LEAD Action NEWS

The Journal of The Lead Education and Abatement Design (LEAD) Group Inc. Address correspondence to the Editor, LEAD Action News, c/o The LEAD Group Inc PO Box 161 Summer Hill NSW 2130 Australia. Ph: (02) 9716 0014 Fax: (02) 9716 9005 ***LEAD Action News vol 3 no 4 Spring 1995*** ***ISSN 1324-6011***

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illustration by Alexander Claud, aged 10

Editorial

by Adrian Hill

Well, Spring is here at last! (in LEAD Action News terms, anyway). In this issue there are basically three topics. Firstly, we look at a CSIRO report which suggests that air pollution may be affecting the world's climate - the climate certainly seems to be misbehaving lately, at least where I live, in Sydney.

Secondly, we look at lead in the home.

We at last present Dr. Chris Winder's survey of lead in housing in Sydney, with some alarming results, which he submitted last year.

We also have an extensive report from the LEADLINE Project by our very own Robin Mosman which details some of the personal stories of people's problems with lead. It looks at four areas, all in and around the home: Ceiling Dust, Home Renovators, Parents and Tenants.

Finally we have a couple of articles on lead workers. The next LEAD Action News (volume 4!) will contain more articles on lead workers, an area of increasing importance to the economy.

See you in Volume 4!

Air Pollution: Will it Change our Climate?

"Drifting in the air above our cities is an invisible pall of microscopic particles. Over Sydney alone, a thousand tonnes of lead from exhaust emissions hangs in the atmosphere daily, too light ever to sink to earth but constantly breathed in and out by every gulping motor, and by every inhabitant." (LEAD Action News, Spring 1994, p4). Last year the CSIRO sent out the following:

During 1993 scientists from around the world gathered in North - Western Tasmania for the final phase of a two-year experiment to find the likely impact of air pollution on global temperatures.

They were to gather information on clouds from ground-based measurements, aircraft flights and satellite instruments.

"The number of particles in clouds determines how much sunlight is reflected back into space," said Dr Jorgen Jensen, a Senior Research Scientist at the CSIRO Division of Atmospheric Research.

"In the clean air of the Southern Hemisphere, most of the particles come from algae in the ocean. However, in the polluted Northern Hemisphere, industrialisation is steadily increasing the number of particles in the air," Dr Jensen said.

Dr Jensen and his team were to fly their Fokker research plane through and above clouds. At the same time, colleagues were to probe the clouds from below and monitor air composition at the Cape Grim Baseline Air Pollution Station.

The first stage of the experiment, dubbed SOCEX (Southern Ocean Cloud Experiment) took place in winter 1993, when natural emissions of sulfur gases from the ocean were low. These gases generate natural particles that act as cloud nuclei.

During warm conditions, ocean plankton flourish, generating more particles. Scientists were to compare summertime clouds, forming in air containing high particle levels, with those formed in winter air.

"The Southern Ocean is a natural laboratory. By comparing summer measurements with those we made in winter, we can discover how increased levels of cloud nuclei change cloud properties," Dr Jensen said.

Clouds have a major impact on global temperatures. Without them, the world's average temperature would be much warmer than it is now.

Not all clouds have a cooling effect though. Clouds high in the atmosphere trap heat, warming the lower atmosphere. Our climate will depend very much on the make-up of clouds in future.

Lead Contamination in Houses in Sydney

by Associate Professor Chris Winder

In October 1994 a Lead Contamination in Houses Project was completed by the Chemical Safety and Applied Toxicology Unit of the University of New South Wales. The project was to investigate the levels of contamination in houses, sources and pathways, and the role of such sources and pathways in exposure.

Thirteen houses in and around inner Sydney were assessed for lead contamination using paint, soil and dust samples.

The fact that eleven of thirteen houses in the Sydney metropolitan area have high levels of lead contamination suggests that lead contamination of houses is not a minor problem. There are a number of reasons why lead content might be elevated, but a common finding in houses is that lead in paint is an important source.

It is known that lead abatement activities make a significant contribution to household lead contamination and are a major source of lead exposure, especially to non-professional remediators and their families. The main reason for this is an ignorance of the hazards of lead remediation, or a reluctance to believe that the risk is significant.

Responsibilities

Under ordinary administrative law principles governing civil liability, local government councils have a duty to their ratepayers to ensure to consider whether to exercise their powers to take remedial action in the event of a public nuisance. Therefore, local councils could take a more prominent role in warning householders about the lead risk in older housing. For example, Ms Michelle Calvert, a councillor with Ashfield Council, has pushed through a motion that the Councils should inform all householders in areas with older housing that they may have paint containing lead. Other Councils should be developing similar policies.

In the context of home ownership, all householders have a duty of care to ensure that their houses are as free of risks to a level that is as low as reasonably practicable. While ordinary householders may be reluctant to consider that lead is a problem (especially if considerable expense may be required in remediation activities), the identification of a lead risk cannot be ignored. Indeed, one of the householders in this study is now abating the lead risk in their property at considerable expense, so that the house can be offered for rent. However, the issue here is less aimed at the ordinary householder, and more at large landlords, such as the NSW Department of Housing. Such an agency cannot ignore the problem of lead in its older housing stock, and it should be developing policies to deal with this issue, especially in the areas of public information, hazard identification, and risk abatement.

Further, at present, there is no easy way to identify which houses may be considered a potential lead problem, although a register of housing by age would be useful. The development of such a register could be coordinated by the local councils.

Advice, Information and Training

The role of many local councils in assisting the public in advice on lead in housing is quite poor. Often the wrong person is consulted, or councils do not give environmental issues the same attention as other matters.

A public information campaign on the problems of lead in older houses should be developed, in conjunction with State government departments and the local councils.

Information to the public is the first step. A more detailed lead risk communication program should also be developed to inform both non-professional and commercial remediators about the risks of lead

in older painted surfaces, and its hazards during remediation activities.

Information programs should be reinforced by training of key groups, such as consultants offering lead assessment services and commercial remediators. Training programs should include the identification of lead remediation, what activities increase the lead risk, and the means for its proper control. The development of such training programs should be coordinated by the NSW Health, NSW EPA and WorkCover.

Resourcing of Lead Assessment Services

The inability of householders to obtain assessments of the lead hazards in their houses remains a problem. The refusal of the Health Department to conduct domestic lead assessments except for cases of poisoning is unacceptable. Therefore, more resources need to be given to the supply of lead assessment services, especially in the public sector.

Licensing of Consultants and Remediators

The possibility of licensing or accrediting consultants offering lead assessment services and commercial lead remediators following appropriate training should also be examined, especially in the light of recent re-contamination findings by Dr Brian Gulson of the CSIRO. While there is some way to go before efficient and practicable methods of remediation and abatement are identified, a significant expertise in asbestos removal exists which could be used to assist this process.

