level was 3.12 micromoles per litre of blood, whereas the recommended safe level for lead in children his age is 0.48 micromoles per litre ( $\mu\text{mol/L}$ ). So Dylan was almost seven times over the safe level!

We took Dylan to the Children's Hospital at Camperdown in Sydney where he was admitted for one week. During this time he received five days of intravenous EDTA (a heavy metal chelating agent specifically used for lead), to draw the metal out of his bloodstream. The entire week was very traumatic as Dylan had to have general anaesthetic just to get the intravenous line in so that the drug therapy could be given. During this time he developed a severe urinary tract infection which required further investigation on discharge from hospital, to ascertain whether any kidney damage had occurred.

After this treatment, Dylan's lead level came down to 1.3  $\mu\text{mol/L}$ , but at the next blood test six weeks later it had rebounded to 2.01  $\mu\text{mol/L}$ . This occurred because Dylan had a large amount of lead deposited in his bones and other cells, and not just in circulating blood. When the lead was removed from his blood by the drug therapy, lead deposited in other areas was mobilised back into his bloodstream.

My husband and I were still very concerned because by now we were finding out more about the dangers of lead, especially in young children. We had discovered the existence of The LEAD Group, who run the Lead Advisory Service (NSW), and who were very helpful with guidance and support. We went back to see the doctor who had treated Dylan in hospital. He was not overly concerned about these rebound levels and informed us that the lead would slowly come



down to acceptable levels and that in his opinion no further drug therapy was necessary.

Over the next six months the children and I lived with my mother, while my husband and workmen removed all lead paint from our house using special lead containment methods advised by The LEAD Group. We also had to attend to the garden because of lead contamination throughout the area. All this at a cost of around \$30,000.

In August 1996 when Dylan was four, a x-ray was taken of his legs, where distinct horizontal lines above and below the knee joints could be seen. This was explained as being deposits of lead in his bones. The hospital x-ray report reads: "Clinical history: lead toxicity. Examination of both knees: There are dense metaphysial lines affecting the lower femora and the upper tibia, especially laterally in the femora and medially in the tibia. The appearance is consistent with heavy metal ingestion."

During this time Dylan was physically well, but mentally and emotionally he was very much like a child much younger than his four and a half years.

He was still having language and behavioural problems, and was well behind what an average three to four year old should be in some areas of development. He began attending an Early Start Program to assist with language skills. A teacher from the Autistic Association was also seeing him weekly too.

Owing to all the recent upheavals to our family life we consulted a well-known paediatrician several times because of problems with our son's behaviour, hoping he would be able to help us handle the situation in better ways. Perhaps all Dylan's problems may not be due to his dangerous lead levels, but it most certainly exacerbated his problems.

Blood tests every three months showed that the two children's lead levels were coming down very slowly. My husband and I were concerned that long term damage may be occurring because of the prolonged high levels over time. We consulted two more paediatricians who suggested increasing their iron intake which would decrease the absorption of lead. We were certain that the children were not absorbing any more lead from the home environment, and that any damage was being created by their already high levels.

Quite by chance we were given the name of Dr V, a medical practitioner who specialises in environmental medicine. We have been seeing this doctor for about a year now and both children

have improved and are doing very well, considering what we have all been through.

The children are now being treated with a combination of nutritional supplements and modified doses of DMSA, an oral heavy metal chelating agent, which is drawing the lead out of their bodies and allowing it to be excreted. They are now on their fourth course of DMSA and we are hopeful that all the lead will have been excreted from their bodies by the end of this course. The supplements are designed to reverse any damage that has been done to their systems, but at this stage we just don't know whether there will be any long term effects from their exposure to lead.

Dylan has greatly improved over the past twelve months. At five and a half years old he is now speaking well and began attending kindergarten this year. Although he is doing quite well at school he still requires additional assistance in the form of a remedial teacher 6 hours per week.

There are times when we reflect back on all the traumas over the past two and a half years and regret buying this house, but we are hopeful for our family's future and the health and wellbeing of our children.

UPDATE: mid 1997 - Cassandra's levels have come down to 0.48  $\mu\text{mol/L}$ . Dylan is now down to 0.78  $\mu\text{mol/L}$  (and he's now on his 6th course of DMSA). His behaviour is calmer and he is doing well at school.

2ND UPDATE: September 1998 - Dylan's blood lead level has been reduced even further to 0.56  $\mu\text{mol/L}$  and he continues to do well at home and school.

## Hunter LEAD Group Raffle Winners





# “Paint Film Components” – Outline of New Book

*By Mike van Alphen, Lead Sense, PO Box 3421, Rundle Mall South Australia 5000*

Paints have to be weatherproof, physically stable long-lived materials that are resistant to biological, physical and chemical attack. In the past that has often resulted in many familiar, toxic, long-lived chemical products being included in paint formulations. It is also those compounds that are highly colourful that were popular in older paints.

To find that arsenic, asbestos, cadmium, lead, mercury, PCB, and radium among many other compounds and materials have been included in paints should be no great surprise.

Paint Film Components, was published in June 1998 and written to explore the history of paint formulation and those many potentially toxic paint components.

Lead in paint is best known for having caused poisonings but there are instances where arsenic and mercury have caused harm. Many of the other potentially toxic materials in paints are much less well understood in terms of their human health related impacts. This book deals with the ‘long-lived’ components of paint films. While the volatile components of paints are increasing the subject of attention and the impacts of tin, and copper toxicity on marine life are well documented these matters are not dealt with in any detail.

