



5 April 2007

BACKGROUND BRIEFING PAPER

LEAD IN THE MOUNT ISA COMMUNITY

1. Purpose

The purpose of this briefing paper is to:

- explain the background to the issue of lead in the Mount Isa community;
- detail the steps Xstrata's Mount Isa Mines operations are taking to help the Mount Isa community manage the risks associated with living in a highly mineralised area; and
- outline Mount Isa Mines' initiatives to manage and reduce emissions from the Mount Isa copper and lead smelters.

2. Background

Queensland Health began routinely testing local children's blood lead levels in Mount Isa in 1990 when a number of children were found to have high blood lead levels. This prompted a joint effort by Mount Isa Mines, the Queensland Government CHEM Unit, and the Mount Isa City Council (MICC) to remediate community areas contaminated by lead. Testing continued once remediation was complete, as did a public health campaign about reducing exposure to lead. During the 1990s tests showed improvements in children's blood lead levels and Queensland Health ceased routine testing in 1999. However, Xstrata continued to provide free blood lead testing service for Mount Isa residents.

The issue of lead in the Mount Isa community gained prominence outside Mount Isa in June 2006 when a Queensland Environmental Protection Agency (EPA) manager told *The Australian* newspaper that children's blood lead levels in Mount Isa were not being monitored closely enough.

In September 2006 Queensland Health commenced a campaign, *Get Bled for Lead*, to test the blood lead levels of 400 Mount Isa children aged one to four to obtain a statistically relevant sample of blood levels in this age group.

In December 2006 and March 2007 Macquarie University environmental scientist Dr Mark Taylor released findings of his study into metal concentrations in local soils to national media. The results showed a number of areas with high lead content in local soils. However, it is also unclear whether Dr Taylor's samples were taken in residential areas or in

recreational areas. This is relevant as different concentrations of lead in soil are allowed for these different types of areas under the Queensland Contaminated Lands Guidelines. Dr Taylor's research has now been provided to the EPA.

3. Blood lead testing of Mount Isa children – results to date

By the end of March 2007 Queensland Health had tested 251 children aged between one and four-years-old. This age group is considered to be most 'at risk' from prolonged exposure to high lead in blood levels. Of those tested, 23 have blood levels above the World Health Organisation (WHO)-recommended limit of 10 micrograms per decilitre (10µg/dl). Of those, six children have levels above the Queensland notifiable level of 15µg/dl, although still less than 20.

Queensland Health is also running a substantial lead in blood awareness and education program in Mount Isa community to reduce the risks of exposure to lead in the community. Xstrata is supporting this program by providing information to its employees and their families. Queensland Health is expected to release a Lead in Blood Fact Sheet, hold a Family Fun day to "get bled for Lead", and re-establish Wednesday night testing (ongoing until the 400 target is achieved) in May.

Xstrata is also trialling an alternative method of taking blood lead samples. If effective, this capillary sampling technique (finger prick) may encourage more parents to bring their children forward for testing. It is possible that the slow uptake rate for the current blood lead tests is caused by parent's reluctance to submit their children for a venipuncture tests whereby blood is drawn from the vein.

4. Lead in the Mount Isa community – legacy issues

In the early 1990s Mount Isa Mines removed and remediated areas of the Mount Isa community where historical lead contamination had occurred from the 1940s onwards. This contamination was caused by a leak from a process water dam, practices of allowing stormwater to discharge from the minesite and practises of using fill from the minesite in the community. Apart from one discharge point, located at Death Adder Gully which releases stormwater in high rainfall events, these practices have long since been discontinued. This is indicative of the changes in industry and community awareness of appropriate environmental management that occurred over the course of the last century.

In 1990 and 1991 an area adjacent to the operation, approximately 1.5 kilometres long and within 1 kilometre of the lease boundary, was cleaned up in a joint effort between the Queensland Government CHEM Unit, the Mount Isa City Council (MICC) and Mount Isa Mines. These were done by 'cut-and-fill' techniques with follow up sampling. In some cases this required the purchase of private properties. There had long been an initiative to purchase properties within 500 metres of the smelters. Areas that were remediated were returned to a state suitable for public open space and handed over to the MICC.

5. Living in a mineralised area

Mount Isa lies within a highly mineralised area. Lead occurs naturally within local soils across the region. Outcrops of lead-based minerals occur within the landscape and were, in fact, what led to the discovery of the great Mount Isa ore bodies in 1923 by prospector

Campbell Miles. Therefore, when considering the issue of managing the risks associated with lead in the Mount Isa community, it must be acknowledged that lead is a naturally occurring substance in the local area.

6. Managing lead in the community

The National Pollutant Inventory

The National Pollutant Inventory (NPI) is an initiative of the Federal Department of the Environment and Water Resources. It is an Internet database that contains information relating to the emission of 90 substances from industrial facilities and diffuse sources. In February 2007 Mount Isa Mines was reported as being a top emitter of sulphur dioxide, lead, copper, zinc, cadmium, arsenic and antimony during 2005/06.

Mount Isa Mines routine environmental monitoring and reporting

Xstrata's Mount Isa Mines carefully manages its emissions from the mine, and consistently operates within the licensed limits for emissions' standards set by the EPA.

Apart from personal hygiene, safe drinking water and air quality are the most important factors in ensuring Mount Isa is a safe place to live. Rigorous monitoring programs of water and air quality in Mount Isa have been in place for decades. Mount Isa Mines routinely performs extensive environmental monitoring within the Mount Isa community. The company works closely with the EPA to manage its monitoring program and all aspects of its environmental performance, including heavy metal management. Results are also reported to the Agency to ensure they meet the various environmental standards and legislative requirements. Results are reported to the community in the company's annual sustainability reports. These can be downloaded from the Xstrata website:

http://www.xstrata.com/assets/pdf/xcu_sus_%20mountisa_2005.pdf.