Standards for Environmental Samples

The next step is standards. The National Health & Medical Research Council and ANZECC have already established recommended standards for lead in blood, lead in air, and lead in drinking water. Standards should be developed and implemented for lead in soil, lead in domestic paint surfaces and lead in household dust above which action is required to be taken. For example, a house with soil lead at 200-400 ppm should be classified as a lead risk, and policies and procedures should be developed which can address the problem. Higher levels should be associated with escalating activity (for example, mandatory abatement at levels above 1000 ppm).

Research

Lastly, independent research should be funded which:

could establish the scope of the lead in paint problem in domestic housing, especially in areas where older houses exist;

would appraise the contribution that lead in paint can make to human lead exposure where lead in household paint may be a major risk;

could evaluate effective lead remediation techniques and products, both in terms of their effectiveness of removing lead risks, and in their ability to prevent recontamination.

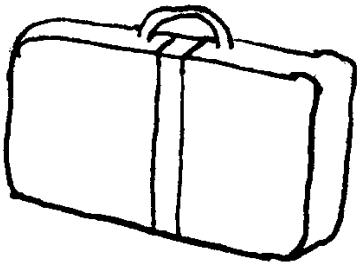
Such research could be funded at the Commonwealth or State level, or through a levy on industries such as mining, battery manufacture or paint manufacture.

Conclusions

In conclusion, lead in paint has not been recognised as a particular problem, especially when contrasted against problems such as lead in air (from petrol) or lead in water. However, in certain areas, such as in older housing contaminated by lead abatement activities, other problems can overwhelm the issues of lead in air and water.

An initial examination of lead contamination in houses in Sydney suggests that the contamination of houses by lead in paint or soil is significant. While the problem has been considered localised, for instance, in the inner suburbs, this is misleading. The identification of high levels of lead in a house in Hornsby indicates that lead in houses is a problem of older houses, wherever they happen to be. Further work needs to be carried out to establish the true magnitude of what appears to be a largely unrecognised and ignored problem.

Activities such as public information, training, better resourcing of lead assessment services, standards setting and research also need addressing.



Case Studies in Lead Poisoning

by Robin Mosman

Last June The LEAD Group was granted $150,000 by the Commonwealth Environment Protection Agency (CEPA) to set up the LEADLINE Project - a national information and referral service for people's inquiries on lead.

In the second quarterly report of the LEADLINE Project submitted to CEPA in November 1995 we included the following 4 sections of feedback from callers. They are an insight into the real problems people are facing with lead.

Feedback for the first quarterly report was obtained by random call-back of inquirers.

For the second quarter it was decided to target some specific categories of inquirers. Categories selected were:

1. Inquirers who were referred to ceiling dust removalists
2. Home renovators
3. Parents of children with high blood lead levels
4. Tenants.

Ceiling Dust Removal

At the time LEADLINE began being asked for referrals for ceiling dust removal, there was only one contractor (1) in Sydney who had possibilities for a lead-aware operation. We were aware of the situation where unsafe ceiling dust removal practices in Boolaroo had led to increased blood lead levels, and so monitored the contractor's performance carefully. One of the project officers engaged him to remove ceiling dust from her home, and observed the operation, which was not satisfactory. The contractor was given verbal and written advice on ways to improve his service, and advised of the need for him to be blood lead tested in order to ascertain the safety of his operation. He was not willing to do this.

A second contractor (2) was recommended to us and interviewed by us, and on the basis of his stated operation procedure we gave referrals to him. However, monitoring revealed that he too was using unsafe practices.

As this situation coincided with increasing public awareness of the possible dangers of leaded ceiling dust, it posed a considerable dilemma. Fortunately at about this time LEADLINE was contacted by a building contractor (3) interested in establishing his company as a ceiling dust removal contractor. Through meetings with LEADLINE project officers, and a wide range of experts to whom he was referred by LEADLINE, he has been able to have special HEPA vacuum equipment designed for safe removal of ceiling dust (at a cost of $18,000), and has established an excellent, professional and lead-aware service.

His company is a tribute to the co-operation between The LEAD Group and the fledgling lead abatement industry in Australia, and one of the great achievements of EPA's funding of The LEAD Group's information and referral service.

In early December when Sydney radio station 2CH offered an advertising package regarding removal of ceiling dust to the dust removal company, LEADLINE were able to offer to check the advertising scripts for accuracy for 2CH.

In mid-December LEADLINE was able to refer the company to the insulation firm who have been appointed suppliers to the Sydney aircraft noise insulation project.

Case (a) was a mother of young children, who had recently bought a Federation house in Marrickville and was concerned about the ceiling

dust - "these ceilings are bulging". When re-contacted, she said the information supplied to her by The LEAD Group had been great, but that the family had been away on holidays for 3 weeks and so far she has not acted on the ceiling dust removal. She said she would definitely be following up on the removal because they are in the flight path and will be having their ceiling sound-proofed. We were able to give her a second referral as the new contractor has now begun operating and she was very pleased to have this for a price comparison.

Case (b) was a home renovator who had been up into his ceiling while renovating and found "kilos of the stuff upstairs". In the first contact, he stated that he was already quite lead-aware through his work and that his 18 month old daughter had a borderline high blood lead and was being monitored. He said he didn't need any further information, so was given only 2 referrals to ceiling dust removalists by phone. On re-contacting, he said that he had received quotes from the 2 firms but one quote was more expensive than the other and he wants more information from them on exactly what each is offering. He is definitely going to get the work done. He had his blood lead tested initially at work. When it was found to be borderline high, his wife and child were tested and found to have similar levels. Further discussion established that he was still renovating in a non-lead-aware manner and had not done a clean-up because the job was not finished yet. He then asked for additional information to be sent, saying "Perhaps I'm not as lead-aware as I thought I was". He also decided that he should have his blood lead tested again, and that if his was still high to re-think his renovation strategy.

Case (c) was a pregnant mother of 2 young children (1 and 3 years) in whose home attic stairs had been cut into the ceiling. "The ceiling is full of dust". On re-contact, she said that they had not had the ceiling dust removed professionally because the contractor had not come out to give a quote, and because of the likely cost. They rented an industrial vacuum cleaner and her husband did the job "fairly unsuccessfully - there's still a lot up there". Her husband wore a respirator and had his skin fully covered. She had not had the children's blood lead levels tested yet as she had been without transport.

When asked if she had changed her housekeeping and childcare practices as a result of the information from The LEAD Group, she said "I'm certainly more aware if a little more paranoid - I see it all around me - we do as much as we can - the children are restricted to a deck. We agonised about where to go when we bought the house - but this is where we want to live. The LEAD Group is doing a great job - their information was fantastic. When I saw my GP and raised the problem of lead at the time of my first pregnancy, she just laughed - said what was I going to do about it if it was up. Knowing what I know now, that I could have done something, I feel quite angry."