**So how many kilograms of lead is in the paint of your house?**

**Australian houses built in the 1920’s could readily contain 200 to 600 kilograms of lead in that thin coating of paint.**

Cans of white lead paint and white lead pigments were sold by the pound - not by the gallon prior to the 1950’s. The hallmark of a quality paint would have been a paint can so heavy that you wouldn’t want to carry it too far.

Assuming that you have several hundred kilograms of lead on the side of a house how much would have to fall off to raise the soil lead concentration to a significant level. The book shows a number of examples.

Asbestos turns up in many old paint formulations under the guise of a range of synonyms. Short fibre length asbestos was a low-cost waste product from the asbestos fibre industry. A hardy material, cheap and having good properties in providing ‘tooth’ to undercoat layers so that subsequent paint layers would adhere firmly. The toxicity of asbestos fibres and their characteristics when incorporated in paint and subsequently liberated from paint is simply unknown. Asbestos fibres are readily observed in Australian paints but again the liberation and exposure is not well understood. Bridge paint undercoats for example could readily contain 10% asbestos by weight in the dry film. Painters would be the first group to investigate in relation to asbestos. This would be an important study to conduct.

Insect, fungus, mould and bacterial attack of paints has resulted in some of the more curious and toxic additives in paint. Pentachlorophenol, DDT and mercury are some of the materials that turn up as additives for these purposes. Some rare paint formulations are to be expected in industrial buildings and on industrial and scientific equipment.

**Paint Film Components is available for \$15 from:**

Public and Environmental Health Service  
Department of Human Services  
PO BOX 6  
Rundle Mall SA 5000  
phone 08) 82267107

## Reference

van Alphen, Mike (1998) Paint Film Components National Environmental Health Forum Monographs General Series No 2. National Environmental Health Forum.



## **LeadCare Blood Lead Analysis Supplies**

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- case-finding in 'hot-spot' situations
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- the occupational physician
- to backup conventional testing
- in public health surveys

Setup this equipment, run QAQC samples, draw a blood sample analyse it report the results and packup the equipment in 20-25 minutes. Draw blood samples and test additional individuals at around 7-8 minutes each. The lead analysis time for each blood sample is only 3 minutes.



### **LeadCare Description**

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**\*more details from:**

### **Lead Sense**

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email mva@camtech.net.au**

## Letters to The LEAD Group Inc.

**TO:** Elizabeth O'Brien  
Editor, LEAD Action News



Dear Elizabeth,

### **RE: Use Of Paragoethite By Pasmenco**

Thank you for the copy of "*LEAD Action News*" [vol 6 no 3, 1998]. With regard to Pasmenco's treatment of jarosite and paragoethite materials, I note that the article on page 19 of "*LEAD Action News*" indicates that "Pasmenco has implemented a process of co-treatment which involves modifying the waste product [jarosite] and sending it to Pasmenco's Port Pirie lead smelter for treatment". This is not quite correct; my understanding is that jarosite is no longer produced by the process used at Pasmenco's Risdon smelter. Instead, the intervention occurs at an earlier step so that paragoethite is produced instead of jarosite. The paragoethite is suitable for use as a feedstock at the company's Port Pirie facility, whereas the jarosite was not suitable for such use. I am not aware of paragoethite being used in a similar process in Pasmenco's Cockle Creek facility. However, I would note that there were so many factors involved in optimising the paragoethite for use at Port Pirie that it would be surprising if it was suitable for use at the Cockle Creek facility.

Dr Geoff Thompson  
Acting Asst Secretary  
Chemicals and Environment Branch  
Environment Australia  
14 January 1999

**TO:** David Sinclair, Pasmenco, Melbourne.  
Date: 4/4/99 Easter Sunday  
Fax No: 03 9288 0406



Dear David

It's been a year since we last met [at the National Environment Protection Measure (NEPM) on Air Quality workshop].

I am preparing to publish another issue of *LEAD Action News* and would like to know if I can quote you as saying at the NEPM Air workshop in Arncliffe in March 1998:

"All point sources in Australia will comply with the 10% maximum of (young) kids above 10 µg/dL by the end of 1998 (the NHMRC [National Health and Medical Research Council] target)"  
Do you have anything to add?

Yours sincerely  
Elizabeth O'BRIEN

### **REPLY:**

Elizabeth,

I did not make such a statement about point sources. I did however say the national survey of lead in Australian children published by Donovan et al in 1996 found that 92.7% of children were less than the NHMRC goal of 10 µg/dL and that the 1998 NHMRC target of 90% µg/dL had already been achieved.

Regards  
Moura McCubbin  
For David Sinclair



Dear Elizabeth,

[I suggest someone needs to] prepare a list of the uses that lead goes to, with the largest use of lead, (imported or home made) being first on the list. Then research being undertaken to find out what could be substituted. The substitute would have to be of the same or lower cost or not much more expensive. Then it would be up to the Parliament to legislate for the banning of lead for those uses, hence forcing industry to use the substitutes. There is precedent for this as according to an old *New Scientist* article the Dutch tried recycling way back in the late 60s to early 70s and they failed as business wasn't compelled to use the recycled material, hence it piled up. Working through the list from largest use to smallest one would expect to eventually reach a point of total elimination of all uses of lead (theoretically – as e.g. protection from radiation may necessitate some use?)

