



Mount Isa Mines  
Employee Lead Information Guide

July 2010





Xstrata Mount Isa Mines' zinc-lead operations has in place a 'Site Use Only' clothing policy, which reduces potential hygiene risks for workers on-site and the Mount Isa community



Xstrata Mount Isa Mines conducts personal dust monitoring on-site



Recycled process water is used to hose down and recover fine lead dust at the lead smelter

## At Xstrata Mount Isa Mines the health and safety of our employees and the Mount Isa community is our highest priority

### Our operations

Xstrata Mount Isa Mines has comprehensive programs in place to manage and minimise occupational exposure to lead and other contaminants. We also have a strict 'clean in/clean out' policy to minimise the risk of lead and other contaminants being taken into the community.

Lead exists in a number of our mine's work areas. Under the Mining and Quarrying Safety and Health Regulations, Xstrata Mount Isa Mines and our employees have obligations to minimise lead exposure. You can help by following the health and safety expectations specific to your work area. Together we can ensure Xstrata Mount Isa Mines is a safe and rewarding place to work.

At Xstrata Mount Isa Mines, zinc-lead-silver ore is mined from Black Star Open Cut Mine, Handlebar Hill Open Cut Mine, and George Fisher Underground Mine and then processed to produce crude lead and zinc concentrate.

Lead is found in a variety of commonly used products. About 65% of all lead produced is used to make lead-acid batteries for vehicles. Lead is also used in televisions and computer screens to protect us from radiation, cable sheathing, solder, lead based paint and in ceramics.

### How lead is absorbed into the body

Lead can be absorbed into the body through two main pathways:

- **Inhalation:** Lead may be absorbed through the lungs by breathing fine particles of dust or fumes containing lead.
- **Ingestion:** Lead may be absorbed through the stomach and intestine after it enters the digestive systems. This can occur, for example, through eating or smoking with dirty hands, biting nails or eating contaminated food.

Smoking increases a person's absorption of lead due to:

- Hand to mouth activity; and
- Cigarettes and tobacco contain minor amounts of lead.

Smoking on-site is restricted to approved, designated areas only.

### How can lead potentially affect your health?

If the level of lead in your body gets too high, it can cause:

- headaches;
- tiredness;
- irritability;
- constipation;
- nausea;
- stomach pains;
- anaemia;
- loss of weight.

Continued uncontrolled exposure to lead has the potential to cause more serious symptoms such as:

- kidney damage;
- nerve and brain damage.

Of course, these symptoms can also be the result of reasons other than lead exposure.

If you are a woman capable of having children you should take special care to follow good work practices and a high standard of personal hygiene.

### Occupational exposure to lead

Potential sources of lead exposure in your occupational settings include:

- Working at the Black Star Open Cut Mine, Handlebar Hill Open Cut Mine, George Fisher Underground Mine, and the Zinc Lead Concentrator and Lead Smelter;
- Some areas of copper processing;
- Some laboratory work when dealing with lead samples and fire testing; and
- Maintenance activities on equipment that has operated in lead process areas.

### Minimising lead exposure at work

Your exposure to lead will vary depending on your work area. Before commencing work, your supervisor will provide you with specific details about the protective measures relating to your area.

To help minimise your lead exposure while working on-site, you are required to adhere to the following rules:

- All personnel working in lead risk areas are required to follow the 'clean in/clean out' policy. That is, no dirty work clothes are to leave the site and everyone working in these areas must shower before going home.

- Wear a respirator in areas as instructed.
- Adhere to crib room procedures in your department.
- Use the automatic over-shoe cover dispenser in areas as instructed.
- Only smoke in approved and designated smoking areas.
- Do not eat or chew in lead risk areas, and only drink from protected sources (e.g. designated water coolers).
- Do not use compressed air or dry sweeping for cleaning in lead risk areas.
- Do not tamper with engineering controls (e.g. fans, ducts etc). These have been designed to lower your lead exposure.

Other ways of minimising lead exposure include:

- Not biting your fingernails.
- Practicing good personal hygiene, including washing your hands and face before eating or smoking, and showering at the end of your shift.
- Maintaining a balanced diet.

## Managing lead exposure

All employees at Xstrata Mount Isa Mines are required to have regular blood tests for lead. The frequency of this testing will depend on the area you work in, the tasks you perform, your gender, and the results from your last blood test.

We have established blood lead level limits at which employees will be removed from a lead exposure job and appropriate levels at which they can return to normal duties. These blood lead level limits, in micrograms per decilitre (µg/dL), and other medically relevant factors are outlined in the table below.

For your health and safety we apply stricter blood lead removal limits than the Australian national standard of 50 µg/dL. The health effects of elevated blood lead levels are considered more serious for young children so the blood lead limits set for females of reproductive capacity, and for pregnant and breast feeding females are lower than for males and females not of reproductive capacity.

### Xstrata Mount Isa Mines workplace blood lead risk, removal and return limits

Gender category	Lead risk at or above blood lead (µg/dL) <sup>1</sup>	Removal at or above blood lead (µg/dL) <sup>2</sup>	Return below blood lead (µg/dL)
Female – P/BF (Pregnant or breast feeding)	15	12 or immediate if in lead risk job	10 <b>and</b> pregnancy and breast feeding complete and medical indicators satisfactory
Female – RC (Of reproductive capacity)	20	Three scheduled consecutive results ≥ 18 Immediate if a confirmed result ≥ 20	10 <b>and</b> medical indicators satisfactory
Male and Female – NRC (Not of reproductive capacity)	30	Three scheduled consecutive results ≥ 35 Immediate if a confirmed result ≥ 40	30 <b>and</b> medical indicators satisfactory
Male – Lead Smelter Only	30	Three scheduled consecutive results ≥ 35 Immediate if a confirmed result returns ≥ 38	30 <b>and</b> medical indicators satisfactory

<sup>1</sup> A job is considered to be 'lead risk' if there is potential for the blood lead level of the person doing the job to rise to this level.