Case (d) was about to start renovating at the time of his first contact with us. He was advised of the need to protect his pregnant wife during the process. He did not in fact get his ceilings vacuumed at the time of the renovation because although he tried twice to get on to the only contractor to whom LEADLINE could refer him at the time, his calls were not answered. He said he would still consider getting the job done, so was given a second referral to a new contractor who had started operating since his first contact.

When asked if The LEAD Group's information had caused him to make any changes from his previous renovation practices, he said "It definitely raised my awareness of health issues regarding lead". As a result, he went to considerable efforts - all furniture, clothing etc was put in one room and sealed off during the renovation, he used an ionised air filter while working, and he and his wife moved out during the renovation. He was grateful for the re-contact and new referral.

Case (e) initially contacted the first contractor following a newspaper article. She described her dealings with him as an "absolute nightmare - he stood us up on an appointment - my husband took time off work and he didn't even phone". She said his attitude was "I'm the only one doing this so you really don't have a choice". After talking to him she had real concerns about the safety of his operation.

She then contacted LEADLINE. We were able to recommend contractor (3). She described their service as "quite fine - very, very professional. I'd recommend them to anyone else. They confirmed their appointment, they cleaned up after themselves, they left nothing in the street. It was more than double the price (of Contractor 1) but that's not an issue if you know the job has been done safely".

Renovators

There is a considerable overlap between the next two categories.

At the time covered by this review, the only printed information available to be provided to enquirers on lead-safe renovation was 2 booklets from the US EPA, "Lead Based Paint" and "Reducing Lead Hazards when Remodelling Your Home." LEADLINE photocopied (with permission) these booklets and made them available to many enquirers, as well as spending a great deal of time in helping them work out what they would need to do, and prioritising the various aspects of the lead-abatement project. Most often, more than one call, in addition to the printed information, would be needed for them to completely understand what was needed. It became clear to the project officers that the availability to enquirers of someone with whom to talk through the issues and ask questions was paramount in getting a good outcome.

Case (a) was a nurse who with her husband had been renovating for 3 years. She had her 9 month old son's blood lead tested after hearing a LEADLINE Project officer being interviewed on the ABC - it was 0.49 µmol/L (just above the national goal of 0.48 µmol/L (10 µg/dL). At the first contact she said "Nobody says anything to you at the hardware store - even the paint companies didn't say anything about a problem with old lead paint, though they gave information about all sorts of other things".

As a result of the information they received from The LEAD Group, they moved out of their house for a month while they did a complete clean-up - "It took ages. It was a terrible job". They are now waiting for the results of their child's second blood lead test. This inquirer was very angry about the lack of warning information about lead -"The community health sisters who come to your home when you come home from hospital with your new baby, they see what your house is like, I even told the one who came to me we were renovating, they could tell you about lead - they tell you all this other stuff everyone knows anyway".

"It wouldn't have been any hassle for us to have gone to my mum's before we started - as it was we had all the guilt and worry of having poisoned our child, and we still had to do all this clean-up job - it was terrible."

She is "much more avid about wet dusting", and is buying a HEPA filter vacuum cleaner.

Case (b) is a pre-school teacher and the mother of a 16 month old baby and a 3 year old child. She had her children's blood leads tested prior to contacting LEADLINE, as a result of concern raised by reading her local paper. She and her husband were renovating their house and had pulled down an old garage. The baby's blood lead was 0.67 µg/L, the 3 year old's "high but just below the level of concern". She contacted LEADLINE late on a Friday afternoon, distraught, having just received the results by phone from her GP and desperate to know what they meant, as the doctor had not been able to tell her much at all.

On recontact, she said that "LEADLINE's support was brilliant - it was just fabulous to have someone to talk to." The information given to her verbally and in written form had been "so useful but quite frightening." She described the paint and soil sampling service offered by LEADLINE as "a very cost-effective way of finding out the extent of our problem." It disclosed lead levels in the soil of 8840 ppm (the level for further investigation is 300 ppm), and in ceiling paint of 18900 ppm. As a result of that information they have returfed the yard and will move out of the house before dealing with the ceilings. They have had the carpet and upholstery lead abated and will have it done again after the ceilings are remediated.

She is using The LEAD Group's lead-aware housekeeping, childcare and nutrition advice personally, and has also introduced it at the pre-

school where she teaches, and to the day-care centre attended by her children.

Case (c) had started renovating a 60 year old house. The living room had been sanded by a tradesman. They had tested the paint with a lead check kit and had a positive result. There was other peeling paint in the house.

After contacting LEADLINE, they had the 18 month old baby's blood lead tested - it was 0.31 µmol/L (6.4 µg/dL). They also recently had soil and the paint off an old door tested - the results of these tests have not yet come back. In answer to the question of whether The LEAD Group information had changed what they were doing she replied "Oh yes! It was excellent. It very much affected what we're doing." They have stopped all work at the moment because the first contractor was not lead aware, and not prepared to become so. They are now looking for another contractor. We referred her to another contractor, and to the EPA booklet. She said "I mop and wipe things up a lot more."

Case (d) is a medical scientist, mother of an 8 month old baby. Her husband used an electric sander to strip the paint off 5 old doors. She first contacted LEADLINE after reading an article in the consumer journal Choice. They subsequently tested the paint, which was leaded. They weren't living at the house at the time, but were back and forth to it a fair bit.

She could not believe that she had been so unaware of the danger of lead to the baby - "I'm a medical scientist, I should have known, I should have realised." After discussion and further information from The LEAD Group, she decided to buy a HEPA filter vacuum cleaner, as the old one was used to clean up throughout the renovation and does not have disposable bags, and their house is in an old part of Melbourne where there is a lot of historical lead in the environment.

Case (e) is now a builder contractor, and comes from an extensive management background in the building industry, which included trade union representation, training and asbestos abatement. He contacted LEADLINE because he was about to embark on a massive renovation of his very old home in the inner west of Sydney. He wanted to do it in a responsible manner, and one that would not put his small child and pregnant wife at risk of exposure to lead.

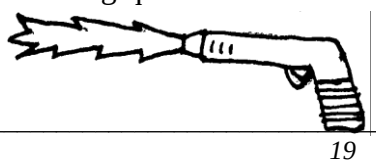
On recontact he said "I needed a framework within which to do a responsible lead abatement of my home, and LEADLINE provided that. Your information was more than useful - it helped me to do the job with confidence. LEADLINE was the only organisation from which I could get the information I needed."