Andrew Gray, Mt Isa, Queensland

# Open-Cut Mining in the Heart of Broken Hill

TO: Prof Brian L Gulson  
Member of The LEAD Group's  
Technical Advisory Board



toxic material on the outskirts of town, which is

Dear Sir,

I am writing with my concerns for the children of Broken Hill. I have been talking to parents of children who have developed tumors in their hip sockets and their knees. Children who have developed cysts on their ovaries, having to have their tubes removed. This really concerns me as a parent. The mother of the child who had the tumor in her hip, is only told that it is very rare, you don't hear of tumors in a child so young "developing cancer". Then some weeks later a phone call to let the parent know that they had another child from Broken Hill with the same tumor. There are growing numbers of females developing breast cancer and young males with lumps in their breast. We have a growing number of young children with mental illness attempting suicide, and young children with cognitive dysfunction. These children can't learn, and are branded as bad behavioural children or their families are blamed or they're given the label Attention Deficit Hyperactivity Disorder (ADHD).

I have read an article on heavy metals in our systems, stating that heavy metals are stored in our bone marrow. Which is why they can be a problem, put simply they reduce our body's ability to create fresh red blood cells from the bone marrow, since heavy metals are taking up the room. Is this why the children of Broken Hill are getting so ill? I am appalled at the whole cover up by Far West Health Service and the Education Department following the start of open-cut mining in the heart of the city of Broken Hill. The dust spilling out over the city, the health of the community I think is a major concern. We have young children developing tumors on their lungs, having to have a lung removed. I cannot understand how they can cart this toxic material CERRUSSITE through the streets uncovered, from 1991 and are still removing it from the south mine when they know how toxic this material is.

Workers are sick:- some of the men had lead readings of 80 micrograms per decilitre (ug/dL) and had to be treated, one young lad was falling over all the time passing out, he has now been given 2 years to live:- tumor in his liver. I cannot understand how they can stockpile this

now killing cattle and has contaminated a station owner's land and water supply. This station owner has been told he cannot sell his remaining cattle, and the whole thing has been swept under the carpet. The land where the Cerrussite is stock piled is a tourist spot. If you pay \$25 you can fossick and take home as much toxic material as you can carry. Young children and adults are encouraged to do so. I asked "what if a child gets sick from this material?"

The children of Broken Hill will be left with no future. These children have blood noses for no reason, skin rashes, head aches, nausea, depression, bowel and bladder loss (children as old as 13 years), reflux, fainting spells and the list goes on. I have contacted the Broken Hill Environmental Lead Centre with no answers. They apparently are only funded to be concerned with under 5 year old's. There are quite a lot of children over the age of 5 who have abnormal lead readings but because they're over five, the Lead Centre staff can't help them. They say the lead readings are going down, but they are not documenting the older children where there is a problem. I have spoken to Port Pirie Environmental Lead Centre, and their children don't have the same health problems as our children are having. I was told to look at the Cadmium, Arsenic and other heavy metals that are in our children's systems.

I am concerned with the health problems our children are suffering today, and what will become of them in the future. I would appreciate any information regarding heavy metals or your input into this troubling matter.

Jenny Rowbotham, Broken Hill NSW, 8/3/99

# International Lead Management Center

## Reducing the Risk of Lead Exposure

### “AN INDUSTRY COMMITMENT TO COOPERATION”

#### OECD Declaration – Historical Perspective:

In February 1996 the Environment Ministers of the Organization for Economic Cooperation and Development (OECD) issued a Declaration on Lead Risk Reduction seeking to voluntarily develop and strengthen national and cooperative efforts considered necessary to reduce risks from exposure to lead.

The goals of the Declaration include efforts to:

- phase out leaded gasoline
- eliminate childhood exposure to lead
- eliminate leaded food packaging
- restrict leaching from ceramic-ware and lead crystal
- restrict environmental contamination from lead shot and fishing sinkers
- reduce occupational and population exposure to lead

The Declaration proposed the extension of international cooperative efforts, but recognized the differing needs and priorities of member and non-member countries and called for flexible national risk reduction strategies and time frames. It promotes sustainable development and improvements in recycling of waste materials through viable collection systems and recycling programs. It also provides for information exchanges about exposures of concern, risk reduction options and environmentally sound and economically viable solutions.

The Declaration also initiated a process, which would continue to review lead levels in the environment and exposure to lead for sensitive populations such as workers and children in order to evaluate the effectiveness of action programs.

#### Industry Response - The International Lead Management Center:

The International lead industry recognizes that exposure to lead can result in risk to human

health and the environment and in this context was invited to share their experience in the sound management and prudent use of products

containing lead. To address the needs of OECD and non-OECD countries, the international lead industry proposed to undertake a voluntary risk reduction action program. Execution of this voluntary initiative was placed under the auspices of the International Lead Management Center (ILMC). ILMC, upon invitation from a national government assists in the identification, planning and implementation of appropriate lead risk reduction measures as multi-stakeholder consultative programs with all parties committed to reduce lead exposure.

Sector based voluntary risk reduction initiatives involve ILMC and representative industry associations in the preparation and collation of materials designed to keep each sector aware of the latest advances in risk reduction technologies. In addition the Center would prepare information, provide data bases and make expertise available to:

- reduce occupational exposure
- improve lead recycling performance
- abate industrial discharges and emissions

#### The International Lead Management Center Organization:

The International Lead Management Center is located in Research Triangle Park, North Carolina, USA and was established July 1996 by the following major mining and lead producing corporations:

- **ASARCO** - USA: one of the worlds leading producers of nonferrous metals, principally copper, silver, lead and zinc.
- **BHP Cannington** – Australia: more than 100 years in business and a broadly based global resources leader in metals and energy resources.
- **Boliden** - Sweden: a thoroughly integrated smelting and refining company for pure ores as well as complex and contaminated raw materials.
- **Cominco** - Canada: one of the world’s largest producers and marketers of zinc concentrates and lead metal.
- **Doe Run** - USA: the life cycle company, is North America’s largest integrated lead min-



- ing, milling, smelting and recycling company
- **Met-Mex Peñoles** - Mexico: one of Mexico's main natural resources and industrial groups.
- **MIM Holdings** - Australia: is a major international metals and energy company which mines and produces gold, copper, silver, lead and zinc.
- **Noranda** - Canada: one of the world's largest producers of zinc and nickel, and major producers of copper, lead, gold, silver and potash.
- **Pasminco** - Australia: one of the world's largest vertically integrated base metal companies producing lead and zinc concentrates, lead, zinc and silver metals as well as the various alloys and by-products.
- **Union Miniere** - Belgium: a world leader in the nonferrous metals sector, UM produces and sells more than 20 nonferrous metals for basic and advanced technology industries, the construction sector and research.

