Public Sessions at Technical and Public Advisory Committee Meetings

Public sessions are scheduled between 9:30 and 10:30 a.m. at each monthly Technical Committee (TC) meeting and are facilitated by TC Chair Dick DeStefano. While not every question can be answered immediately, the TC makes every effort to ensure that outstanding questions receive a response within a reasonable timeframe.

The TC will continue to accommodate public presentations during the one-hour morning period at each TC meeting. The TC will also attempt to accommodate special requests for presentations by the public outside of the above dedicated period. To ensure that the Q&A sessions are productive, all questions for the TC members or the SARA Group should be provided two weeks before each TC meeting. Members of the public are also invited to ask questions during meetings of the Public Advisory Committee (PAC). PAC meetings are held every other month from 7:00 pm to 9:00 pm.

If you wish to submit a question or request time on the agenda at a TC or PAC meeting, please contact the SARA Group:

- Web site: **www.sudburysoilsstudy.com**
- Toll-free: **1.866.315.0228**
- Email: **questions@sudburysoilsstudy.com.**

SARA GROUP

The SARA Group will contact the PAC Chair, who, in consultation with the TC Facilitator, will decide which committee should hear the issue. The SARA Group will contact the requestor to confirm the time and place of the next meeting.

To ensure that the TC and PAC are not in possession of confidential information, presenters wishing to provide written materials must sign a waiver declaring that the information is publicly available or provide signatures to document the owner's permission to distribute the information.

For more information on the member organizations of the Technical Committee, and their roles and responsibilities on that committee, please ***visit our website at*** **www.sudburysoilsstudy.com**.

Where we are now?

Draft HHRA Report submitted to TC

Soil Collection	TC and PAC started	SARA Group conducts Risk Assessments			
MOE Report	Risk Assessments (HHRA and ERA)				
2001	2002	2003	2004	2005	2006

Where we are going?

TERA peer-review process	Completion of Risk Assessments	Risk Management Decisions	Remedial Action (Long-Term and Short-Term if required)
Risk Assessment		Risk Management	
2006		2007	2008

Projected dates are based on current information and may be subject to change.

Have your say
contact us

Here's how:

- Attend the public sessions at TC and PAC meetings
- Attend workshops and open houses
- Call our toll-free project information number at **1.866.315.0228**
- Send an email with your comments to: **questions@sudburysoilsstudy.com**
- Send written comments by mail or fax to:

The SARA Group
64 Baker Street
Guelph ON N1H 4G1
Fax: 519.766.4360

If you would like copies of previous newsletters, please contact us or visit www.sudburysoilsstudy.com

Further information and frequently asked questions can be found at the project website **www.sudburysoilsstudy.com.**

Upcoming Events

2006 Technical Committee Meetings

- Thursday, April 13
- Thursday, May 11
- Thursday, June 8
- Thursday, July 13

Public Advisory Committee Meetings

- Tuesday, March 21
- Tuesday, May 16

Sudbury Soils Study | Étude des sols sudburois
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winter/spring 2006

update

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ERA Enters Final Phase

SARA Team Members collecting soil samples.

After three years of intensive field work and data collection, the Sudbury Area Risk Assessment (SARA) Group study team has entered the final phase of the Ecological Risk Assessment (ERA).

Because of the size and complexity of the study, traditional ERA approaches based on existing models were unable to provide sufficient guidance on how to tackle the situation in Sudbury.

To address the Sudbury-specific conditions, the study team developed a unique approach to the ERA that is breaking new ground and earning recognition from the international science community.

Sudbury has a proud history of re-greening efforts to help ecosystem recovery. Now, an important objective of this study is to answer the question: Are metals in Sudbury soils preventing the recovery of self-sustaining forest communities? In other words, are the current environmental conditions affecting the future health of our local forests?

Finding the answer has posed a significant scientific challenge and an even greater opportunity for innovation. To meet the challenge, the team gathered more than 34,000 pieces of Sudbury-specific data from 22 study sites.

By Fall 2005, the data had been gathered, and the task of evaluating and integrating the evidence began. This process is now underway and the results are expected to provide a comprehensive picture of the ecological conditions in the Sudbury region.

While similar studies of this size conducted in the United States have taken a decade or longer, the advanced science and the cooperative approach used by members of the technical committee in Sudbury will provide answers much faster. The ERA is expected to be complete in late 2006. The process for conducting the Sudbury area ERA is truly made in Canada.

Study Update

Assessing the Sudbury Environment

Data collection is now complete; the draft results of the Human Health Risk Assessment (HHRA) are being reviewed by the Technical Committee in preparation for an international scientific peer review, scheduled for fall 2006, and the draft report of the Ecological Risk Assessment (ERA) is nearing completion.

When the final reports are completed later this year, they will include input from some of the world's leading scientific experts. The public will also have an opportunity to review the reports and provide comments.

With more than three years of research and thousands of data points, the final report is expected to be a very large document divided into three volumes:

- Vol. I - Historical and background information;
- Vol. II - Human Health Risk Assessment (HHRA); and
- Vol. III - Ecological Risk Assessment (ERA).

