



BRITISH
COLUMBIA

Ministry of Water, Land and
Air Protection

X18E

TECHNICAL GUIDANCE ON CONTAMINATED SITES

Nonscheduled Toxic Substances

Introduction

Schedules 4 through 7 of the Contaminated Sites Regulation (the regulation) provide numerical concentration environmental quality standards for a large number of individual substances.

In addition, the Director has established “Nonscheduled Toxic Substances – not present” standards for soil and water. These standards require that soil and water at a site be remediated so that any nonscheduled toxic substance (NSTS) is not present with a concentration in excess of that acceptable to the Director, and that soil to be relocated does not contain any NSTS with a concentration in excess of that acceptable to the Director.

The NSTS standards therefore ensure that sites contaminated with toxic substances not specified in Schedule 4, 5 or 6 of the regulation can be effectively remediated and that soil contaminated with toxic substances not specified in Schedule 7 can be relocated under the provision for soil relocation agreements.

The purpose of this guidance is to:

- document factors used by the Director to determine if a nonscheduled substance is toxic, and
- delineate remedial requirements to ensure a NSTS does not exceed a concentration in excess of that acceptable to the Director.

Relevant provisions in the regulation

Section 11 (1) (c) of the regulation provides the Director the authority to establish a NSTS standard for use in determining a site’s status as a contaminated site. Section 17 (1) (c) of the regulation provides for the use of a standard established under section 11 (1) (c) as a remedial standard at contaminated sites. Section 45 (2) (c) allows a NSTS standard to be used for soil relocation purposes.

Definitions

“**minimum detection limit**” means the lowest routinely achievable limit of analytical detection for a substance.

“**nonscheduled substance**” means any substance for which environmental quality

standards are not provided in Schedules 4 through 7 of the regulation.

“nonscheduled toxic substance” means a non-scheduled substance which has been determined to be toxic by the Director and is subject to regulation under the NSTSs standards of the regulation.

“practical quantification limit” means five times the minimum detection limit for a substance.

Determination of a nonscheduled toxic substance

The Director deems a substance to be a non-scheduled toxic substance if the substance:

- is listed in Schedule 4 or 5 but is not listed in Schedule 6 of the regulation;
- is listed in Schedule 6 but is not listed in Schedule 4 or 5 of the regulation; or
- is listed in Table 1 of this guidance.

Determination of the practical quantification limit for a nonscheduled toxic substance.

The practical quantification limit (PQL) for any NSTS in soil and/or water may be determined as follows:

1. Contact a minimum of three Canadian Association of Environmental Analytical Laboratories (CAEAL) accredited analytical laboratories to obtain those laboratories' minimum analytical detection limit for the NSTS.
2. Calculate the arithmetic mean minimum analytical detection limit for the NSTS based on the minimum analytical detection limits obtained from the laboratories.
3. Multiply the mean minimum analytical detection limit for the NSTS by five to obtain the PQL for the substance.
4. Document the determination of the PQL for any site investigation or remediation plan

prepared for the site, or any summary of analytical results prepared to characterize contaminated soil to be relocated.

Regulation of a nonscheduled toxic substance

Only those substances listed within Table 1 of this guidance are subject to regulation under the NSTSs standards of the regulation.

For the purposes of the Contaminated Sites Regulation, a site is not a contaminated site if the soil or water of the site does not contain:

- a concentration of a substance listed in schedules 4 through 6 of the regulation which exceeds a corresponding standard for that substance in those schedules;
- a concentration of a NSTS which exceeds the corresponding PQL or applicable remedial target provided for that substance in Table 1 of this guidance; or
- a concentration of a NSTS which exceeds the PQL for that substance calculated in accordance with the procedures in the section of this guidance entitled “Determination of the practical quantification limit for a nonscheduled toxic substance”.

Similarly, for the purposes of the regulation, soil may be relocated without a contaminated soil relocation agreement if the soil does not contain:

- a concentration of a substance listed in schedule 7 of the regulation which exceeds a corresponding standard for that substance in that schedule;
- a concentration of a NSTS which exceeds the corresponding PQL or applicable remedial target provided for that substance in Table 1 of this guidance; or

- a concentration of a NSTS which exceeds the PQL for that substance calculated in accordance with the procedures in the section of this guidance entitled “Determination of the practical quantification limit for a nonscheduled toxic substance”.

Nonscheduled toxic substances remediation

The NSTSs standards require that soil or water at a satisfactorily remediated site, or soil to be relocated, does not contain NSTSs in excess of concentrations acceptable to the Director.