The **Policy Advisory Group** (PAG) is a non-industry body of seven independent experts with international experience and expertise in lead mining, smelting, refining and recycling, occupational and public health, risk reduction programs and technology transfer. The PAG will ensure that ILMC activities are consistent with the needs of the international community and provides:

- selection and assessment of risk reduction programs
- process direction and transparency
- enhancement of project feasibility and capability
- a progress review and assessment of success and effectiveness

Dr. Craig Boreiko is the Executive Director, Brian Wilson, the Program Manager and Anita Wright supplies administrative support.

The membership of ILMC possesses considerable experience in a variety of risk management areas and making this expertise available to address technical inquiries or to actively participate in risk reduction efforts is one of the important coordinating functions.

### **The ILMC Principles:**

ILMC maintains certain principles in all its activities:

- voluntary participation in effective lead risk reduction programs

- there should be partnership and shared responsibility
- cooperative investigations by all the interested parties
- data would be collected and collated and shared in a transparent manner
- strategies would be integrated with existing or proposed control measures
- pilot programs will be flexible reflecting priorities and needs

### **The ILMC Sector Action:**

ILMC is currently working with the OECD and the United Nations Environment Program, Industry and the Environment (UNEP-IE) to phase out leaded gasoline.

A partnership between the International Crystal Federation (ICF), ILMC and Rutgers University is preparing lead risk reduction material for the ceramics and crystal glassware industry.

Industrial emissions, waste management issues and recycling are being undertaken in cooperation with the United Nations Development Program (UNDP) and the United Nations Conference on Trade and Development (UNCTAD) in partnership with local secondary lead plants.

Environmental concerns associated with sporting activities are being appraised by ILMC in the preparation of a "Code of Practice" for the US National Sports Shooting Federation.

### **The ILMC and the Phase Out of Leaded Gasoline:**

Many countries are attempting to establish an adequate public health policy to reduce the use of lead-containing additives in automotive fuels. ILMC participated in consultations convened by UNEP and OECD and as a consequence ILMC is establishing a clearing-house on information pertaining to lead in gasoline.

This function requires the preparation of an annotated bibliography as a guide for countries formulating public health policy on this issue. It also includes the development of a variety of information packages, including databases. Finally, ILMC will help to establish a library of successful case histories to extend the knowledge base for the International community.

You can find the ILMC at [www.ILMC.org](http://www.ILMC.org)

## Leadex's "Green Machine" for Retrieving Lead Shot

*This article is the voiceover for an excellent video showing The Green Machine in action. Please contact Errol McLelland (on ph. (03) 5439 5896 or Email: leadex@netcon.net.au) of Leadex.*

Leadex Australia Pty Ltd is proud to introduce The Green Machine.

Clay target shooting has proved itself to be one of the worlds most popular shooting pastimes, with tens of thousands of recreational shooters worldwide enjoying this popular pastime every week.

An unfortunate bi-product of clay target shooting has always been the tonnes of lead shot left behind to leach into the ground and waterways causing untold environmental damage.

Until now, this lead shot has not been easily recycled.

Using a revolutionary process, the Green Machine extracts approximately 95 percent of lead shot from the ground.

Operating at levels down to 250 millimetres below the surface, the Green Machine extracts and cleans in a single pass over the affected area.

The extracted shot is ejected from the machine into readily available and easy to handle 11 gallon drums.

Each drum weighs in at 1.25 tonnes when full.

The Extracted shot is 95 percent clean so there's no need for extra refining after extraction.

The specialised gear system allows the unit to travel at less than 1 kilometre per hour.

In fact, when the green machine is operating, the prime mover is not running at all.

From the time the green machine arrives at a location it can be fully operational within an hour.

And depending on the size and length of operation of the gun club, the green machine can extract up to 4 tonnes of lead shot per hour.

The machine has the capacity to operate 24 hours

per day using an overall crew of just 2 people per shift.

If need be the machine itself can be economically operated using just one person per shift.

Leadex offers 1 month free onsite training for your personnel with further training at a negotiated agreement.

The green machine is a low maintenance, hydraulically operated lead shot extraction system that relies only on readily available hydraulic equipment and standard bearings. This reduces any down time due to wear and tear to a complete minimum.

Leadex is currently developing modifications to the green machine that will enable the extraction of lead shot and slugs from rifle and pistol clubs and military ranges.

We expect this unique recycling function to be available early in the year 2000.

Lead shot, when extracted by other means, is currently dumped into toxic waste sites instead of the environmentally friendly solution of recycling.

The green machine ensures that this valuable commodity is re-used for such purposes bullets, batteries, boat keels, ballast and even straight back to new shot gun cartridges.

Lead shot is in high demand around the world as a readily saleable commodity, but until now it has been almost impossible to extract in a user friendly form. And the benefit to the environment is in calculable.

It's taken 4 years for Leadex Australia to perfect the green machine.

We believe that this system has huge potential for any investor, not only for use in gun clubs, but also on government sites and military installations.