A plain language summary report will also be included.

In this issue, we provide an overview of the ERA report that will be contained in Volume III.

Volume III: Ecological Risk Assessment

The Ecological Risk Assessment (ERA), the third volume of the Sudbury Soils Study, will determine the potential risk of identified metals, known as the Chemicals of Concern (COCs), on plants and animals in the Sudbury area. This report will include the results of fieldwork and detailed laboratory testing to assess potential risks to local ecosystems.

The Chemicals of Concern being studied in the Sudbury Soils Study are arsenic, cobalt, copper, lead, nickel and selenium.

To review the table of contents for each volume of the Sudbury Soils Study final reports, please visit our website at www.sudburysoilsstudy.com.

For more information on the Sudbury Soils Study final report, call us toll-free at 1-866-315-0228, visit the website, or email us at questions@sudburysoilsstudy.com.

Partnerships in Sudbury: Who's Who on the TC?

The Sudbury Soils Study continues to set a new standard for how community-based risk assessments are completed in Canada. Since the launch of the study in 2001, the study team has followed a commitment to ensure an open, transparent and consultative process that considers input from all interested stakeholders. Inco and Falconbridge continue to work closely with health and environmental authorities, the science community, our governments, and the public to maintain an inclusive approach as we move closer to learning the results later this year.

At the core of this process is the Technical Committee (TC), which was formed in 2002 to direct the human health and ecological risk assessments (HHRA and ERA). Members of the TC meet regularly to review all aspects of the study and provide input on draft reports prior to the expert panel review and final release. Meetings also include technical specialists, Public Advisory Committee members, union observers and the Independent Process Observer.

While each of the TC's six member organizations has its own distinct responsibilities, as outlined below, they work together to achieve the common goals of environmental preservation and the protection of public health in the Greater Sudbury area.

City of Greater Sudbury

The protection and preservation of the local environment is critical to the short-term growth and long-term prosperity of the City of Greater Sudbury, and the quality of life for all residents and visitors.

As a partner in the Sudbury Soils Study, the City contributes its vast knowledge and proven experience in the recovery of Greater Sudbury's natural ecosystems. The City has gained international recognition for its land reclamation efforts, which include the planting of almost eight million tree seedlings over the past 25 years. The Sudbury Soils Study is a natural next step in the process of healing and restoring the regional landscape.

The City is involved in several initiatives aimed at the protection and improvement of our local environment. These include a Lake Water Quality Program, an ongoing Land Reclamation Program, and the EarthCare Sudbury initiative. These efforts go hand-in-hand with the City's goal of making Greater Sudbury a cleaner, greener, healthier and more sustainable community.

Inco Limited

Inco Limited has a long and proud history supporting Sudbury's reputation as an economically diverse community that is home to one of the world's largest mining, smelting and refining operations. Historic mining activities, by their nature, have had a direct impact on the environment. Inco Limited takes the responsibility to understand these impacts very seriously, now and for the future.

As a key contributor to the goals of the TC, Inco is committed to serving as stewards of both natural resources and its products, and respecting the traditions and cultural heritage of the people who live and work in its home communities.

As a funding partner of the Sudbury Soils Study, and in cooperation with its TC partners, Inco's goal is to conduct world-class health and environmental risk assessments in the Sudbury community. The company is committed to working with all stakeholders to address any environmental or public health concerns that may arise throughout the study process.

Ontario Ministry of the Environment (MOE)

The Ministry of the Environment's mission is to set the course in protecting, restoring and enhancing the environment to ensure public health, environmental quality and economic vitality. As the regulatory authority for the Province, the MOE's role in the study is to help guide the risk assessment process, to ensure that it remains transparent and that valid scientific methods are employed. If the risk assessments identify a need for ongoing risk management or environmental cleanup, then the MOE will continue to monitor that process to ensure the most effective outcome.

Falconbridge Limited

As a funding partner of the Sudbury Soils Study, Falconbridge plays a key role in the comprehensive partnership to evaluate both environmental and health impacts of historic mining activities in the Greater Sudbury Area. Falconbridge representatives contribute their occupational health, metallurgical and environmental expertise to the work of the TC, based on their combined experience with other similar communities and mining operations in Canada and around the world.

The Mission is clear: Falconbridge has and will continue to work towards the common TC goal of conducting complex risk assessments in the unique environment of Sudbury, while maintaining a committed approach to results and recommendations once the studies are complete.

The company's goal is to complete the risk assessments in a timely manner, while ensuring that all studies are conducted according to scientifically sound principles that will meet the high standards of international peer review.

Sudbury & District Health Unit

The mission of the Sudbury & District Health Unit (SDHU) is to work with its communities to promote and protect public health, as mandated by the Ontario Health Protection and Promotion Act.

Where the Medical Officer of Health (MOH) is aware that a public health concern may exist, the MOH has duties and powers to investigate and to determine the nature and potential impact of the concern.