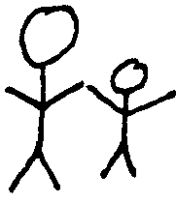
The family moved out of the house for the duration of the job, and as much paint removal as possible was done off-site in a controlled environment - this included windows, skirtings and architraves. Any other paint removal was done by wet-stripping, with all paint removed double-bagged every hour, and regular HEPA vacuuming. All power tools used were fitted with dust-extraction equipment with non-reusable bags. All paint waste went to the special waste tip.

He said "I proved to myself that it is commercially viable to do a lead-safe renovation. It is cost-effective. It doesn't have to cost the earth. I'm satisfied and happy with the results, and I'm very grateful and appreciative of LEADLINE."

Case (f) was renovating the lounge room of a 1890's house at the time of first contact. They had heat-gunned and sanded the timber skirtings back to bare wood.

When asked on re-contact whether the LEAD Group information had made a difference to their renovation practices, she said "A 100% difference - I wasn't going to risk my children". They have stopped all work for the time being and are getting "professionals" to finish the work in the New Year. We advised her of the probability that professional painters might know nothing about safe lead practises, and that she should obtain the EPA booklet with the model specification for obtaining quotes for removal of paint containing lead.





Parents of Lead-Poisoned Children

Case (a) first contacted LEADLINE following the "Better Homes and Gardens" TV program on 17.10.95, featuring the dangers of lead in renovating. She and her husband had been renovating their 90 year old "Queenslander" for a number of years, sanding, sand-blasting and heat-gunning. On our advice the children's blood lead levels were tested. The 3 year old boy's level was 1.8 µmol/L (37 µg/dL), the 8 year old girl's 1.1 µmol/L (22.8 µg/dL). The doctor told the mother the results were "just a bit above normal." She recontacted LEADLINE for help in understanding the implications of the results, and to work out what they needed to do. The husband said "The doctors were not at all helpful about what to do - they just said finish renovating or relocate. Because of The LEAD Group's information we're more educated about lead than anyone in the area, including the doctors and the Health Department." A Health Department representative said to him "Sounds like you know more about it (what to do about lead contamination) than we do!"

The family moved out of the house and the husband took a month off work to finish all the renovation work and clean up. He has been working from 5 am to 8 pm - "I'll be glad to go back to work for a rest!" Walls not yet stripped of leaded paint were encapsulated with timber cladding, contaminated areas under the house were sealed off - "This is all from information you sent us."

They had a lot of trouble trying to locate a HEPA filter vacuum cleaner. The husband was laughed at by the proprietor in the vacuum cleaner shop until he produced the information sent by LEADLINE and persuaded the man to phone a company which could provide a HEPA filter vacuum cleaner. All furniture, upholstery and clothing has been washed - "Everything we've learned from you we've put into practice."

"We've been speaking to quite a few people - people renovating and people at work - lots of them are getting their kids levels tested now too. We've got a lot to thank you for - even at the high level our little boy was at, he wasn't showing any signs. Without that TV program and LEADLINE we would have kept on renovating the same old way, even after we'd finished we'd have just kept on stirring up the lead dust with the old vacuum cleaner."

"What can I say? You were really, really helpful."

Case (b) is the mother of twin boys, one of whom swallowed a lead sinker at age 3. At the hospital (1) to which she took him, interns told her (after a phone discussion with a consultant surgeon) that the sinker would pass, and sent the child home. The Poisons Information Centre gave the same advice. She was not satisfied and contacted her GP. He advised returning to the hospital in anticipation of surgery, which she did, but the child was again sent home without even a blood lead test. The GP then referred her to hospital (2) where tests showed a blood lead of 3.2 µmol/L (66 µg/dL). His twin brother was 0.3 µmol/L (6.2 µg/dL). He was immediately operated on for removal of the sinker. The doctor in charge "looked up what had been done in the US when a child swallowed a lead sinker - that's then what they did." Six months later his blood lead is 0.9 µmol/L (18.6 µg/dL).

The inquirer contacted LEADLINE six months after the incident after seeing an article about the dangers of lead in Sydney's Child, a paper distributed through pre-schools, and requested information. When re-contacted about the usefulness of the information, she said "It was definitely useful - while he (her son) was in hospital, I had no knowledge, neither did the doctors or anyone. The GP didn't know either. What information they did have, did give me, was very technical and medical. I could really have done with The LEAD Group information then. I had nothing to go on - there was a small laminated poster in the waiting area at the hospital - that was it."

She found The LEAD Group information on the comparisons of Australian and US blood lead levels particularly helpful, also the advice on

nutritional methods of reducing blood lead levels. "No-one gave me any information on effects because they didn't know themselves. No-one at the hospital was helpful - they did their job but it was a learning experience for them too - it was a bit frightening - they were experimenting with his medication, trying different things. No-one seemed to really know." She later took him to her local area health clinic. "They didn't know anything about the effects of lead either."

"The LEAD Group information was wholly helpful." This inquirer spoke of her concern that sports and fishing tackle stores are allowed to display lead sinkers in open trays at a level where toddlers and young children can easily take them. She is particularly concerned that so many health professionals seemed to know so little about lead - "Ninety percent of parents don't know anything, so we really need the health profession to know this stuff."

Tenants

LEADLINE is fielding an increasing number of calls from tenants who have become aware of possible problems presented by peeling paint in the premises they are renting. They find themselves in a particularly difficult position, as the person responsible for remediation, the landlord, is usually very difficult to convince that there is a problem. If he does concede a problem, getting him to pay for a safe re-paint is the next difficulty, given the dearth of lead-aware painters and the additional cost of such a job. Often tenants face the prospect of having peeling lead paint removed from their walls only to have it distributed throughout the house as lead dust. Others have simply been invited to move.

Case (a) was pregnant and soon to be moved with her 2-year-old child into a house owned by the school authorities of the private school where her husband teaches. The house was to be renovated prior to their moving in.

On re-contact she said that the US EPA information on lead-safe renovation sent to her had been very useful. "It gave us information to be able to ask for things to be done" although the school authorities have not been very co-operative. Their position to date has been that they will have 2 or 3 coats of paint put over the existing paint and everything will be fine. We recommended the EPA booklet for the draft specification, and that she tell the school authorities that she will be having blood lead tests for her and her child both before they move into the house and 6 months after. "Thanks for all of that - thanks for following it up."

Case (b) contacted LEADLINE because of her concern about the peeling paint in the rented house where she lives with her family, which includes a 15-month-old baby and a 3-year-old child.

As a result of her contact, she had her children's blood lead levels tested - they were 0.4 µmol/L (8.3 µg/dL) and 0.2 µmol/L (4.1 µg/dL) respectively. At the time she was given the results she was told by her GP that "Anything under 0.7 is OK." She is now buying a HEPA filter vacuum cleaner and trying to get extra iron into her children. She has not yet confronted the landlord - she fears he will simply tell her to go and she cannot cope with a move at the moment.