In summary, Leadex Australia believes that the green machine is a one of a kind lead shot extraction system with high yield returns and reliability second to none.

# Environmental Considerations for Home Buyers

*Extracts (reprinted with permission) from a booklet "Ask the 'Green' Question", by Housing Queensland & Energex*

## **What does being 'green' mean?**

Everything we do has an environmental impact. Usually that impact is small. However, when all our small impacts are added together, the total impact can become substantial. So, by becoming aware of our own impacts, and those of others, we can start to make a difference.

Some of the information you collect may be contradictory. If so, think about where the information came from. Does the organisation supplying the information appear credible – what is their reason for supplying the material? How true do you think the information is?

## **Choosing a location**

What was the site previously used for?

Ask a solicitor about the various checks that can be done, including 'contaminated land'.

## **Home Design**

Would renovation suit your purpose?

Renovating an old home will generally use less materials than building a new home. You will make on-going use of an existing resource, rather than using further resources.

## **Materials**

Can existing material be reused?

When building or renovating, there are often ways of incorporating existing materials from other structures into the home. By reusing things like wood, bricks and window frames, you are rescuing a resource that might otherwise be discarded. However, be very careful that the reused bits are safe to use and fit for the task.

What materials affect the health of you, your family and the environment?

Check as best you can how toxic the parts of an individual product are, both to you and the environment.

## **Furnishing**

Do the furnishings have a recycled content?

Products (such as carpet and furniture) are now coming on the market that have an amount of recycled materials. Find out how much recycled material is in the product, and choose the one best for you. This can help to reduce the amount of

raw material and energy needed to make the product.

## **In the Garden**

Has the garden been 'mulched'?

Mulching means covering the soil with (generally) a fibrous material, like straw, bark or even shredded newspaper. Mulching reduces weeds, helps retain moisture in the soil, prevents erosion, cools the surface temperature, adds organic material to the soil and helps improve soil structure.

Could solar cells be used for electricity generation?

Solar cells (also called 'photovoltaics' or PVs') make electricity from the sun. They are costly to buy but can pay for themselves over their lifetime. Solar cells reduce your reliance on less sustainable energy sources. In some parts of the world, home-based solar cells feed spare electricity back into the local grid (the owner being paid for their supply). Ask your energy supplier if it is possible where you live.

## **Energy**

If you are renovating, ask architects and energy consultants about 'retrofitting' devices and materials to improve your home's 'thermal performance'.

## **Earth**

If we lose or poison our soils, replacing them is very difficult. And it makes growing our food and maintaining our environment difficult and more expensive.

## **Water**

The water we use comes mainly from a small number of reservoirs, constructed to catch and retain surface-flowing water. Further west, use is made of underground water, which moves through the cracks and crevices within the rock. In some cases the water extracted is over a million years old.

## **Safety**

People need and want to feel safe in areas where they live and visit.

Ask about 'Safety Audits' and strategies such as

Crime Prevention Through Environmental Design  
– CPTED.

### Health and product selection

Most people spend more than 80% of their time indoors, either at home or at work.

Although most people are aware of air pollution caused by vehicles and industry outside the home, few are aware of pollution in the home.

Ask for product information; manufacturers are obliged to produce 'material safety data sheets' (also called 'MSDSs')

Renovators should be particularly careful of old asbestos products or lead-based paints (often found in homes greater than 25 years old).

### Natural capital

Natural capital is the combined stock of soils,

fresh water, clean air, diverse plants and animals, as well as the legacy of gas, oil and minerals. These things are all part of our natural heritage.

### Buying 'green'

Find out, if you can, about the individual bits that comprise the product. You might find that some of the bits are toxic, or use huge amounts of energy during the production process. Ask if the provider has a published commitment to social and environmental matters. Remember: you have a choice, and your choice counts.

For copies of the booklet "*Ask the 'Green; Question'*" **contact** Energex Call Centre: 13 1253.

## U.S. Right to Know Law is Good for Home Buyers

*By Tim Conner, Envirocheck Analytical Laboratories, Narellan, Sydney, NSW, Australia.*

Following is an abstract citation from the on-line data bases at the local uni. There are a large number of articles covering this topic arguing the various stand points on this law.

From having read the abstracts of other articles and from what I saw on the internet earlier this year [1999], the law is a right to know law. It's also known as Schedule X (10). Basically **any house or flat built before 1978 that is to be sold or leased out, the owner must disclose any lead paint or lead paint hazard that they know of.** There is no compulsion to test, but in the case of a house being sold, the buyer has the right to get testing done (at their own expense) and have a ten day period in which to do so. Also the buyer or tenant must be given a US EPA brochure on lead paint hazards as part of the sale or leasing process.

Interestingly, liability was mentioned at the seminar on the new Australian Standard AS 4361.2 on lead paint management in commercial and residential buildings. Apparently there is a principle under common law in Australia that if you know for instance that there is lead in a building then you have a duty of care to inform the purchaser, otherwise you could be sued for any injury due to you failure to disclose such information. The seminar also raised some other issues for bodies like local councils and other commercial building owners.

**Database:** Applied Science & Tech.  
Abstracts:83-April 98

**Author** - Goldman, Lynn R.

**Title** - Information the key to preventing childhood lead poisoning.

**Source** - Journal of Environmental Health. V. 59, May 1997, p. 45-6

### Abstract

The Environmental Protection Agency (EPA) and the Department of Housing and Urban Development have recognised the need for more public education on the subject of childhood lead poisoning. Improperly managed lead-based pain in older homes is still the greatest source of lead exposure for children in the U.S. The EPA and the Department of Housing and Urban Development issued a regulation in March 1996 providing for the disclosure of potential hazards in such paint at the time when homes are sold or rented. The rule compels sellers, landlords, and their agents to provide information on lead-based paint and lead-based hazards to tenants and renters prior to selling or leasing a home. Consumers will thus be able to make informed decisions about home purchases, leased and maintenance to prevent lead poisoning.

