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XSTRATA MOUNT ISA MINES: LEAD PATHWAYS STUDY

Xstrata Mount Isa Mines is committed to environmental leadership and the health and safety of our employees and the community in which we operate.

Xstrata Mount Isa Mines has a comprehensive sulphur dioxide and dust monitoring network that measures emission levels in the community at all times and is used to control site operations accordingly. The company operates well below the Queensland Environmental Protection Agency (EPA)'s limits for lead in air.

Since acquiring Mount Isa Mines in mid-2003, Xstrata has spent over \$200 million on more than 80 environmental improvements. These include monitoring and further reducing emissions from our copper and lead smelters, including commissioning the Smelter Emissions Project. We are also continuing safety procedures on-site to minimise our employees' exposure to lead and to reduce the risk of lead being taken into the community.

In late 2006, Xstrata Mount Isa Mines commissioned world renowned toxicologist, Associate Professor Barry Noller from the University of Queensland's Centre for Mine Land Rehabilitation (CMLR) to conduct a *Whole of Emissions Study* which has now evolved into the *Lead Pathways Study*.

Associate Professor Noller and his team is enabling Xstrata to better understand the potential pathways of lead into the community and any potential risk to human and ecological health from its mine operations to land (phase 1), air (phase 2) and water (phase 3). Noller's study will be independently peer reviewed.

Phase I: Land

Between April and August 2007, the CMLR undertook a study of emissions to land in the Mount Isa and Leichhardt River area. The purpose of the study was to assess the effectiveness of remedial works of the river between 1991 and 1994. These works were undertaken to remove sediment from historical mining practices. This review and subsequent remedial activities had been committed to regulatory authorities as part of our 2005 – 2010 operational plan.

A summary of these activities was made available to the community in November last year. The community briefing paper is available at

www.xstrata.com/assets/pdf/071128_mtisa_community_briefing_paper.pdf

Initial results indicate these previous actions to remove contaminated material have been successful. Even though the CMLR identified the potential risk to human health to be minimal, Xstrata Mount Isa Mines completed the second stage of the Leichhardt River Remediation Project in June 2008 at a cost of around \$1.5 million as part of our ongoing commitment to the health and safety of the people of Mount Isa.

Verification sampling will be undertaken in the second half of 2008. If it shows any remaining historical mining sediments, with potential to contribute to elevated lead levels, the material will be removed in 2009.

The Report on Phase 1 will be finalised, including having been through a peer review process, by the end of 2008.

The CMLR will undertake ongoing sampling and analysis after each wet season for the next three years to ensure that no further contaminants remain; as the natural erosion process in the Leichhardt River could result in further material being exposed.

The project team will also continue to further assess the land surrounding the river.

Phase II : Air

The second phase of the project commenced in January 2008 to investigate potential sources of dusts, their *signatures* in terms of lead make-up, which can be linked to potential sources, and the potential risk to human health.

Lead in the air can enter the body either by inhalation or ingestion. The risk to human health is not directly related to the amount of lead ingested or inhaled but the bioavailability of the lead. Bioavailability refers to the percentage of lead which the body will actually absorb. The studies being undertaken have therefore had a strong emphasis on bioavailability.

Dust samples which have been captured as part of the study are to be analysed this year using X-ray Synchrotron technology in Japan. In the second half of 2008 samples will be taken from additional fallout collectors in the Mount Isa community and compared with the results from the mine materials. This will enable the source of lead from the mine, potentially contributing to lead in air, to be identified.

The sampling program will continue for at least a year to ensure a representative sample is obtained. This will include the period between November 2008 and March 2009 when there is a higher frequency of winds blowing from the operations in the direction towards the community.

Preliminary sampling is currently being undertaken on dust from floors, window sills, roofs and carpets of Mount Isa houses to enable the *signature* of the dust to be determined. More comprehensive sampling will be conducted during the next six months.

A study to measure lead bioavailability in rats will start in September this year, with completion due in June 2009. Bioavailability measured through animal dosing tests is the most effective measure of absorption into the organs which can be compared to effects on humans. Suitable ethics protocols will be followed before undertaking this testing. These results will be used to verify the results of

analysis using the Physiologically Based Extraction Technique (PBET) that has been used extensively in the Whole of Emissions studies as an indicator of the bioavailability of lead.

Phase III: Water

In August 2008, water samples will be collected from water holes within the Leichhardt River and tested for aquatic toxicity to determine the impact on the health of aquatic flora and fauna.

During the 2008/09 wet season (December - March) an assessment of lead bioavailability within the water of the Leichhardt River will be undertaken.

Xstrata Mount Isa Mines has an ongoing commitment to this project. Should the results show a need for corrective action, then the company will take immediate steps to address Associate Professor Noller's recommendations.

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