Case (c) attended an information evening on lead organised by Ashfield Council on the initiative of Councillor Michelle Calvert, who is also a Project Officer with LEADLINE. At this evening she received printed information from The LEAD Group.

As a result she had dust and peeling paint in her rented home tested for lead, and also her 1-year-old son. The paint contained 43,000 ppm, the dust 14,000 ppm and the child's blood lead was 0.58 µmol/L (12µg/dL). She said her real estate agent was more concerned about the lead levels than her landlord, even though the landlord has young children. They are now moving from the house "after a stand-up argument with the landlord" into a house with washable floors. She said she had received "so much information" from The LEAD Group - "You've been so helpful."

Case (d) is the mother of 2 children aged 2 and 4, who contacted LEADLINE because she wanted to rent the premises vacated by Case (c). The real estate agent told her about the high lead levels in the paint and dust, and in the previous tenant's child's blood, and suggested that she contact LEADLINE.

As a result of The LEAD Group's information, she was able to have the peeling ceilings repainted and the carpet lead abated at the landlord's expense prior to moving in, even though the landlord (who had grown up in the house, now lives in Canberra and has never heard of lead dust as a health problem) couldn't understand why there was any problem. She taped heavy paper over the linen cupboard walls where there is heavily-leaded peeling paint. She had her children's blood lead's tested before moving in (they were low) and will do so again in 6 months, and "is being very careful" with lead-aware housekeeping and child-care practices. The floor of the room where the children play is lino and she regularly mops that with sugar soap, and religiously washes the children's hands before meals. She is not entirely happy with the outcomes, but feels she has done the best she can do under the circumstances.

She said she found The LEAD Group information extremely helpful - "There was just nowhere else to go to get any information at all."

Government Actions on Lead

by Michelle Calvert

In the first two months of the project, apart from the funding of the LEADLINE Project itself, there were no observable government actions or changes in regard to lead. The following report on August, September and October has been prepared by project officer Michelle Calvert.

On a number of occasions Government has responded to concerns raised by the public or directly from LEADLINE regarding environmental lead issues.

Department of Administrative Services

As a Project Officer with The Lead Group I had counselled inquirers concerned about Sydney flight path demolitions and I was concerned when I saw TV footage of the demolition of a house at Sydenham and the worker was not wearing a protective mask. I made contact with the CFMEU which is the trade union responsible for the workers on site. No response was received. I also contacted the Department of Administrative Services which is the government department overseeing and managing the project. The managers of the insulation and demolition of dwellings, respectively, attended the office of The LEAD Group and after some discussion undertook to investigate our concerns. As a result the demolition and insulation program has now been suspended and new "Lead aware" guidelines for contractors have been drawn up in keeping with advice from the NSW EPA and WorkCover.

When questioned as to what action was envisaged regarding the schools and dwellings that had already been insulated unsafely, the manager of the aircraft noise insulation project stated that "nothing could be done about past history."

State Rail

On a visit to Tempe Railway station in Sydney's inner west, I noticed that the handrail and balustrade of the station appeared to have exposed "red lead". After conducting a lead check kit test and obtaining a positive reading I contacted State Rail to inform them of our concerns. The "red lead" was at such a height that it was readily accessible to the many children who used the station and would be tempted to run their hands along the railings and handrail. After some procrastination the offending rails have been sealed and painted and The LEAD Group have been assured that they will be professionally repainted by February and that the top overhead bridge and centre island handrails will be replaced in the next financial year.

Waterboard "KIRA" pre-school

In October 1995 the Kira Child Care Centre in Sydney's inner east was temporarily closed down when an adjacent site was found to have "concerning" levels of contamination. The land occupied by the child care centre and the contaminated adjacent site, was formerly a works depot of the Sydney Water Board. Enquiries revealed that the centre is still closed and that children are being cared for at the Bathurst Street headquarters of the Water Board.

Early Childhood Centre in premises owned by a Local Council in Sydney

Results dated 13.10.95 revealed a reading of 20,000 ppm in ceiling dust and the centre is presently closed. LEADLINE was able to provide useful information and referrals to the Centre manager, the Local Council and the regional manager of Community health services, who all contacted LEADLINE.

Pre school in premises owned by a Local Council

In late September 1995 The LEAD Group was contacted by a concerned parent who had witnessed Council workers grinding off old paint from a wrought iron fence at the pre school.

The parents had contacted us previously and so were aware of our service. It transpired that renovations had begun on the centre in June and had been proceeding on the interior of the building at night. The children were still attending the centre during this time. The Local Council was contacted and meetings took place to discuss the problem. The Council undertook a clean up of the site which included new sand and some new topsoil. The Public Health Unit was called in by the Health Minister, Dr Andrew Refshauge, to offer to all parents the opportunity to have their children blood tested for lead.

Clean-up and Clearance Prior to Rehabitation

by Prof. Brian Gulson and Fred Salome

The following is an extract from the Workshop Manual for the Lead Paint Management training programme being offered in 1996 by Macquarie University Graduate School of the Environment in conjunction with CTI Consultants. The authors have granted permission for this extract to be reproduced. This extract covers final clean-up and clearance prior to rehabitation, which is an important subject not covered in the "Lead Alert" brochure distributed by the Commonwealth EPA.

Introduction

All lead hazard control activities can produce dangerous quantities of leaded dust. Unless this dust is properly removed, a building will be more hazardous after the work is completed than it was originally. Once deposited, leaded dust is difficult to clean effectively. Whenever possible, ongoing and daily cleaning of leaded dust during lead hazard control projects is recommended. Regular cleaning is also necessary to minimise worker exposures.

Cleaning is the process of removing visible debris and dust particles too small to be seen by the naked eye. Removal of lead-based paint hazards in a dwelling unit will not make the unit safe unless excessive levels of leaded dust are also removed. This is true regardless of whether the dust was present before or generated by the lead hazard control process itself.

Many of the special cleaning methods and procedures required for lead paint management are not standard operating procedure for general building or painting contractors. Therefore, contractors must follow the methods and procedures recommended below, even though some may appear to be redundant and unnecessary. These methods have been shown to be feasible and effective in many situations and skipping steps in the cleaning procedures can be counterproductive.

When cleaning is complete, surface dust sampling should be carried out to verify the dwelling is suitable for occupancy. This is referred to as clearance testing.

Cleaning

Daily Cleaning

Cleaning activity should be scheduled at the end of each workday when all active lead hazard control throughout the dwelling has ceased. Sufficient time must be allowed for a thorough and complete cleaning (usually about 30 minutes to an hour).

Daily cleaning will later help to achieve clearance dust levels by minimising problems that may otherwise occur during final cleaning, and will limit worker exposures.