<sup>2</sup> Mount Isa Mines removal limits are set below the Australian national standard. If this blood lead level is reached then the individual will be removed from the lead risk job.



All Xstrata Mount Isa Mines employees are required to have blood tests at varying frequencies to provide an accurate measure of a workers' blood lead levels

## Lead in blood testing

We have several blood lead clinics on-site that conduct regular blood testing. These centres are run by our medical provider, Gemini Medical Services. Gemini nurses will conduct the lead in blood testing and report your results through SiteSafe, our on-site management system.

Safety Advisors from your department will meet with you to explain your blood lead result and any health implication. If you have an elevated blood lead result, you will be placed on a Lead Management program that will identify actions to be taken to reduce potential exposure in the future. The effectiveness of this Lead Management program will be measured by periodic blood lead tests.

## Minimising lead exposure at home

While lead is present in the region naturally and from industrial activities, there are some simple measures we can all take to reduce our exposure.

Families living in Mount Isa should ensure their children maintain a balanced diet, including

calcium, iron and zinc, wash children's hands and faces before they eat or sleep, use a wet cloth for dusting, and mop the house instead of sweeping.

Families should also consider moving children's play areas away from bare soil and put grass or plants over bare areas of dirt. It is important to keep children's dummies and toys clean and wash pets regularly.

If you are living in a home built before 1970, check for peeling or deteriorating paint as it may contain higher levels of lead. Also, take care if you are renovating a house built before 1970 for the same reasons.

Xstrata offers a free, independent and confidential blood lead monitoring program for all Mount Isa residents through Queensland Medical Laboratory (QML). If you or any members of your family have any concerns about lead in blood levels we encourage you to take advantage of this service which is available daily from 7.30am–2.00pm (Monday-Friday), from the Queensland Medical Laboratory located at 13 Isa Street, Mount Isa. Telephone (07) 4743 4299.



Wheel washes clean vehicles as they leave the site to minimise the transfer of lead into the community

### Managing lead in the community

Xstrata takes the issue of lead in the Mount Isa community seriously.

Since acquiring Mount Isa Mines in 2003, Xstrata has invested in excess of \$250 million on over 150 environmental initiatives. We are also monitoring and further reducing emissions from our copper and lead smelters through our Smelter Emissions Project.

In addition to our compulsory clean-in/clean-out change house facilities for all employees and contractors working in lead exposure areas, we have automatic wheel washes that clean vehicles leaving the site to reduce the risk of lead being taken into the community. We also have an on-site fuelling station and servicing facility to limit the need for light vehicles to leave the mine site.

Mount Isa has the most intensive air quality monitoring system of any city in Australia. The Air Quality Control (AQC) system, first introduced in 1975, is a comprehensive monitoring system that incorporates 15 monitoring stations throughout Mount Isa to monitor ambient air quality levels. This AQC system is also used to direct operations at our copper and lead smelters and Incitec Pivot's acid plant to reduce or shut down when ambient air levels in town approach regulated limits.

Xstrata is proud of its record of never exceeding limits for respirable lead at any air monitor in the Mount Isa community since acquiring Mount Isa Mines in 2003.

In 2009, the Queensland Department of Environment and Resource Management installed an Ambient Metals Monitor in Mount Isa to provide information on the level of metals in air.

In 2006, Xstrata Mount Isa Mines commissioned the University of Queensland's Centre for Mined Land Rehabilitation to conduct a Lead Pathways Study. This independent study is assessing potential pathways of lead into the Mount Isa community through land (Phase One), air (Phase Two) and water (Phase Three) and any potential risk to human and ecological health from the mine's operations.

In July 2009, Phase One (Land) report of the Lead Pathways Study was released, which concluded that the risk to human health from historical mine sediment is low. While the preliminary findings indicated a low risk to human health, Xstrata Mount Isa Mines invested \$2.7 million on remediation works to remove around 160,000 tonnes of soil containing historical mine sediment from the Leichhardt River and surrounding area.

The results from each phase of the Lead Pathways Study will be independently peer-



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Xstrata takes the issue of lead levels in the Mount Isa community seriously

Since 1993, Xstrata Mount Isa Mines has offered a free, independent and confidential blood lead monitoring program for all Mount Isa residents.

If you, or any other Mount Isa resident, would like to use this service please contact:

**Queensland Medical Laboratory**  
13 Isa Street, Mount Isa.

Telephone: (07) 4743 4299

Monday–Friday: 7.30am–2.00pm

reviewed. Should the results show a need for corrective action, then we will take immediate steps to address the study's recommendations.

Xstrata Mount Isa Mines is continuing to work with local and State Government to educate the Mount Isa community about living safely with lead. In December 2007, we joined Queensland Health, the Department of Environmental and Resource Management (DERM), the local State Member of Parliament and the Mount Isa City Council to form the Living with Lead Alliance.

The aim of the Alliance is to provide people in Mount Isa with the information they need so they can put in place simple measures that help them stay healthy in an environment where lead occurs.

For more information on Living with Lead Alliance initiatives and activities, contact 1800 457 547, or visit [www.livingwithlead.com.au](http://www.livingwithlead.com.au)



**MOUNT ISA  
MINES**

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