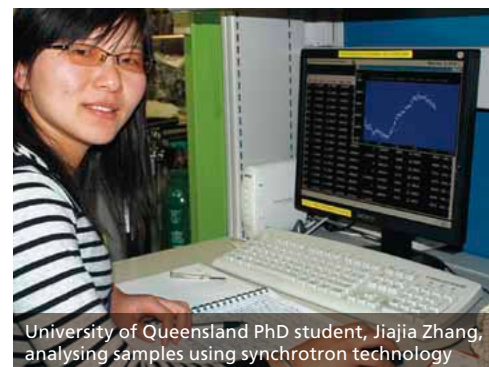


# Environmental Initiatives: Lead Pathways Study – Phase 2 (Air)

March 2010



Associate Professor Barry Noller from the University of Queensland undertakes dust sampling of house surfaces



University of Queensland PhD student, Jijia Zhang, analysing samples using synchrotron technology



Dust collection buckets being set-up on site

The *Lead Pathways Study* is an independent research program being undertaken by the University of Queensland's Centre for Mined Land Rehabilitation (CMLR), in collaboration with the National Research Centre for Environmental Toxicology. The study aims to provide a better understanding of potential pathways of lead in the Mount Isa community from both naturally occurring minerals and those from mining operations.

Phase two of the study is investigating potential sources of dust in Mount Isa, the chemical form of the lead and the potential risk to human health.

Samples of natural mineralisation, mine processing materials, soils and dust have been collected from the mine site and throughout the community, including the collection of dust samples from floors, window sills, roofs and carpets from a representative sample of Mount Isa houses.

These dust samples are being analysed using X-ray absorption synchrotron technology, located in Japan, to enable their *signatures* to be determined based on the chemical form of the lead in the samples.

The comparison of *signatures* of the collected dust samples with the *signatures* of naturally occurring minerals and mine processed materials will help identify the sources of lead contributing to lead in air and dust in the community.

As with Phase One (Land), the bioavailability of lead in the soil, dust and mine samples is also being assessed. Bioavailability refers to the percentage of lead which the body will actually absorb. This is important, as the risk to human health is not directly related to the total amount of lead ingested, but rather the amount that can be absorbed by the body as it passes through the stomach and gastrointestinal tract.

Bioavailability is estimated using laboratory tests which simulate the human gastrointestinal tract. To verify that the laboratory estimates are accurate, animal dosing studies using rats have also been conducted and this has shown that the laboratory tests are successful in providing quality data.

Once the results from this sampling program undergo a comprehensive analysis, the CMLR will compile the findings into a draft Phase Two (Air) report, which will then be the subject of an independent peer review process.

It is anticipated that the Phase Two (Air) report will be completed, peer reviewed and available in the second half of 2011.

Xstrata Mount Isa Mines will continue to update the Mount Isa community on the progress of the study and its findings. Should the results show a need for corrective action, we will take immediate steps to address any recommendations.