# Beethoven Lead Poisoned by Danube Fish

*By Claus Geissmar, reprinted from the Daily Telegraph, Sydney, Australia, 17<sup>th</sup> February 1999.*

Thousands of Beethoven's mourners escorted his remains to their burial place in Vienna in 1827, and to a man they all believed the 50 year old, dear musical genius had died of liver disease and dropsy.

Now, scientists at a Chicago research institute have found out the truth: Danube river fish killed him.

The fish caught in what was then a particularly heavily polluted stretch of the scenic river, were one of Beethoven's favourite dishes – and they were heavily contaminated with lead.

Chicago researchers made their discovery while examining a 15cm long hair of the composer's which let them draw conclusions about Beethoven's DNA structure.

Rumours about the reasons for Beethoven's death started making the rounds shortly after his burial.

His secretary caused a sensation by claiming that medical quacks had killed the composer. He mentioned morphium and arsenic as the causes of death.

The official explanation has always been that he died of a liver infection – but that was just an official description of his symptoms, not a statement of cause of death.

That all turns out to have been pure speculation. Based on their DNA analysis of the hair, scientists have been able to reach very precise conclusions about the chemical make up of Beethoven's body in his last six months of life.

No indications of morphium were present and only minimal traces of arsenic were found, which probably came from his living room carpet. Carpets of that era usually used a glue that contained arsenic.

Music researchers know that the young Beethoven was a lively man, who spent nearly all his free time in the country.

Unhappily for him, fish from the Danube were his

favourite food. Ultimately, the fish avenged themselves by introducing the lead poison that finally killed him as he ate them.

Industrial historians have established that in the early 19<sup>th</sup> century, at the start of the industrial revolution, heavy metals – lead among them – were dumped in the Danube or on its banks.



## Aims and Motivation of No-LEAD

The aims and motivation of No-LEAD are to ensure that mechanisms are put into place to remove the threat of lead contamination to the environment and to ensure the lowering of blood lead levels particularly in North Lake Macquarie. As the effects of lead are more devastating to children, children are the priority within our actions. Our enthusiasm includes a vision of healthy children swimming in a clear and healthy creek and lake. We remain committed to that vision.

*No-LEAD is a community group at Newcastle NSW Australia, founded and run by Theresa Gordon.*

# Mining Industry Deaths and Injuries

**"Mining kills and injures more workers than any other industry."**

## International Data

*The following extracts (& above quote) are reprinted from The New Internationalist, March 1998 p-19.*

The situation is likely to be worse than statistics suggest as corporations and governments keep poor records.

The US has the second best Western safety standard, but in the first half of 1997, 84 mine workers died due to workplace accidents.

In South Africa, one worker dies and 12 suffer serious injuries for every ton of gold produced.

In 1996, 3,362 people died as a result of accidents in Chinese coal mines. Unions claim this is the worst-known record in the world.

Uranium mining has exposed more workers to radiation than any other industry - causing 20,000 deaths since the 1950s.

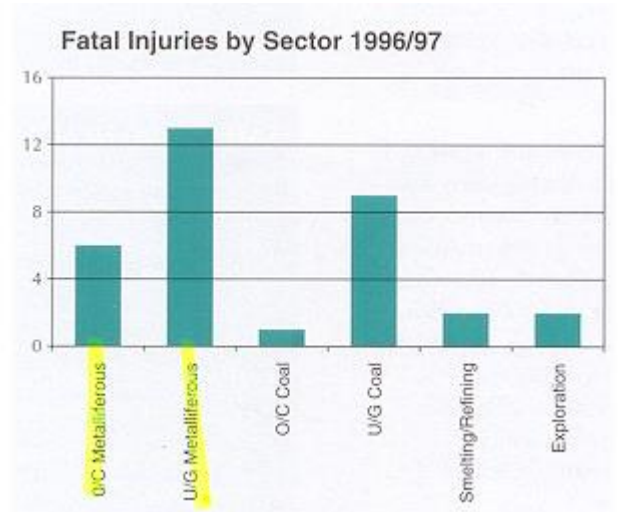
## Fatalities in Australian Mining

**The following are extracts the Safety and Health Performance, Minerals Industry Survey Report 1997, by the Minerals Council of Australia.**

In 1996/97, 33 fatalities were recorded in the Australian minerals industry. Over the past decade, on average, some 26 deaths per year have occurred in the industry. The 1996/97 fatality figure is one of the worst recorded in the last 10 years and is one more than that recorded in 1994/95 when the Moura disaster claimed 11 lives. This is unacceptable and underlines the view that the elimination of fatalities should be a strong focus of the industry's safety and health effort.

Two-thirds of the fatalities in the 1996/97 year occurred in underground mining operations with 13 deaths recorded in the underground metalliferous sector and the other 9 in underground coal mines. This latter figure includes the four deaths arising from the Gretley tragedy. Of the remaining 11 fatalities, slightly

more occurred in the open-cut metalliferous sector.



## The Ulan Miners Support Group

*The following email was circulated in January 1999.*

The Ulan Miners support group has started a campaign to get the law changed so that mining companies and their decision makers will be prosecuted when their negligence leads to the death of miners.

For example, following the Gretley disaster where the walls collapsed and the mine flooded, there were found to be 43 counts of gross negligence. There were no prosecutions.

At Moura in Queensland there have been three disasters costing 36 lives. Again no prosecutions.