Consequently, to obtain certification of compliance with ministry requirements; the soil and/or water of a NSTS site, or soil containing NSTSs to be relocated, must be remediated:

- to concentrations for NSTSs, which do not exceed the PQLs for the substances provided in Table 1 of this guidance, using analytical methods acceptable to the Director, or as determined using the procedure detailed above in the section entitled “Determination of the practical quantification limit for a nonscheduled toxic substance”; or
- to concentrations for NSTSs which do not exceed the applicable soil and water remedial targets specified for the substances provided in Table 1 of this guidance; or
- on the basis of an approved risk assessment/remedial plan for the NSTSs present in the soil and/or water of the site, or in the soil to be relocated, which ensures that the NSTSs are appropriately risk managed so that exposures of human and/or ecological receptors to the NSTSs at the site, or in the soil to be relocated will not exceed the risk based standards in section 18 of the regulation.

Remedial targets provided in Table 1 of this guidance consider only human health risks. The responsibility to ensure that use of Table 1 remedial targets or practical quantification limits to remediate a NSTS site or relocate NSTS contaminated soil, will not result in an unreasonable environmental health hazard lies with the responsible person for the site or soil to be relocated. Responsible persons are advised to give careful consideration to the following factors when considering the potential of a NSTS to impact ecological receptors:

- quantity of the NSTS contaminated material to be remediated or relocated,
- acute and chronic toxicity, bioavailability and bioaccumulative potential of the NSTS, and
- environmental persistence, fate and transport associated with the NSTS.

Required responsible person’s assertion

The ministry will not issue a preliminary or final Determination of a site’s status as a contaminated site, an Approval in Principle, a Certificate of Compliance or Conditional Certificate of Compliance of satisfactory remediation or endorse a Contaminated Soil Relocation Agreement for any site involving a NSTS, unless the responsible person for the site, or contaminated soil to be relocated, provides in any site investigation, remedial plan or summary of analytical results prepared to characterize contaminated soil to be relocated, the following assertion:

“I [*Name of responsible person for the site or soil to be relocated*] have a reasonable basis to conclude that ecological receptors will not be significantly impacted by the use of [either]:

- the practical quantification limit[s], as specified in Table 1, or determined in accordance with the section entitled “Determination of the practical quantification limit for a non-scheduled toxic substance”, of Technical Guidance on Contaminated Sites 18: Nonscheduled Toxic Substances, or
 - the [soil and/or drinking water] remedial target[s] specified in Table 1 of Technical Guidance on Contaminated Sites 18: Nonscheduled Toxic Substances,
- for the following nonscheduled toxic substance[s]:
- [list nonscheduled toxic substance(s)]”.

The ministry does not require information in support of the above assertion to be submitted to, or be reviewed by, ministry staff as the ministry does not consider Technical Guidance 18 to be an alternative risk assessment/risk management process.

Furthermore, the ministry will not review any information upon which the above assertion may be based. Nor will the ministry verify or otherwise warrant the validity of the responsible person’s assertion to any third party.

Responsible Persons’ duty to test for nonscheduled toxic substances

A responsible person for a site, or for soil to be relocated, has no duty to characterize the soil or water of their site, or the soil to be relocated from their site, for the presence of a NSTS provided they have no reason to believe:

- based on their knowledge of the history and use of substances at the site, and
- any other pertinent information which they may be, or subsequently become aware, (e.g.

analytical results, site investigation results, etc.),

that a nonscheduled substance might reasonably be expected to occur in soil or water at the site or in soil they propose to relocate, in sufficient concentration to represent an unacceptable risk or hazard to human or ecological health.

Note to members of the Roster of Professional Experts

Members of the Roster of Professional Experts may make recommendations related to satisfactory remediation of a NSTS site or the suitability of NSTS contaminated soil to be relocated. As the ministry makes no warranty of any kind with respect to the validity of the responsible person’s assertion related to the level of ecological protection provided by the use of the human health based remedial targets listed in Table 1 of this guidance, the validity of the assertion is not subject to audit under the Roster audit framework.

Furthermore, for the purposes of Protocol 6 under the regulation, the ministry does not consider rationale produced in support of the responsible person’s assertion related to ecological health to constitute risk assessment for a site provided that:

- the rostered professional has, or seeks and relies on the advice of an individual with, demonstrable experience in the performance of ecological health assessment,
- the extent of the ecological health assessment performed is limited strictly to exposure pathway/critical receptor analyses, and
- the ecological health assessment performed is restricted solely to consideration of impacts attributable to NSTSs.

In all other respects however, roster recommendations related to performance of satisfactory remediation at NSTS sites or the

suitability of NSTS contaminated soil for relocation are subject to audit.

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

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