Daily cleaning should consist of:

Removing large debris;
Removing small debris;
Initial HEPA vacuuming, wet cleaning, final HEPA vacuuming (horizontal surfaces only);
Cleaning exterior;
Patching and repairing plastic sheeting; and
Securing debris/plastic.

The only way that lead hazard control work can proceed safely in occupied dwellings is to ensure that cleaning is completed before residents re-enter the work area. Daily cleaning is especially important when residents are present in the dwelling while work is in progress, or when residents return in the evening after work has been completed for the day.

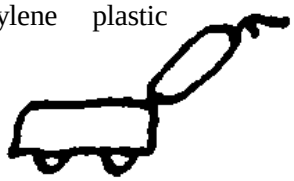
Neither debris nor plastic sheeting may be left overnight outside the dwelling or in any area where passers-by or children could come into contact with these materials.

Final Cleaning

Wait for at least one hour after the completion of any work that results in the generation or disturbance of dust before commencing the final clean-up operations.

The following equipment is needed to conduct cleaning:

High Efficiency Particulate Aerosol (HEPA) vacuums
detergent
waterproof gloves
rags, sponges, mops, buckets
6-mil (0.15mm) plastic bags, debris containers
waste water containers
shovels and rakes
water-misting sprayers
6-mil (0.15mm) polyethylene plastic sheeting (or equivalent).



HEPA Vacuuming

The first step in cleaning up is to thoroughly vacuum all surfaces using a HEPA vacuum cleaner. HEPA vacuum cleaners differ from conventional vacuum cleaners in that they contain high-efficiency filters that are capable of trapping extremely small, micron-sized particles. These filters can remove particles of 0.3 microns or greater from air at 99.97 percent efficiency or greater.

Vacuuming by conventional machines is unlikely to be effective, because much of the fine dust will be exhausted back into the environment where it can settle on surfaces. A recent Canadian study revealed that fine-dust air levels were exceedingly high when a standard portable vacuum with a new bag was used.

There are a number of manufacturers of HEPA vacuums: HEPA filters are often fitted as optional items on industrial vacuum cleaners. At present, at least one manufacturer in Australia distributes a domestic machine which has HEPA filtration as a standard item. It is Model GM 210 from Nilfisk of Australia Pty Ltd.

Surfaces requiring vacuuming in final cleaning include ceilings, walls, floors, windows, interior and exterior sills, doors, heating, ventilation, air conditioning equipment (heating diffusers, radiators, pipes, vents), fixtures of any kind (light, bathroom, kitchen), built-in cabinets, and appliances.

To aid in dislodging and collecting deep dust and lead from carpets, the HEPA vacuum must be equipped with a beater bar (agitator head) which is fixed to the cleaning head. This bar should be used on all passes on the carpet face during dry vacuuming.

All rooms and surfaces should be included in the HEPA vacuum process, except for those which were found not to have lead-paint hazards and were

properly sealed from work areas before the process began.

Vacuuming should begin on the ceilings and end on the floors, sequenced to avoid passing through rooms already cleaned, with the building's entryway cleaned last.

Verandahs, footpaths, driveways, and other exterior surfaces should be vacuumed if exterior hazard control work was conducted, or if debris was stored or dropped outside.

Wet-Detergent Washing

At the conclusion of the initial HEPA vacuuming, all vacuumed surfaces should be thoroughly and completely washed with a high-phosphate solution or other lead-specific cleaning agent and rinsed.

Several types of detergents have been used to remove leaded dust. Those with a high-phosphate content (containing at least 5 percent trisodium phosphate, also known as TSP) have been found to be the most effective. TSP detergents are thought to work by coating the surface of dusts with phosphate or polyphosphate groups which reduces electrostatic interactions with other surfaces and thereby permits easier removal.

Users of cleaning agents for leaded dust removal should follow manufacturer's instructions for the proper use of a product, especially the recommended dilution ratio. Even diluted, trisodium phosphate is a skin irritant and users should wear waterproof gloves. Eye protection should also be worn, and portable eyewash facilities should be available. Consult manufacturer's directions for the use of other detergents.

Because a detergent may be used to clean leaded dust from a variety of surfaces, several types of application equipment are needed, including cleaning solution spray bottles, wringer buckets, mops, variously sized hand sponges, brushes, and rags. Using the proper equipment on each surface is essential to the quality of the wet-wash process.

As with the vacuuming, wet washing work should proceed from ceilings to floors and be sequenced to avoid passing through rooms already cleaned. To avoid recontaminating an area by cleaning it with overly dirty water, the cleaning mixture should be changed after its use for each room. As a rule of thumb, 20 litres should be used to clean no more than 100 square metres.

Used cleaning mixture is potentially hazardous waste; consult with your local water and sewage utility for directions on its proper disposal. Wash water should never be poured onto the ground. The wash water is usually filtered and then poured down a toilet, if the local water authority approves.

Final HEPA Vacuum

A final HEPA vacuuming is carried out to remove any remaining particles dislodged but not removed by the wet wash.

Clearance Testing

Clearance testing determines whether the premises or area is clean enough to be reoccupied after the completion of a lead paint hazard control project. A cleaned area may not be reoccupied until compliance with clearance standards has been established. To prevent delays, final testing and final cleaning activities should be coordinated.

Sampling Locations

The number of locations at which surface dust is to be sampled will depend on the nature of ambient lead sources (internal and external) and their accessibility especially to children. Lead dust sampling is most important if renovations have been recently carried out, or if deteriorating lead paint is present.

Hard non-absorbent surfaces should be targeted. These typically include windows, floors, shelves and exterior parts of buildings such as window sills, tiled verandahs, and garden furniture. Surfaces exposed to rain or regular use will usually have low dust levels, whereas sheltered surfaces (under eaves, verandahs, window wells, tops of doors or features) may have accumulated fall-out from petrol or other sources giving high lead levels.

Chalking paint surfaces can also be sampled to gauge the likelihood of lead dust being liberated by paint deterioration.

Sampling Procedure

An area is marked out on the surface to be sampled. The area should be at least 250 cm^2, preferably 900 cm^2 depending on the amount of dust present. Mark out the sample area using masking tape, measure the lengths of the sides of the sample area and calculate the surface area; make a note of this figure.

To prevent contamination, wear disposable gloves and change gloves after each sample. Use commercially available wipes moistened with a non-alcoholic wetting agent such as Diaparene™ Baby Wash Cloths. Place a wipe flat onto the surface to be sampled and rub in an "S" pattern.

Fold the wipe in half with dust inside and rub at 90° to the first "S". Fold the wipe again with the dust inside and place it in a sterile sample container usually supplied by the analytical lab.Label the tube with the sample number, location and surface. Carefully document the exact sample location for future reference.

The sample is then sent to an analytical laboratory for determination of the amount of lead by AAS or ICP.

