

2003/05/23

UPDATE ON

CONTAMINATED SITES

Clarification on Hydrocarbon Analytical Methods and Standards

Introduction

The Contaminated Sites Regulation (the regulation) provides soil and water standards for substances commonly found at petroleum hydrocarbon sites, including:

- monocyclic aromatic hydrocarbons (MAHs)
- polycyclic aromatic hydrocarbons (PAHs)
- volatile petroleum hydrocarbons in soil (VPHs) and water (VPHw)
- light extractable petroleum hydrocarbons in soil (LEPHs) and water (LEPHw)
- heavy extractable petroleum hydrocarbons in soil (HEPHs)
- volatile hydrocarbons in water with carbon range 6-10 (VH_{w6-10})
- extractable hydrocarbons in water with carbon range 10-19 (EH_{w10-19}).

Approved Analytical Methods

The regulation requires, to show compliance with its standards, that all substances be analyzed using methods specified in protocols approved under section 53 or alternate methods acceptable to the Director of Waste Management. Accordingly, the Director has established and approved a number of specific analytical methods to test soil and water for petroleum hydrocarbons. These are provided on our contaminated sites web site at:

http://wlapwww.gov.bc.ca/epd/epdpa/contam_sites/analytical_methods/index.html

Non-Approved Analytical Methods

Other non-Director approved analytical methods exist for petroleum hydrocarbons, for example, total petroleum hydrocarbons (TPH), total extractable hydrocarbons (TEH), and extractable petroleum hydrocarbons (EPH). It has become apparent that it is common practice in the environmental consulting industry to use EPH results to determine compliance with LEPH and HEPH standards.

Is EPH an acceptable alternate analytical method for LEPH and HEPH methods?

No. EPH is not an officially approved analytical method for petroleum hydrocarbons under the regulation. The regulation does not contain soil or water standards for EPH *per se*, nor can EPH results be legally compared to the regulation's LEPH or HEPH standards.

Nevertheless, EPH results can be used as a valuable screening tool in a site investigation, for example, to assist in initial location and delineation of petroleum hydrocarbon contamination. However, EPH results cannot be used where it is necessary to demonstrate legal compliance with the regulation's petroleum hydrocarbon standards.

When must the Director's petroleum hydrocarbon analytical methods be used?

The Director's approved analytical methods for volatile and extractable hydrocarbons, LEPH and HEPH must be used to support recommendations or conclusions related to compliance with the regulation's VPHs, VPH_w, LEPHs, LEPH_w, HEPHs, VH_{w6-10} or EH_{w10-19} standards. Confirmatory petroleum hydrocarbon analytical data submitted in support of a request for a Determination of contaminated site, an Approval in Principle, a Certificate of Compliance or a Contaminated Soil Relocation Agreement must be based on approved analytical methods to enable a manager to issue the requested document.

The extent of LEPH, HEPH and PAH data required to demonstrate compliance with regulatory standards varies depending on the nature of the document requested. For example, in the case of a Determination, legal LEPH, HEPH and PAH data are needed for any intrusive site investigation work done. In the case of a Certificate of Compliance, only confirmatory LEPH, HEPH and PAH results are required and EPH screening results may comprise the majority of the site investigation data.

When will data using Director approved petroleum hydrocarbon methods be required?

In recognition of the common industry practice to equate EPH results with LEPH and HEPH data, and to allow sites which may have been so characterized to be reviewed by the ministry, the Director has approved on an interim basis the equivalency of EPH, and LEPH and HEPH methods, until January 1, 2004. Submissions received by the ministry prior to that date can be evaluated solely in consideration of EPH results. After that date, the requirement to perform and

submit data based on LEPH and HEPH analytical methods will be strictly enforced.

At what types of sites can the Director's interim equivalency between EPH and LEPH/HEPH be used?

At some commercial and industrial sites the possibility of co-occurrence of petroleum hydrocarbons and PAHs exists. In recognition of this, the Director's interim decision on EPH and LEPH and HEPH equivalency is limited solely to petroleum and natural gas drilling, production, processing, retailing and distribution sites as described in Schedule 2 section F of the regulation.

Can Rostered Experts submit recommendations based on EPH results?

Rostered experts may submit recommendations related to issuance of ministry documents based on EPH as opposed to LEPH and HEPH results provided that:

- The site in question is, or was, used for the commercial or industrial activities described in Schedule 2, section F of the regulation;
- reports relevant to the request for service state that EPH rather than LEPH and HEPH results have been used to support the expert's recommendation to issue the requested ministry document; and
- the submission and rostered expert's recommendation is received by the ministry before January 1, 2004.

After January 1, 2004, rostered experts will be required to base their recommendations related to petroleum hydrocarbon sites on appropriate LEPH and HEPH results.

For more information, contact the Environmental Management Branch, at (250) 387-4441.