

**CSR Omnibus Standards Updating Supplemental Consultation Document –**

**Proposal to Derive Wildlands Soil Quality Standards for use under the Contaminated Sites Regulation based on Two Tiers of Environmental Protection**

**Introduction**

In this supplemental omnibus updating consultation document the ministry proposes to change the method of derivation of Wildlands standards as described in the ministry's June 2015 Draft Discussion Document "[CSR Omnibus Updating: Proposed Amendments to Schedule 5 Environmental Protection Standards](#)", to accommodate derivation of Wildlands standards based on two tiers of environmental protection.

As originally proposed, in the ministry's June 2015 document, wildlands soil standards were to be derived based on a single level of acceptable effect for environmental protection (i.e. 15%). Based on stakeholder concerns that wildlands standards based on a 15% level of acceptable effect could be overly conservative for Province wide application and would "not likely be detectable in the real environment". To address these concerns the ministry now proposes to derive two discrete types of Wildlands standards based on two tiers of environmental protection: 1. a 15% and 2. a 25% level of effect respectively. In addition these two new proposed Wildlands environmental protection standards would be differentially applied to two new types of wildlands (i.e. "natural" wildlands and "reverting" wildlands).

**Background**

In general, there are two kinds of environmental benchmarks used in environmental regulation:

1. non-mandatory guidelines or screening values which are typically maximally protective of all species and are used to assess the potential for environmental impacts, and
2. mandatory (i.e. legally enforceable) standards which are considered reasonably protective of the majority of organisms, and are used in the restoration or remediation of environmental impacts.

The Environmental Protection soil quality standards of the Contaminated Sites Regulation (CSR) are mandatory standards, and represent reasonable residual contaminant soil concentrations for remediated contaminated sites.

It is critical to realize that the CSR Environmental Protection remedial standards are not designed to completely eliminate contamination at a site or to restore a site to an absolute "pristine" condition. Rather, the CSR Environmental Protection remedial standards are designed to restore or remediate a site to a level of residual contamination which is able to ensure a healthy and sustainable level of ecological diversity commensurate with the land use associated with the site. In British Columbia then, the degree of acceptable environmental protection accorded by the Environmental Protection soil standards varies dependent on the use of the land. Acceptable environmental

protection accorded by the CSR soil quality standards is expressed in terms of an *a priori* established percent effect concentration for a particular substance and a particular land use.

Table 1 provides the 1996 CSST, June 2015 ministry proposed and this supplement's proposed respective acceptable environmental protection levels associated with the various existing and proposed CSR land uses.

The main discriminatory difference between wildlands and other land uses is the extent to which wildlands represent an unmanaged state of the land. Whereas other land uses, including urban park and agricultural land uses, exhibit some degree of human oversight and management, wildlands are largely unmanaged and left to natural processes.

In selecting the MoE Supplemental proposed acceptable environmental protection levels, the ministry gave primary consideration to the extent that a particular land use represented "managed" as opposed to "unmanaged" land.

### **Proposal to Derive Wildlands soil quality standards based on Two Tiers of Environmental Protection representing Natural wildlands" and "Reverted wildlands"**

To address stakeholder concerns that Wildlands standards based on a single 15<sup>th</sup> percentile level of acceptable environmental protection could be overly conservative for Province wide application where industrial or other potential contaminating activities have occurred and the possibility of a low likelihood of detecting effects at the proposed wildlands 15% effect level, the ministry now proposes to derive two discrete types of Wildlands standards based on two tiers of environmental protection: tier 1, a 15<sup>th</sup> percentile and tier 2, a 25<sup>th</sup> percentile level of protection, respectively. In addition these two new proposed Wildlands environmental protection tiers would be differentially applied to two new types of wildlands (i.e. "natural" wildlands and "reverting" wildlands).

Natural wildlands would be unmanaged wildlands which are, and have always been, ecologically pristine, having never been used for a CSR Schedule 2 activity. Reverted wildlands would be lands that are, or had been, used for a CSR Schedule 2 activity and that have reverted to an unmanaged wildlands state as a result of termination of schedule 2 activity, abandonment, neglect or any other reason.

Natural Wildlands standards would be derived based on a 15<sup>th</sup> percentile level of acceptable environmental protection. Reverted Wildlands standards would be derived based on an 25<sup>th</sup> percentile level of acceptable environmental protection (i.e. a level of acceptable environmental protection equivalent to that proposed for Agricultural, Parkland and Low Density Residential land uses).