Acceptance Criteria

According to the United States Department of Housing and Urban Development (US HUD) Guidelines, the permissible amount of leaded dust remaining on each of the following surfaces following lead hazard work is:

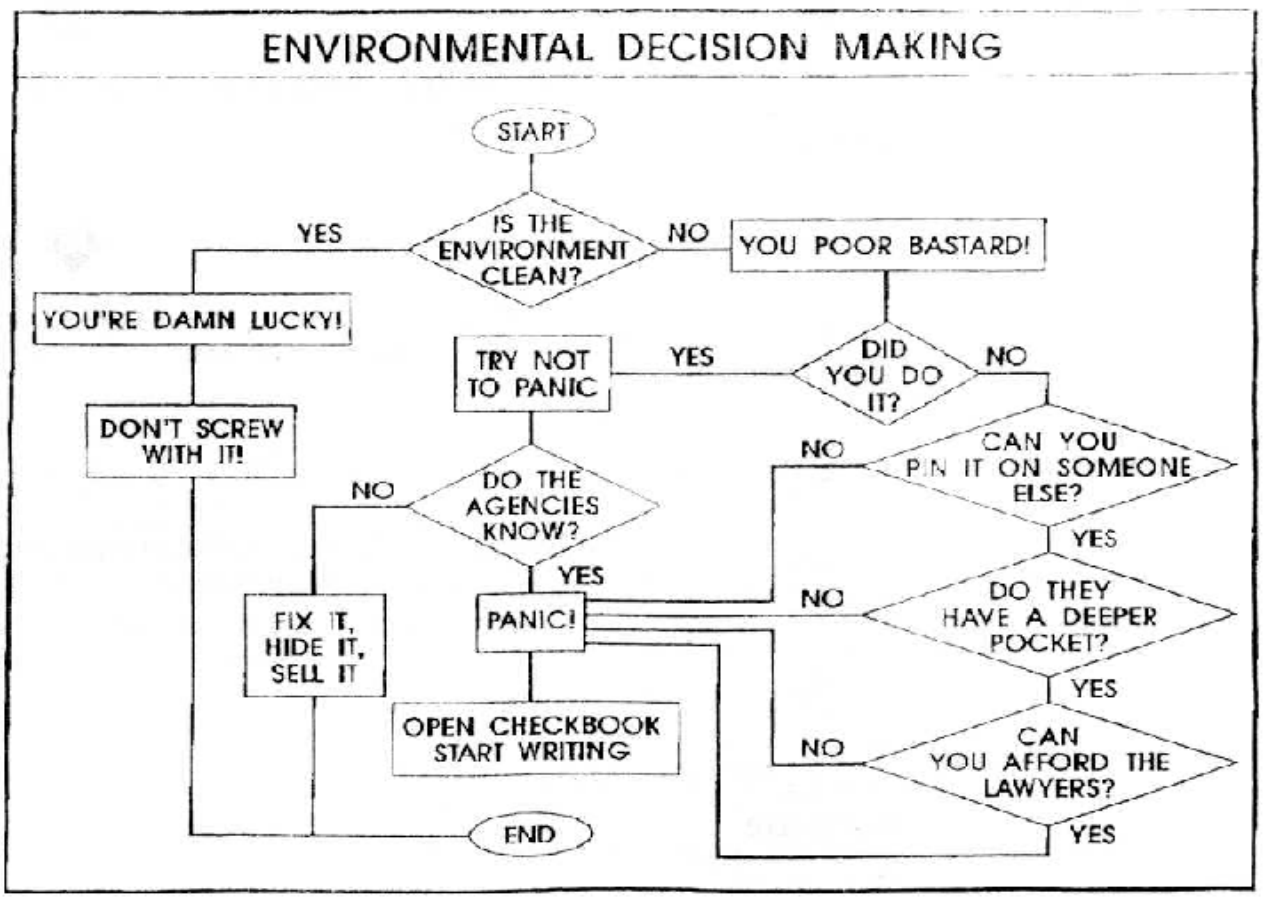
1 mg/m^2 on floors (carpeted or uncarpeted)

5 mg/m^2 on interior window sills (stools).

8 mg/m^2 on window troughs (the area where the sash sits when closed).

8 mg/m^2 on exterior concrete (1 mg = 1000 µg).

Environmental Decision Making



Environmental Decision Making

National Hazardous Chemicals Campaign
16-21 October 1995

Survey shows workers are not safe

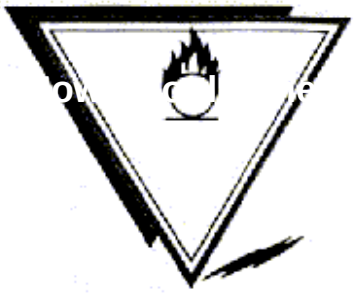
An ACTU survey of health and safety training course participants run by trades and labor councils across Australia during September indicates that the majority of workers exposed to chemicals at

- work do **not** know their rights and do **not** have adequate health and safety procedures.
- Out of 293 returned surveys, 85 per cent said they used chemicals at work.
- Of those who said they were exposed to chemicals at work. 63 per cent knew what the chemicals were, but 81 per cent did not know what safe exposure levels' existed for the chemicals used in their workplaces.
- 54 per **cent** of **employers had not** identified chemical hazards in the workplace.
- 55 per cent said they had health and safety procedures at work for the chemicals in their workplace, but only 26 per cent said all workers knew about them.
- 76 per cent said there was no chemical register in their workplace.
- 73 per cent **did** not **have access to** material safety data sheets (MSDS) on the chemicals in their workplace.
- 89 per cent of employers had not provided any training for dealing with the chemicals in their workplace.
- 80 per cent of respondents said -they would like more information on the chemicals they work with.
- And finally, 40 per cent of respondents said people they worked with had suffered from working with chemicals in their workplace through dizziness, skin rashes, headaches etc.

