



Lead issue update

Community reference group formed

A new advisory group has been formed in Esperance to create a conduit for information about lead and nickel contamination between the Government and the local community.

The Esperance Community Reference Group (ECRG) includes members from community groups LED and LEAF, the Shire of Esperance, State Government agencies and the Esperance Port Authority.

Michael Jackson, an environmental health specialist who has been appointed to coordinate the Government's response to lead and nickel contamination in the town, chairs the group.

Two meetings of the ECRG have been held. The formation of the group has been strongly supported by all attendees and the community.

Mr Jackson said the ECRG's terms of reference include providing a:

- Forum for information sharing between the community, the Shire of Esperance, the Esperance Port Authority and State Government agencies on strategies, actions and progress on remediation of Esperance;
- Conduit from the community and the Shire to the State Government on environmental and health matters of concern to the Esperance community; and
- Forum for officers of State Government agencies and the Esperance Port Authority to inform the community of progress in the remediation of Esperance and ensuring the ongoing protection of the local community.

Those invited to join the ECRG include:

- Two representatives from the Shire of Esperance;
- Community representatives including two each from LED and LEAF;
- Two representatives from the Esperance Port Authority; and
- Senior officers from the Departments of Health, Environment and Conservation, Employment and Consumer Protection, and Planning and Infrastructure.

The ECRG has had wide ranging discussions over many issues concerning lead and nickel contamination in the Esperance community including:

- Blood lead level testing and the health impacts of nickel;
- Cleaning of rainwater tanks, playground equipment, homes;
- Environmental sampling, including soils and swabbing inside and outside homes;
- The role of Coakes Consulting in conducting social impact and community consultation (see inside);
- The independent environmental and health risk assessment;
- The process for removal of the Magellan lead carbonate from the lead shed;
- Engineering improvements by the Esperance Port Authority;
- Communication strategies with the broader Esperance community including arrangements for the next information day; and
- The future of nickel exports through the Port of Esperance.

"In addition to this group, Coakes Consulting and I will be meeting with and talking to a wide range of groups and individuals within the Esperance community over coming weeks and months to open up the channels of communication and hopefully, begin a process of rebuilding trust for residents," Mr Jackson said.

"The ECRG will meet at least fortnightly for the foreseeable future, creating a genuine and transparent forum for communications between government agencies and the community.

"Members of the ECRG will also ensure that information received and discussed in the meetings is disseminated as widely as possible throughout the community."

Issue No.2
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Inside

.....
Blood lead level updates
.....

Community consultations
.....

Blood lead surveillance program
.....

Lead 'fingerprinting'
.....

Transport corridor noise concerns
.....

DEC lead contamination investigation
.....

Testing the transport corridor
.....

A letter to residents from Professor Alison Jones, the Professor of Medicine and Clinical Toxicology at the University of Newcastle, is also enclosed.

Professor Jones visited Esperance in early June and has informed the Department of Health (DOH) that she will be attending the public information day to provide fully independent information.

Public information day – 30 June, Esperance Civic Centre

The next public information day will be held on 30 June at the Esperance Civic Centre. Officers from the Government agencies responding to the Esperance lead issue, as well as Professor Alison Jones from Newcastle University and members of the Coakes Consulting team, will be available to talk to residents and answer questions between 9:00 am and 5:00 pm.

Lead issue update

Blood lead level updates

The table below details the most recent blood lead levels for Esperance community members.

Blood lead testing continues to be available from PathWest at the Esperance Hospital Monday to Friday from 10am to 3pm. No appointment is necessary.

The DOH will continue to send letters out letting people know their results, and support general practitioners in

following up new blood test results that are at or above 10 micrograms per decilitre ($\mu\text{g}/\text{dl}$), and children under five years with a blood lead level at or above 5 $\mu\text{g}/\text{dl}$.

These follow-ups assist with investigations and assess ways to reduce exposure to lead in these people.

