Health Canada Santé Canada

Health Impacts of Site Remediation

An Approach to Identify and Mitigate Potential Health Impacts

Background

In Canada, the remediation of contaminated federal land is likely to trigger an environmental assessment under the *Canadian Environmental Assessment Act* (*CEAA*). The environmental assessment identifies potential environmental effects of a project or physical activity, and develops feasible measures that would mitigate adverse environmental effects.

From a contaminated site risk management perspective, an environmental assessment is an opportunity to address the effects of the remediation technologies on human health. It is a strategic tool designed to identify potential impacts before they occur and therefore avoid or mitigate potential impacts by improving the risk management plan.

In general, contaminated site remediation technologies are used to minimize the human health and environmental risks associated with the land contaminated with hazardous chemicals. However, one must understand that there may be adverse health effects directly related to the use of remediation technologies. The overall long-term risks associated with leaving the contamination in the land are typically far greater than the risk associated with the remediation operation itself. Nevertheless, these health impacts need to be addressed when performing human health risk and impact assessments for contaminated site remediation projects.

Health Canada has developed a guidance document entitled "Human Health Impacts Related to Contaminated Sites Remediation Technologies" to assist assessors with identification and mitigation of health impacts related to site remediation. The guidance document includes a proposed approach for the compilation of relevant data in support of the determination of the significance of impacts associated with remediation. The document also includes a sample worksheet for data compilation.

This tool provides a means of weighing technology risks against site risks and the ability to balance risks that exist against those that could inadvertently be created through clean-up.

Scope

A wide range of *in situ* and *ex situ* soil and groundwater treatment methodologies are covered in the guidance document. The document includes information with respect to compatibility of contaminants with remediation technologies, contaminant-specific health concerns, general contaminated site health impacts and health impacts associated with specific remediation technologies. Preventative and mitigative methods for addressing health impacts are also provided.

Approach

The systematic approach proposed in the guidance document involves the compilation of relevant site-specific information in a worksheet through the following steps:

- Determine what substances have been identified at the contaminated site.
- Determine the remediation technology or technologies selected for the site.
- Evaluate whether the proposed remediation technologies are compatible with the substances found on the site.
- Review the chemical-specific health concerns summarized in the guidance document for each substance identified at the site.
- Identify any non-technology-specific health impacts associated with the remediation process and the proposed preventative and mitigative measures.
- Identify the specific health impacts of each proposed remediation technology and the proposed preventative and mitigative measures.

More Information

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