

CSR OMNIBUS UPDATING: Proposed High Density Residential Soil Standards

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Summary of Proposed Updates for 2015/2016 Stage 10 amendment to CSR

1. Repeal and revise the existing Contaminated Sites Regulation (CSR) section (1) definition of “**residential land use**” to include specific reference to two residential land types:
 - a. low density residential land use [RL_{LDR}], and
 - b. high density residential land use [RL_{HDR}].
2. For each substance currently listed in Schedule 4 and 5 of the CSR, derive a new Human Health Protection - Intake of contaminated soil, High density residential matrix soil quality standard for use in Part 1. – Matrix Soil Standards, of the proposed new single schedule (Schedule “X”) of consolidated (Schedule 4, 5 and 10) soil standards.
3. For each substance currently listed in Schedule 4 and 5 of the CSR, establish a new Ecological Health Protection – Toxicity to soil invertebrates and plants, High density residential matrix soil quality standard for use in Part 1. – Matrix Soil Standards, of the proposed new single schedule (Schedule “X”) of consolidated (Schedule 4, 5 and 10) soil standards.
4. For each substance currently listed in Schedule 4 and 5 of the CSR, derive new High density residential, Soil to water protective matrix soil quality standards for use in Part 1. – Matrix Soil Standards, of the proposed new single schedule (Schedule “X”) of consolidated (Schedule 4, 5 and 10) soil standards.

Introduction

The ministry proposes to develop new high density residential soil standards for use in Part 1. – Matrix Soil Standards of the proposed new single schedule (Schedule “X”) of consolidated schedule 4, 5 and 10 soil standards. In 2009, the Ministry contracted with Golder Associates, Ltd and the Science Advisory Board for Contaminated Sites in British Columbia to produce a report providing recommendations related to the derivation of scientifically defensible high density residential soil quality standards. The draft report forthcoming from the Golder 2009 contract was provided to key contaminated sites stakeholders (e.g. British Columbia Business Council, Urban Development Institute, Canadian Petroleum Producers Institute, City of Burnaby, City of Vancouver, Health Canada, Environment Canada, BC Ministry of Health, etc.) for review, discussion and decision regarding the proposed recommendations to derive high density

residential soil standards. In 2011, Golder submitted to the ministry, their final report, Golder, 2011 [1] on the derivation of high density residential soil standards for possible use under the Contaminated Sites Regulation. That report incorporated the input of the above mentioned stakeholders and represents the final conclusions and recommendations related to the scientific derivation of high density residential soil standards. Recently, the ministry contracted with Golder to produce a summary of the key findings of the 2011 report, Golder, 2015 [2].

Legislative Review

For details related to the legislative review completed for the proposed high density residential soil quality standards please see Golder, 2011 [1] and Golder, 2015 [2].

Proposed Updates – Stage 10 Amendment

1. Revise the existing CSR (1) definition of “**residential land use**” to include specific reference to two residential land types:
 - a. low density residential land use [RL_{LDR}] and
 - b. high density residential land use [RL_{HDR}].

For illustrative purposes only, a draft example of a possible revised definition for residential land use is provided in Appendix A.

2. For each substance currently listed in Schedule 4 and 5 of the CSR, derive a new Human Health Protection - Intake of contaminated soil, high density residential matrix soil quality standard for use in Part 1. – Matrix Soil Standards of the proposed new Schedule “X”. Derive the new human health high density residential soil standards in accordance with the requirements for deriving residential matrix soil quality standards as described in “CSR Omnibus Updating: Proposed Amendments to Schedule 4” BC MoE, 2015 [3] and “CSR Omnibus Updating: Proposed Amendments to Schedule 5 Human Health Standards” BC MoE, 2015 [4]. Note that the following incidental soil ingestion rates apply for high density residential land :
 - a. for children – 40 mg/day
 - b. for adults – 10 mg/day
3. For each substance currently listed in Schedule 4 and 5 of the CSR, establish a new Ecological Health Protection – Toxicity to soil invertebrates and plants, high density residential matrix soil quality standard for use in Part 1. – Matrix Soil Standards of the proposed new Schedule “X”. Set the new Ecological Health Protection – Toxicity to soil invertebrates and plants, high density residential matrix soil quality standard equal to ½ the concentration of the new Ecological Health Protection – Toxicity to soil invertebrates and plants, commercial land use matrix soil quality standard derived in accordance with the requirements detailed in “CSR Omnibus Updating: Proposed Amendments to Schedule 5 Environmental Protection Standards” BC MoE, 2015 [5].