In concept, ecologically pristine unmanaged wildlands with no history of Schedule 2 activities would be subject to natural wildlands standards. In the case of a spill or off-site contaminant migration from adjacent lands, the natural wildlands standards would apply to the impacted site. It is proposed that the reverted wildlands standards would apply to sites which are or had been used for CSR Schedule 2 activities and that have reverted to, or will be allowed to revert to, an unmanaged wildlands state now or in the future. For example, if an oil or gas wellhead was decommissioned and allowed to revert to an unmanaged state, the area of the former wellhead

would be considered a reverted wildlands, requiring remediation to the applicable reverted Wildlands soil quality standards. However, if the wellhead remained operational, and contamination was to migrate from the area of the site used for the Schedule 2 activity onto on-site or adjacent unmanaged land (i.e. undeveloped or unmanaged ecologically pristine land) the natural Wildlands standards would apply to that unmanaged natural wildlands. Spills of contaminating substances onto pristine land would also be subject to the natural Wildlands standard as would widespread unmanaged contamination from CSR Schedule 2 commercial/industrial sites such as smelters and mines which impinged on natural wildlands.

### **Definition of wildlands land use in British Columbia**

As a component of the ministry's proposed two tier Environmental Protection approach to managing and deriving wildlands soil quality standards, the ministry will modify the existing CSR (1) definition for wildlands land use to incorporate and differentiate natural and reverted wildlands land uses.

### **Request for comments**

Comments on this supplemental proposal to derive wildlands soil quality standards based on two tiers of environmental health protection under the planned Stage 10 amendment to the CSR should be sent to [Remi.Odense@gov.bc.ca](mailto:Remi.Odense@gov.bc.ca) on or before **January 4, 2016**.

### **References**

CSST (1996). *Overview of CSST Procedures for the Derivation of Soil Quality Matrix Standards for Contaminated Sites*. Risk Assessment Unit. Environmental Protection Department. BC Environment. January 31, 1996.

BC Ministry of Environment. (2015a). [CSR Omnibus Updating: Proposed Amendments to Schedule 5 Environmental Protection Standards](#). Discussion Document: For Stakeholder Consultation. Authors: Remi Odense/Glyn Fox. Environmental Protection Division. Environmental Emergencies and Land Remediation. Victoria, B.C. June 2015.

BC Ministry of Environment. (2015b). *Proposal to Derive Wildlands Soil Quality Standards for use under the Contaminated Sites Regulation based on Two Tiers of Environmental Protection*. CSR Omnibus Standards Updating Supplemental Consultation Document: For Stakeholder Consultation. Authors: Remi Odense/Glyn Fox. Environmental Protection Division. Environmental Emergencies and Land Remediation. Victoria, B.C. November 2015.

**Table 1.** Acceptable Levels of Effect for Environmental Protection Proposed to Derive Toxicity to Soil invertebrates and Plants Soil Quality Standards in: CSST (1996) *Overview of CSST Procedures for the Derivation of Soil Quality Matrix Standards for Contaminated Sites*, MoE (2015a) [CSR Omnibus Updating: Proposed Amendments to Schedule 5 Environmental Protection Standards](#), and MoE (2015b) *Proposal to Derive Wildlands Soil Quality Standards for use under the Contaminated Sites Regulation based on Two Tiers of Environmental Protection*.

| Land Use                                   | Acceptable Level of Effect for Environmental Protection |                                     |                                     |
|--|---|-------------------------------------|-------------------------------------|
|  | 1996 CSST (1996) approved <sup>1,2</sup>                | MoE (2015a) proposed <sup>3,4</sup> | MoE (2015b) proposed <sup>3,4</sup> |
| Wildlands <sub>Natural</sub> (WLN)         |   | 15th percentile of EC & LC data     | 15th percentile of EC & LC data     |
| Wildlands <sub>Reverted</sub> (WLR)        |   | 15th percentile of EC & LC data     | 25th percentile of EC & LC data     |
| Agricultural (AL)                          | < of EC50 or LC20                                       | 25th percentile of EC & LC data     | 25th percentile of EC & LC data     |
| Residential <sub>LowDensity</sub> (RLDR)   | < of EC50 or LC20                                       | 25th percentile of EC & LC data     | 25th percentile of EC & LC data     |
| Residential <sub>HighDensity</sub> (RLHDR) |   | 50th percentile of EC & LC data     | 50th percentile of EC & LC data     |
| Urban Park (PL)                            | < of EC50 or LC20                                       | 25th percentile of EC & LC data     | 25th percentile of EC & LC data     |
| Commercial (CL)                            | > of EC50 or LC20                                       | 50th percentile of EC & LC data     | 50th percentile of EC & LC data     |
| Industrial (IL)                            | > of EC50 or LC20                                       | 50th percentile of EC & LC data     | 50th percentile of EC & LC data     |

<sup>1</sup> EC50 is Effect Concentration (non-lethal) for 50% response

<sup>2</sup> LC20 is Lethal Concentration for 20% response

<sup>3</sup> EC is Effect Concentration (non-lethal)

<sup>4</sup> LC is Lethal Concentration