Cumulative lead blood levels for Esperance community members ¹ 19 March to 11 June 2007				
Age group (years)	Number of tests	Average lead level (micrograms per decilitre)	Number with lead level in range 5 – 9 $\mu\text{g}/\text{dl}$	Number with lead level $\geq 10 \mu\text{g}/\text{dl}$ ** (values)
0 to < 5	345	3.2	74 *	7 * (11,12x3,13, 20, 22)
5 to < 10	234	2.4	19	0
10 to < 20	301	1.8	5	0
20 to < 40	535	1.9	24	3 (15,16,18)
Over 40	1307	3.1	197	21 (10x4, 11x7, 12x4, 13x3, 14, 16, 21)
Total	2722	2.7	319	31

¹ Community members only (individuals identified with occupational exposure to lead from the Port are not included in the table)

* Children aged 0 to < 5 years (81 children) with a blood lead level of 5 $\mu\text{g}/\text{dl}$ or greater will be followed up until levels have dropped on two consecutive occasions

** World Health Organisation (WHO) guidelines recommend blood lead levels < 10 $\mu\text{g}/\text{dl}$

Community consultations

The State Government has appointed Coakes Consulting to carry out a comprehensive community involvement and social assessment program with the Esperance community.

Coakes Consulting is an independent firm of social impact and community consultants.

The program, due to be completed in September/October, aims to better understand community perceptions of the lead issue in Esperance and other social/environmental issues relating to the port's operations.

The program will give residents an opportunity to raise issues that concern them and help identify strategies to resolve those concerns.

Members of the Coakes team have begun meeting with key stakeholders in Esperance and a random telephone survey of Esperance residents will be carried out in July to further obtain views from a broad cross-section of the Esperance community.

For further information about the program contact Karen Lamb (0417 454 727) or Erika Blockley (0411 696 610) from Coakes Consulting.

Blood lead surveillance program

Newsletter 1 discussed the importance of reducing exposure to lead dust, and provided information on how to minimise ongoing exposure to lead, particularly in children. It is also important to monitor the effect of this by ensuring blood lead levels are falling, not rising. In accordance with Professor Alison Jones' recommendations, a blood lead surveillance program will be implemented.

All children under five years of age with blood lead levels ≥ 5 micrograms per decilitre ($\mu\text{g}/\text{dl}$) will be offered a repeat blood test every three months, until two blood tests show a fall in blood lead level. If blood lead levels do not fall,

the individual and their family will receive further intensive follow-up and advice.

In addition, the surveillance program will offer repeat blood testing to pregnant women with a blood lead level ≥ 5 $\mu\text{g}/\text{dl}$ and all individuals with a level ≥ 10 $\mu\text{g}/\text{dl}$.

This program will be run by the DOH similarly to the initial lead testing clinic. Individuals will be contacted with details of the clinic and asked to make an appointment. The first clinic is being organised for mid-July. Please call 9020 8200 if you have questions about the clinic.

Lead 'fingerprinting'

Lead isotopic analysis, or fingerprinting, has been conducted by Professor Brian Gulson and Michael Korsch in NSW. Through a complex laboratory procedure, it has been possible to identify whether lead detected in blood is the same as Magellan Metals lead from Wiluna.

The isotopic signature for Magellan ore is highly distinctive, with no comparable signature in Australia that is currently being mined.

This has been extremely useful in confirming the source detected in blood samples from Esperance residents. Following is a summary of this information to date:

- 32 blood samples isotoped (a further 39 samples are still being processed)
 - 22 children aged under five years
 - 17 with blood lead level ≥ 5 $\mu\text{g}/\text{dl}$, two between 3-5 $\mu\text{g}/\text{dl}$, and three with blood lead level ≤ 2 $\mu\text{g}/\text{dl}$ (for background/comparative, internal quality assurance issues)

- 10 adults (age ≥ 35 years)
- In children:
 - The contribution of lead in the blood of children under five years of age from Magellan ore ranges from 30-87% (using maximum values for Magellan contribution).
 - Of the 19 children with a blood lead level ≥ 3 $\mu\text{g}/\text{dl}$, the vast majority (16/19 or 84%) show at least a 50% contribution from Magellan.
 - For most of the young children, removing the contribution of Magellan ore leaves residual levels of lead of 1-3 $\mu\text{g}/\text{dl}$. (That is without exposure to Magellan ore we would expect

the majority of levels recorded in these children to be between 1-3 $\mu\text{g}/\text{dl}$).