Five high-volume samplers scattered throughout the community monitor levels of respirable lead, cadmium and arsenic (particles small enough to be breathed in) in the air. Lead levels are consistently well below the Mount Isa Mines licence limit of 1.5µg/m³.

The Mount Isa Water Board conducts frequent sampling and analysis to ensure the drinking water supply for Mount Isa meets Australian potable drinking water standards.

Working with the Queensland EPA

Xstrata is working closely with the Queensland EPA on the issue of reducing risks of lead exposure in the Mount Isa community and on all aspects of the company's environmental management activities. Current and recent actions include:

- working together on a review of potential for community exposure to lead in the Mount Isa area, and if risk exists developing a management strategy;
- working together to review emissions from the Mount Isa Mines operations; and
- a compliance audit of Mount Isa Mines was completed in October 2006 where regulatory requirements were checked for compliance.

Land, Water, Air Emissions Study into Human and Ecological Risk

Mount Isa Mines has commissioned a study to assess the major sources of non-natural forms of lead in the Mount Isa community and assess whether these are associated with mine operations and their risk to human and ecological health. This *Whole of Emissions Study* will be conducted by renowned toxicologist Associate Professor Barry Noller who is

providing consultancy services through the Centre for Mined Land Rehabilitation which is part of the Sustainable Minerals Institute based at the University of Queensland.

The study will be completed in a consultative process with regulators and the MICC. Mount Isa Mines will also work with these groups to address recommendations that arise from the study on managing lead in the community. It is expected that initial results from the study will be available in by mid 2007. Mount Isa Mines will release an executive summary of the study to regulators, the community and media.

Community Engagement

Mount Isa Mines is working closely with the Mount Isa community to provide information on this issue and to help manage the risks associated with lead in the community. Actions have included:

- a community briefing session;
- supporting the Queensland Health blood lead testing program;
- providing information on the issue to our employees and their families; and
- Working closely with the MICC, the EPA and Queensland Health to inform the local community.

It is anticipated that Xstrata, Queensland Health, the EPA and Mount Isa City Council will hold a joint community briefing session in late May.

In addition, Xstrata reports information about emissions at company community information sessions which are held four times a year. Environmental monitoring results are also reported in the company's Sustainability Reports:

<http://www.xstrata.com/sustainability/publications/site>.

The Greenbelt Project

The Greenbelt Project was established in 2000 to develop a rehabilitated buffer zone of woodland between the Mount Isa operations and the community. The greenbelt both improves the aesthetics of the town and is helping to reduce the impact of Mount Isa Mines' past and present operations on the local community. Tens of hectares have been rehabilitated at a cost of more than \$3 million. The greenbelt continues to be developed with an ongoing annual budget of \$500,000 for rehabilitation as more land becomes available when leases expire.

7. Mount Isa Mines – emissions reduction initiatives

Mount Isa Mines is continually striving to improve its environmental performance with major improvements to the copper smelter and lead smelter being implemented.

Great improvements have been made in recent years in reducing emissions from the company's copper smelter. Capture and treatment rates for copper smelter emissions are currently around 85%. Other initiatives are in place to further improve capture and treatment of copper smelter emissions to achieve a 95% capture and treatment rate. Between 2005 and 2006 Xstrata spent more than \$16 million to reach this target. Improvements to converter hooding and ventilation in the copper smelter have been installed, and improvements to cooling systems on the blast furnace made. Xstrata has also upgraded existing baghouses that are used to capture dust emissions.

The lead smelter has achieved a 17% reduction in air emissions since 2000. Xstrata Zinc completed a pre-feasibility study in 2006 to determine the potential to implement its ISASMELT technology at the lead smelter to achieve further reductions in emissions and this year will examine a number of other options to reduce emissions.

Furthermore, a Smelter Project Team for the Mount Isa operations is being formed to determine a program for additional emissions capture initiatives.

8. Managing lead in the workplace

Mount Isa Mines has a comprehensive program in place to manage the risks associated with lead in the workplace. The program includes blood lead testing of employees, preventative work practises, education, and the use of various technologies and equipment to reduce emissions and exposure to lead. For example:

- strict clean in / clean out policy for our workers;
- the compulsory wearing of respirators in certain areas of our operations;
- it is a condition of employment with Mount Isa Mines that all workers participate in the blood lead monitoring program;
- internal procedure, forms, educational materials and training are in place to reduce lead exposure;
- currently venipuncture (needle drawn blood) is used to take samples, however alternative method of capillary sampling is being studied (trial started on Monday 26 March);
- in excess of 900 blood lead samples (average) are taken and analysed each month;
- results are analysed and employees with high levels are removed from the work area where exposure occurred until levels reduce. These levels are below the NOHSC Standard;
- a study of 10434 results over the last 15 months shows a statistical average of 11.5 ug/dL for males and 5.15 ug/dL for females; and
- there have been 43 instances of NOHSC reported elevations since 1998, however the last five years show significant improvement ie. 1998/2002 - 32 reported instances and 2003/2007 - 11 reported instances.

Further questions on this matter should be directed to Sue Sara, General Manager Corporate Affairs and Social Responsibility Qld/INT – Xstrata on (07) 3295 7535 or Melanie Edgar, Manager Community Relations North Qld – Xstrata Copper on (07) 4744 2832.