And this happens disaster after disaster.

The Ulan Group are asking people to show their support by either: signing their Guestbook on their website at <http://www.minsupgrp.freesevers.com> or send an e-mail message of support to [kaosbp@ozemail.com.au](mailto:kaosbp@ozemail.com.au)

The Ulan Miners Support group consists of family, friends and retired miners. The Ulan Group is incorporated as a charity. Its President is Pauline Byfield. She has sent out this appeal



for support for justice.

Ulan is near Mudgee, NSW, Australia.

# Pollution and the Poor

*By Peter Newman, Institute for Science and Technology Policy, Murdoch University, Murdoch, Western Australia*

*The following article was originally published in Murdoch News on 1<sup>st</sup> December 1999. It is still amazingly relevant today, and a good read!!*

**Abstract: Lead pollution arising from the combustion of leaded petrol by automobiles represents a significant environmental and health concern. However the complexity of economic and social issues is making the eradication of lead pollution far from simple.**

*MURDOCH researchers have long been at the forefront of the quest to increase community knowledge of environmental issues, as well as providing data on how government and public agencies can best protect the earth's natural resources. The following paper was prepared by the Director of Murdoch's Institute for Science and Technology Policy, Associate Professor in City Policy Peter Newman, in response to the 1993/94 federal budget proposal to raise fuel prices. Professor Newman was invited to present the paper at a special interest meeting of the Australasian Teleconferencing Association on The Environment: Our Fragile Earth, conducted last month [November 1993?]. It should be noted that some aspects of the federal budget referred to in the paper were subsequently changed by the government, however to retain the thrust of the argument proposed by Professor Newman they have been retained.*

Raising the price of leaded petrol by 5c and then 10c/litre and raising all petrol immediately by 3c/litre were recently announced as part of the 1993/94 Federal budget (initial proposal). Nothing seems to have been so unpopular, so outrageous, so profane in recent political history as this move. Roundly condemned from all the predictable sources such as oil companies, motoring bodies, the transport industry and the Coalition, the clamour was joined by a collection of social justice groups who saw nothing but pain for the battlers in society with their old vehicles and houses scattered on the urban fringe. What profanity to attack the very people, the true believers indeed, who had re-elected the ALP. The sacred nature of petrol prices and the ageing Australian automobile fleet was not even taken on by most environmental groups, the Democrats nor the Greens. The attack on the Australian way of life, or at least their driving habits, was too important.

Having been part of the campaign to remove lead from petrol which has been going on for 20 years, this reaction by the Australian community has been disappointing though predictable. The evidence that lead in petrol is causing brain damage in our children

was quite convincing 20 years ago but each year since then it has been becoming more and more solid.

The NHMRC finally recognised early this year [June 1993] that the health standard for lead in blood needed to be reduced from 25 to 10 ug/dl (micrograms per decilitre) with measurable impacts being found at levels down as low as 5. At this new level of 10ug/dl, 50% of inner Sydney children were estimated to be suffering some degree of intellectual impairment. A recent Perth study showed 20% of children above the limit.

One would have expected in a clever and caring country that the brains of our children were the most sacred element in this whole debate. Even with this new and obviously unpopular move we will not have phased out most leaded petrol until 2004. The majority of western countries are almost there in phasing out lead. Thus as well as having little in place to help with the social justice impacts, the Government has not been able to demonstrate a coherent lead reduction strategy. Its programme seems to have been based on the timetable of oil companies to provide the necessary refinery capacity for unleaded fuel rather than any health requirement. Hence to many commentators the petrol price rise has appeared as just an excuse to raise revenue. Can this clash between environmental reform and social justice be resolved? Are there not important gains in this carbon tax which should be retained in the hue and cry over the attack on our sacred cars? Can the social impacts be mitigated by new programmes that also help to wean us off our rather profane dependence on low priced petrol? Australia was one of the first countries to begin the phasing out of lead from petrol though this was, like the present situation, never really done for the sake of our children's health. Rather, it was a necessary technological step in the reduction of smog as vehicles needed catalytic converters to reduce emissions of other harmful pollutants, but these converters are poisoned by lead. Despite this early start in Australia the process of phasing out lead has been interminably slow - taking much longer than most European countries who began well after us. The reason seems to be because although we were buying new lead-free cars we were not scrapping the old clunkers. Over the past decade the Australian vehicle fleet has become on average the oldest in the western world. And this touches the reason for our sacred attitudes revealed by the reaction to the budget petrol price rises: our cities have become more and more car dependent, so as well as the new vehicles, the old clunkers have become a necessity of life particularly for working wives, younger people and those on lower incomes. In many cities around the world these are people who rely heavily on good public transport

systems, not worn out cars. The basic economics of raising the price of petrol is good.

The external costs of petrol use (accidents, smog, etc) were calculated by Peter Martin recently to be around 46c/litre; at present we tax it by 26c/litre so rather than a 3c rise it should have been a 20c/litre increase if we were being economically rational. As we tend to only apply such rationality to public transport deficits and not private transport deficits, Australians screamed about the profanity of the price rise on equity grounds. One of the clear aspects of the Australian transport situation to come out of this debate is that no one knows much about the Australian vehicle fleet. We are told that somewhere between 60% and 90% of the pre-1986 vehicles can run on unleaded fuel, though motoring bodies tend to suggest much fewer.