- If a significant contribution to lead comes from non-Magellan sources then further investigations will be conducted with the family to ensure all ongoing exposures to lead are reduced. Other sources of lead exposure for children can include old house paint, marine paints and lead batteries.

- In adults:
 - The contribution of lead in the blood of adults came from a variety of sources.

Transport corridor noise concerns

Noise from the transport corridor – in particular from trains entering and leaving the port – has been raised again as a concern by some residents.

The Department of Environment and Conservation (DEC) recommended to the Environmental Protection Authority in 2000 that a port facility upgrade and increase in iron ore exports be formally assessed for noise impacts. A similar recommendation was made in 2005, during a further proposed iron ore export increase.

EPA Bulletin 1184 (published in July 2005 and available for viewing on www.epa.wa.gov.au) sets out how the Authority assessed the impact of rail noise and some of the options for addressing it.

The Department for Planning and Infrastructure established the Esperance Port Access Corridor Working Group in 2005 to investigate options to reduce the impact of noise. DEC is represented on this group.

DEC lead contamination investigation

DEC is continuing to investigate the cause of lead contamination in Esperance to see if there have been breaches of the Environmental Protection Act.

The investigation is being carried out by DEC's Environmental Enforcement Unit (EEU) with support from staff in the Department's Albany and Esperance offices.

The EEU's role is to investigate objectively and impartially major environmental incidents, to the high standard demanded by the courts, and determine the cause and the persons or organisations responsible.

The EEU draws on the considerable expertise of its officers who collectively have diverse investigative backgrounds in policing, government compliance and law.

EEU investigators began monitoring what was happening in Esperance when the initial bird deaths were reported late last year.

Following testing that identified the likely cause of the bird deaths, the EEU's role escalated to a full investigation involving the collection and assessment of information from community members, obtaining statements, recording photographic, video and documentary evidence and the collection and forensic analysis of samples.

EEU director Stuart Cowie said many members of the Esperance community had already been interviewed and provided important information to the investigators.

He thanked the people of Esperance for their assistance and continuing support for the investigation.

Mr Cowie advised that the investigations were planned to continue over the next several weeks.

Testing the transport corridor

The DOH has recently engaged the services of relevant local governments to undertake sampling of rain water tanks attached to buildings along the transport corridor between the Magellan mine site and Esperance.

Sampling has already begun in some areas, and results are expected to be available at the next public information day on Saturday 30 June.

DEC's Pollution Response Unit has also begun screening for heavy metals along the Esperance-Wiluna transport route.

PRU staff are using a portable Niton heavy metal XRF analyser to screen at town sites along this route as well as the road stops between Wiluna and Leonora.

The testing will determine whether lead or nickel dust has fallen from trains and trucks travelling to Esperance.

Where the Niton scans detect elevated readings, soil samples will be taken for further testing by the WA Chemistry Centre.



DEC officer using a hand held meter during preliminary testing for contamination along the rail line.

Further information

Mr Michael Jackson, who is coordinating the Government's response to lead and nickel contamination in Esperance, can be contacted on 9071 0626. Further information is also available on the DOH website at www.health.wa.gov.au and DEC's website at www.dec.wa.gov.au





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ESPERANCE LEAD – A TOXICOLOGIST'S VIEW

Hello Everyone,

Can I introduce myself? I work for the University of Newcastle as a clinical doctor in medicine and clinical toxicology. Clinical toxicology colleagues from WA asked me to come to Esperance and advise on lead issues because of my previous experience in London in this field of clinical practice. I have taken the opportunity to come to Esperance and had very interesting discussions with community members, those with children with levels of and above 5 microgram/dl and health care professionals. I also visited the Port Authority and Public Health physicians. I will be returning to Esperance on June 30th at the open day, so will happily answer questions for you to the best of my ability at that time. I will also be in Esperance and available to advise you, when the results of the next set of blood tests are available, after they have been tested in mid-July.