4. For each substance currently listed in Schedule 4 and 5 of the CSR, derive new high density residential land use soil to water protective, soil quality matrix standards for use in Part 1. – Matrix Soil Standards of the proposed new Schedule “X”. Derive the new soil to water protective, high density residential matrix soil standards in accordance with the requirements for deriving residential soil to water protective matrix soil quality standards as described in “CSR Omnibus Updating: Proposed Amendments to Schedule 5 Soil to Water Pathway Standards” BC MoE, 2015 [6].
5. Add the following footnotes, specific to high density residential land use, to the matrices comprising Part 1. – Matrix Soil Standards of the proposed new Schedule “X”:
 - ¹ Standard is applicable to high density residential housing consisting of three or more stories or floors of housing.
 - ² Standard assumes use of the land as a children’s playground, campground, sports field, picnic area or any other use that promotes frequent contact by children is prohibited.
 - ³ Standard assumes growth of plants for human consumption is prohibited.

Other Issues – Next Cycle Revisions

1. The new Schedule “X” of consolidated soil quality standards proposed to be established under the Stage 10 amendment to the Contaminated Sites Regulation will be used to revise Protocol 11. Upper Cap Concentrations for Substances Listed in the Contaminated Sites Regulation, BC MoE, 2014 [7]. The revised Protocol 11 will include new Upper Cap Concentrations for high density residential land use and will be implemented concurrent with the Stage 10 amendment to the Regulation.

References

- [1] Golder Associates. (2011). *Report On: Derivation of High Density Residential Soil and Vapour Quality Standards for Use under Contaminated Sites Regulation*. Submitted by Golder Associates Ltd and the Science Advisory Board for Contaminated Sites in British Columbia. May 24, 2011.
- [2] Golder Associates. (2015). *Summary Paper to British Columbia Ministry of Environment on the Derivation of High Density Residential Soil Standards*. Golder Associates, Ltd. February 5, 2015.
- [3] BC Ministry of Environment. (2015). *CSR OMNIBUS UPDATING: Proposed Amendments for Schedule 4*. Draft Discussion Document: For Stakeholder Consultation. Authors: Lizzy Mos \ Glyn Fox. BC Ministry of Environment. June, 2015.

- [4] BC Ministry of Environment. (2015). *CSR OMNIBUS UPDATING: Proposed Amendments for Schedule 5 Human Health Standards*. Draft Discussion Document: For Stakeholder Consultation. Authors: Lizzy Mos \ Glyn Fox. BC Ministry of Environment. June, 2015.
- [5] BC Ministry of Environment. (2015). *CSR OMNIBUS UPDATING: Proposed Amendments for Schedule 5 Environmental Protection Standards*. Draft Discussion Document: For Stakeholder Consultation. Authors: Remi Odense \ Glyn Fox. BC Ministry of Environment. June, 2015.
- [6] BC Ministry of Environment. (2015). *CSR OMNIBUS UPDATING: Proposed Amendments to Schedule 5 Soil to Water Pathway Standards*. Draft Discussion Document: For Stakeholder Consultation. Authors: George Szefer. BC Ministry of Environment. June, 2015.
- [7] BC Ministry of Environment. (2014). [CSR Protocol 11. Upper Cap Concentrations for Substances Listed in the Contaminated Sites Regulation](#). Version 2.1. BC Ministry of Environment. February, 5, 2014.

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Appendix A

FOR ILLUSTRATIVE PURPOSES ONLY

Draft example of a possible revised definition for residential land use

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FOR ILLUSTRATIVE PURPOSES ONLY

A draft example of a possible revised definition for residential land use is provided below.

“residential land use” [RL] means the use of land for the primary purpose of:

- (a) a low density residence [RL_{LDR}] housing a single person or a single family, on a permanent, temporary or seasonal basis, in a common single unit dwelling, including, without limitation:
 - i. a private home, house, cabin, cottage, shack, hut, tent,
 - ii. an immobilized trailer, caravan, mobile home,
 - iii. an apartment, flat, boarding house, tenement, condominium, townhouse, dormitory, barracks, commune, lodge, studio, loft, suite, other than a high density residence,
 - iv. an institutional facility, including a day care, boarding school, military academy, hospital, hospice, nursing home, retirement home, monastery, prison, correctional centre, or community centre, other than a high density residence, or
- (b) a high density residence [RL_{HDR}] housing multiple persons or multiple families, on a permanent, temporary or seasonal basis, in a multiple unit dwelling comprising three or more stories or floors, including, without limitation:
 - i. an apartment, flat, boarding house, tenement, condominium, townhouse, dormitory, barracks, commune, lodge, studio, loft, suite,
 - ii. an institutional facility, including a day care, boarding school, military academy, hospital, hospice, nursing home, retirement home, monastery, prison, correctional centre, or community centre.