



Minerals and Metals Sector *Update*

Metals in Soils Research Program: A Proposal Under Consideration

Metals in soils and their potential health and environmental consequences are matters of increasing concern to many communities worldwide. The uncertainties associated with the potential impact of metals in soil include:

- risk assessments for regulatory, and possible legal, purposes tend to be over-estimated; and
- the metals-producing and -using industries and governments may be vulnerable to significant potential liabilities.

The Metals in Soils Research Program will be an internationally coordinated and concerted effort to eliminate or minimize uncertainties pertaining to the potential health and environmental impacts of metals in soils. More specifically, the project will:

- develop predictive models for metal behaviour, bioavailability and potential impacts in soils;
- ensure risk assessment protocols take into account such behaviour; and
- develop remediation solutions when problems exist.

The initiative will consist of a review of past and current work, identification of the knowledge gaps and science needed to address the related uncertainties, a research program targeted at resolving the defined uncertainties, and communication of the research findings to the appropriate audiences such as regulators and soil remediation experts, and translating the results into methodologies of risk assessment. The initiative will be managed as an international consortium with a committee structure to provide oversight and scientific and technical direction.

Following an in-depth scientific peer review of the proposal, governments and industry will be approached to determine their interest and willingness to contribute to project funding.

The Minerals and Metals Sector (MMS), through its mineral sciences research facility (CANMET-MMSL), has extensive experience in delivering problem-solving research through stakeholder consortia, such as the Mine Environment Neutral Drainage (MEND) and Aquatic Effects Technology Evaluation (AETE) programs.

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MMS R&D Deals With Lead Levels in Drinking Water and in Food-Processing Equipment

The lead-free alloys developed by researchers at the CANMET Materials Technology Laboratory (MTL) in 1999 continue to interest researchers today. Scientists from the University of Tokyo recently visited the Minerals and Metals Sector to discuss lead-free plumbing alloys, which MMS first developed as part of a consortium formed by the North American foundry industry to address concerns about lead levels in drinking water. Today, the Brass and Bronze Ingot Institute estimates EnviroBrass (the alloy's trade name) has achieved a 20% share of the 80 000-tonne North American market for cast plumbing fittings. Within this category, 15% of all faucets and 70% of all water meters in the United States are produced with EnviroBrass II. Japanese scientists were responding to revisions to standards for lead content in drinking water, necessitating the development of lower-lead or lead-free bronze castings for plumbing applications in that country. CANMET-MTL scientists have turned their attention to the development of a lead-free copper alloy specifically for metal containers, pipes, and fittings used in dairy operations.

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