My role is to use my clinical toxicology knowledge and experience to help the people of Esperance. I receive no fees from anyone for this work just my normal salary from the University.

Blood testing

There is still benefit in getting children 0-5 years tested for lead, as they will be placed on the surveillance program if they have levels of and over 5 microgram/dl. Blood samples are still being taken at the pathology centre at the hospital without a doctor's referral. Current lead levels of the population in Esperance are not alarming. They are for example at the level of those of London taxi drivers. However, I am not complacent and we need to work hard together to get the lead levels down for everyone. Those I am most keen to see have reduced lead levels are children and pregnant women because of the sensitivity of the developing human brain to lead.

Pregnant women and children 5 years and under, with levels of and greater than 5mcg/dL, will be put into the surveillance program which involves 3 monthly blood tests (next ones due in mid July 2007) to ensure that the levels are reducing. If levels do not reduce in an individual child, help will be provided to track down the source of continuing lead exposure and reduce it. I expect the levels to reduce over the next months as long as we reduce ongoing exposure. If your child looks pale it is worth checking with your GP if they need a test for anaemia as there is benefit of giving iron to a child who is anaemic (but, note NOT unless they are anaemic).

Reducing ongoing exposure to lead

Important measures to put in place are

1. wet wipe all dusty surfaces in the house. If there is dust in the house assume there is lead (and nickel) in it. High phosphate detergents are ideal, though not absolutely necessary.
2. wash hands before eating, particularly after children have been playing outside
3. leave shoes outside
4. use HEPA vacuum cleaner to vacuum carpets
5. drink only tap water (this has been tested and has negligible lead). DO NOT DRINK FROM YOUR RAIN WATER TANK.

Treatment

No chelation treatment is recommended at the levels being detected in the population of Esperance. A broad based diet with adequate nutrients (particularly iron, calcium and vitamin C) is recommended. Iron supplements are not recommended unless an iron deficiency has been found, as too much iron will actually increase lead absorption.

Chelation therapy is only recommended at blood lead levels at or above of 45mcg/dL. When chelation therapy is used at levels of 22-45mcg/dL studies have shown there is no neurobehavioral benefit. Also chelation therapy has adverse effects associated with it- liver problems, it presents more lead to the kidneys which can damage them, and it also removes other good ions (such as iron, zinc and copper) from the body which can cause problems.

Natural chelation remedies are not recommended for 2 reasons

1. there is no clinical evidence showing they work
2. if they are effective, they will have the same problems as chelation therapy (i.e. kidney damage by presenting higher concentrations of lead to the kidneys)

Breastfeeding

At the sorts of levels of blood lead that the population has in Esperance, we are not going to routinely advise mothers to stop breast feeding. Individualized advice is available from local GPs and family centres, and the Australian breastfeeding association.

Environmental sampling

I have requested that information be made available on screening test done at play areas in Esperance so you can judge where your children can play most safely. I have also requested that information be made available on the extent of dust contamination i.e. just how big an area is included in the lead Esperance problem?

Follow up

Around mid July a repeat blood test of all children and pregnant women with levels of 5 microgram/ dl and above will be performed by the DOH at the hospital clinic. It is important that all children with elevated levels are monitored by GP's and teachers to ensure that their milestones are reached. Teachers need to be made aware to look out for this and to ensure children wash their hands before lunch.

A 2003 study (Canfield et al, 2003) has shown that IQ can be affected at levels lower than 10mcg/dL, so it is important to follow children aged 0-5 years with levels greater than 5mg/dL. The effect is only minimal on IQ, and in the general population will not be noticeable. The critical thing is that we work together to reduce the lead levels in children and pregnant mothers.

How to contact me.

I work on many different sites, both university and clinical sites and so the best way to contact me is probably by email at alison.jones@newcastle.edu.au. I shall be interested to hear of your comments and questions. Please understand that I am trying to do my best to help and support you and explain the science and medicine behind all this – I will not be perfect in this role so you will need to bear with me!

Best wishes



Professor Alison L Jones
Professor of Medicine and Clinical Toxicology