The investigation of metals and arsenic in the Sudbury area reflects the SDHU's goal to prevent or reduce adverse health outcomes resulting from exposure to health hazards, such as biological, physical and chemical agents, natural or man-made. In addition, the health unit is committed to communicating information on public health protection to the community.

Through participation in the Sudbury Soils Study, the MOH remains focused on matters related to environmental conditions in order to identify, prevent, or respond to any potential public health concerns.

First Nations and Inuit Health Branch, Health Canada

Health Canada is the Federal department responsible for helping Canadians maintain and improve their health, while respecting individual choices and circumstances. As part of its goal to be among the countries with the healthiest people in the world, Health Canada relies on sound scientific research and consultation with various communities of interest as the basis for its work.

Health Canada First Nations and Inuit Health Branch (FNIB) focuses on the maintenance, protection and improvement of health within our native populations. Together with First Nations and Inuit organizations and communities, Health Canada carries out many activities aimed at helping people remain healthy.

For more information on the role of the Technical Committee, visit the website at www.sudburysoilsstudy.com.

Getting Our Hands Dirty

The Fieldwork and Science behind ERA Objective One

To determine whether metals in the soil are preventing the recovery and growth of our forests, the SARA Group study team collected data throughout the Sudbury region to address four indicators of ecological conditions, called "lines of evidence":

- The physical and chemical composition of the soil;
- The composition and health of forest and plant communities;
- Soil toxicity tests; and
- The rate of microbial decomposition (leaf decay).

These lines of evidence are currently being integrated to give a conclusive picture of the ecological health of the Sudbury region. What follows is a glimpse into the field work performed by the SARA Group in the summers of 2004 and 2005 and the science behind this important aspect of the ERA.

Plant Community Assessment:

Which plants are growing in the Sudbury soil?

At each study site, we classified and recorded all plant species, making note of the species that are sensitive to metals or acidity in the soil. We also recorded characteristics of the site, such as geographical features, tree ages and heights, and the number of decaying logs. The ecologists on the team used these data to assess the ecological health and prospects for sustainable growth at each site.

Toxicity Testing:

How well do certain test species grow in Sudbury soil under laboratory conditions?

In the laboratory, test species, such as goldenrod, red clover and white spruce, were planted in soil collected from the test sites. After set periods of time, the plants were measured to see how well they grew. The toxicologists on the study team used these results to assess the toxicity of the soil at each site.

Soil Chemistry:

What is the physical and chemical make-up of the Sudbury soil?

We dug holes at each site to examine the physical composition of the soil and sent soil samples to a laboratory to determine the nutrient content, acidity, metal content and the ability of the soil to bind metals. The soil scientists on the study team used these data to assess each site based on its soil chemistry.

Litter Bag Study:

How long does it take for birch leaves to decompose when left on the Sudbury soil?

Decomposition adds nutrients and organic matter to the soil and, in healthy soils, is controlled by a complex community of bacteria, fungi and invertebrates (like insects and worms). In the fall of 2004, mesh bags (also called *litter bags*) were filled with birch leaves and placed at each site. We returned to the sites at regular intervals to collect bags and measure how much the leaves had decomposed. The soil ecologists on the study team used these results to assess the rates of decomposition at each site. Very slow decomposition would suggest that the community of bacteria, fungi and invertebrates are not functioning properly.

Combining the Lines of Evidence: Final steps

The four lines of evidence have been combined to give each study site an overall ecological health assessment. For sites where the forest community is struggling to recover and grow, we are determining whether metals in the soil are the cause. The final step will be to apply the site results to the entire study area.

HHRA Progress Update: Preparing for Peer-Review

The first draft of the Human Health Risk Assessment (HHRA) report was submitted to the Technical Committee (TC) for review in October of 2005. The TC review process includes review by scientific adviser, Dr. Ron Brecher. Once the TC review is complete, the report will be sent to the International Expert Review Panel (IERP) for scientific peer review. This is an important step to ensure that sound scientific practices have been applied to produce the most reliable results.

Peer-Review Process Explained

A standard practice in science research, the 'peer review' process involves asking impartial leading scientists to review draft reports and provide feedback to the study team. The role of the expert panel is to assess the scientific principles and study methods used, to provide a broader perspective on the current state of science, and to ensure the credibility of the results.

To coordinate this process and bring together the best risk assessment experts from around the world, the TC has retained the TERA (Toxicology Excellence for Risk Assessment) Group of Cincinnati, Ohio. Visit www.tera.org/peer for more information on TERA and its accomplishments in the field.

Following the expert review, the study team and the TC will review comments from the panel, and a meeting will be arranged to discuss any issues the reviewers may identify.

The review process will be underway shortly for the Sudbury Soils Study, and the review meeting in Sudbury will be scheduled prior to the report being finalized and released in late 2006. Members of the public will be invited to meet scientific leaders in the fields of human health and environmental risk assessment. The date and format for the meeting will be announced in the local media and on the website: **www.sudburysoilsstudy.com**