For more information please contact

Worklink Hotline 1 300 362223

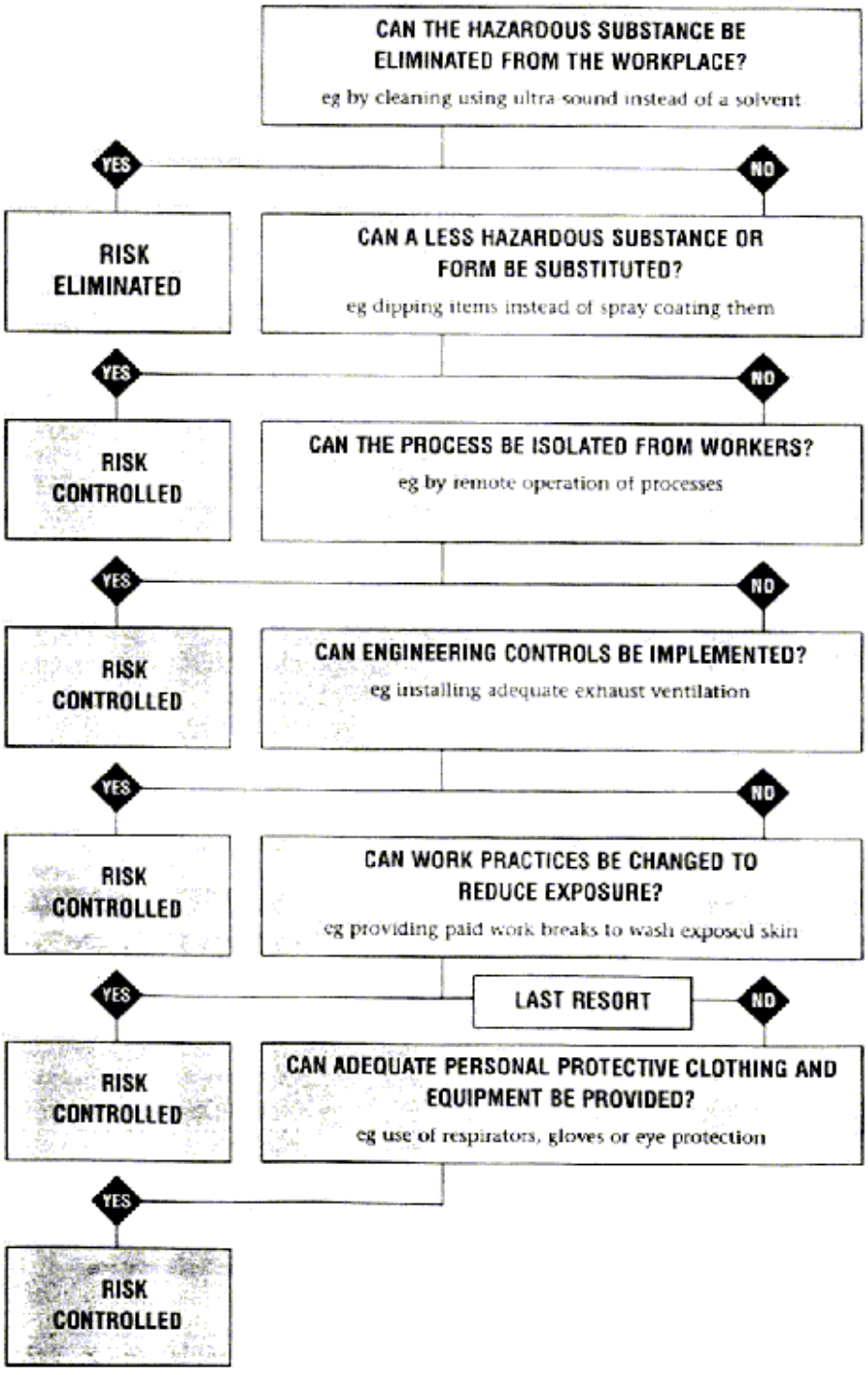
or Mandy Rossetto, ACTU Occupational Health and Safety Unit,(03) 9664 7310



EMPLOYERS MUST TAKE ACTION TO PREVENT EXPOSURE to hazardous substances at work, or if that is not practicable, to ensure that exposure is adequately controlled to minimise risks to health. You should ensure that these control measures are in accordance with ACTU policy.

HOW SHOULD THE RISKS OF HAZARDOUS SUBSTANCES BE CONTROLLED?

To do this, apply the hierarchy of control:



Hierarchy of Controls for Workers and Industry

by Sue Pennicuik, Environment Project Officer, Australian Manufacturing Workers Union

It is useful to compare the order of preferred controls for hazards to workers with the order of preferred pollution prevention measures involved in cradle to grave management of toxins. Sue Pennicuik presents the following "hierarchies of control" to workers.

Pollution Prevention Principles:

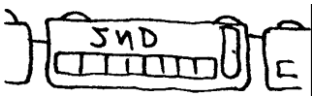
- for dealing with pollution in the workplace

Eliminate
Reduce
Repair / Re-use
Recycle on Site
Recycle off Site
Treatment
Disposal

Health and Safety Principles:

for dealing with hazards in the workplace

Design
Elimination / Substitution
Change the Process
Enclosure / Isolation
Exhaust / Ventilation / Extraction
Housekeeping / Maintenance
Administrative Procedures
Personal Protective Equipment



Lead workers - Second Class Citizens

by Theresa Gordon, NO LEAD, Newcastle, NSW

The 1994 National Standard and Code of Practice for the Control of Inorganic Lead at Work may be an improvement on the old one, but it is a disgraceful effort by Worksafe, which falls short of a protective health standard for all lead workers.

Worse still, it writes discrimination on the basis of sex into a national standard. If lead work is not safe for women of childbearing age, then it is also not safe for men.

Anti-discrimination considerations provide the opportunity to improve workplace health standards for all workers in the lead industry and this new standard is an inexcusable missed opportunity.

In June 1993 the National Health and Medical Research Council (NHMRC) set the goal for blood lead for all Australians to be less than 10 µg/dL (micrograms per decilitre). But this revised national lead workers standard allows blood lead levels up to 50 µg/dL for all men and for women who can prove that they are sterile (eg have had a hysterectomy), thus effectively banning women from lead work.

I have worked hard to clean up a dirty lead smelting industry in the Boolaroo Community near Newcastle, NSW and it needs to be pointed out that Australia enjoys the benefits of trade and employment from the lead industry, but is willing to bend society's morals and sacrifice the health of lead workers as if they were second class citizens.

Lead in Literature

My Father's First Christmas

by Rae Desmond Jones, born in Broken Hill in 1941.

My father's first Christmas
was in the year the Wright brothers
rose in their trembling kite
to burn gasoline scars across the sky
at Kittyhawk

when he was four the Titanic
plunged into the cold sea as the radio
bleeped out save our souls
but God didn't put on his headset

God slept deep while my father
played cricket in a dusty backyard
& the world dug into the dirt
as the lamps died over Europe & Empires
burned away like verey lights

when men came back without legs
my father waved a paper flag
& watched the way men hide fear
behind noble words & decided that
there were lies that he could not speak

when the gut dropped out of Wall street
my father walked to Adelaide with a sandwich
& sat in a park & watched strangers
in old army coats play silent chess
& ignore the cold

when the Japanese tapped at the door
my father stayed down in the mines where
he could not bear the screams above the indigestion
of the rumbling earth turning in a deep
discontented slumber

when men scrabbled at rocks
on the lovely white moon my father saw
the blue globe turn slowly
with nothing to hold It

by the time he knocked away the gas mask
& threw the final thrusts of his failing heart
against the metal of his deathbed
great jets were clotting the unclouded sky
& the diluted blue of my father's eyes denied
the arrogant detachment of his thought