We are also hearing that you may even be able to switch to unleaded and either intersperse it with an occasional tank of leaded fuel or mix the unleaded fuel with a bit of leaded super at each fill to ensure the valve seats don't wear out. This has been well known to environmentalists for a long time but no-one would ever officially confirm it. No study has ever been done to see if there is any impact on engines from using unleaded/lower octane fuel - thus it is left to trial and error and opinion. The resulting confusion adds to the anger experienced by the general public. The lack of knowledge about how the older Australian vehicle fleet can operate under different fuel regimes is an astonishing admission. There should be an immediate investigation and the results conveyed to the general public, particularly garage mechanics.

Perhaps a Hotline can be created by the Commonwealth EPA immediately and be used to help provide information as well as to receive it back as people experiment with the change over to unleaded fuel. There also needs to be a reassessment of the role of the oil companies in this issue. They have spent a lot of time and effort over the past decades reassuring the public that there was nothing wrong with lead in petrol. They were able to pressure government in the 1980's to keep unleaded and leaded fuel at the same price instead of there being a differential. Rather than investing in new refinery capacity to enable a more rapid lead phase-out - which would have raised petrol prices- they chose to keep fuel cheap. The obvious dependence of Australians on cheap petrol which has been so emotionally demonstrated in the budget reaction, should be seen to some degree at least, as a responsibility of the oil companies. The sacred nature of cheap petrol in Australian society is as much the planned result of oil companies as it is a cultural

imperative. Oil companies should thus be required to participate more in the solution to this problem. The first step ought to be a mutually agreed date for the phase-out of leaded petrol that is equivalent to other western countries - this is still not clear despite all the profanities being expressed about the price rise. This date and the strategy to get there should be seen as the start of a process to begin weaning Australians off their excessive petrol dependence.

The geopolitical context of the oil situation is a backdrop that must be considered. We are in the last decade before global oil supplies will peak and begin to decline. Several important geological assessments have now confirmed this picture. Not only is the remaining oil going to be harder to extract and therefore cost a lot more, remaining reserves will be increasingly focussed on the volatile Middle East. Any country that continues to provide cheap petrol in the 90's is not looking far into the future. To overcome the lead problem quickly and to begin to address the longer term issues concerning our cities I believe we need to take every opportunity for educating the public on why they should phase out leaded fuel and use less fuel in general. The differential between leaded and unleaded petrol could if anything be increased as when everything settles down, one to two cents per litre differential may not be enough to keep the momentum of the phase-down going. As well as this we need to recycle some of the new petrol tax back into two programmes: a) An 'Accessible Cities' programme which builds new transit systems to unserved suburbs and new low-cost housing in accessible locations. This programme should be clearly based on the single criterion of improved accessibility for the poor. This could be modelled on the 'Better Cities' programmes but should have a much greater emphasis on finding community-based options for rebuilding our cities. Such options have already been developed by many groups in each Australian city; and, b) A 'Cash for Clunkers' programme designed to phase out the polluting, gas guzzling old vehicles which are no longer acceptable in our cities and country towns. This should be paid for jointly by government and by oil companies based on a vehicle inspection programme that isolates and removes the most polluting vehicles first. Evidence that lead is a problem for children in all Australian cities and country towns is available. We can no longer institutionalise poverty or threaten our children's futures by giving such vehicles sacred status. The possibility of amendments to the Budget Bill by Greens and Democrats in the Senate is now a real possibility. Perhaps it provides us with an opportunity to do the right thing on lead in petrol and the right thing for the poor whilst still retaining the basic thrust of the budget.

# Newcastle Institute of Public Health

*By Rosemary Aldrich member of The LEAD Group Technical Advisory Board*

The Newcastle Institute of Public Health (NIPH) was formed in 1998 for the purpose of bringing together the expertise and capability in public health and health services research of a number of groups in the Hunter. Previously the 18 groups that have become NIPH members worked independently or collaborated on specific projects only. NIPH is structured in such a way that members can work together to research and implement evidence-based solutions to health service delivery and public health issues.

NIPH is funded by infrastructure grants from Hunter Health and NSW Health. The University of Newcastle provides resource support from several of its units including Research Branch, Human Resources Branch and Marketing and Media Services.

A core idea underpinning NIPH is to match public health and health service managers with researchers who can conduct **timely, responsive research** into practical solutions to problems confronting the managers. Achieving this should result in fewer allegations of health managers making service decisions in the absence of evidence, or of academics lacking an understanding of real world health services delivery and public health issues.

Depending on the nature of the project, a number of expert researchers from within NIPH comprise a project consortium. Consequently, any project undertaken by NIPH builds on the strengths of the individual researchers who have critical expertise in population and health services research.

Several projects involving researchers from NIPH member groups are currently under way. These projects are addressing issues such as patient safety and quality of care, as well as the changing focus in health service delivery. Projects include an evaluation of adverse events in patient care at Hunter hospital, and a needs assessment of the Tomaree peninsula.

Professor Richard Heller is the Chair of NIPH.

The Executive Officer, Dr Rosemary Aldrich commenced duties in July 1998. By the end of 1998, the secretariat will comprise the Executive Officer, some research staff, and an administrative officer. Research staff will work across several projects at once. Given that NIPH could provide infrastructure support for additional research staff, it will be possible for decision-makers to have researchers working to resolve a problem for a relatively small financial investment.

Staff and officers of NIPH are located in the Booth Building at the Wallsend Health Campus. For more information contact Dr Rosemary Aldrich Telephone 02 49246341 (Newcastle, NSW) or email: raldrich@wallsend.newcastle.edu.au

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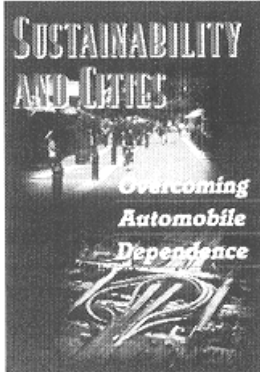
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