Ministerie van Volkshuisvesting,
Ruimtelijke Ordening en Milieubeheer

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Directorate-General for Environmental Protection
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Municipal Executives
Executive Councils of
Associations of Local
Authorities
Provincial Executives
Executive Boards of the
Water Quality Management
Agencies (through the
Association of Water Boards)

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Circular on target values and intervention values for soil remediation

Objective: announcement of policy; to provide an overview of all the currently available soil remediation intervention values and indicative levels for serious soil contamination including the accompanying target values, measurement regulations and parameters for determining the remediation urgency and the remediation deadline; establishing intervention values for soil remediation and indicative levels for serious contamination for the fourth series of substances; giving a guideline for handling substances for which there is no standard; the provision of information.
Takes effect from: three days subsequent to the publication in the Netherlands Government Gazette.
Relationship to other circulars: Replaces the following circulars: Circular on intervention values for soil remediation (Netherlands Government Gazette 1994, no. 95), Circular on intervention

value for soil remediation for polycyclic aromatic hydrocarbons (Netherlands Government Gazette 1996, no. 120), Circular on intervention values for soil remediation second and third series (Netherlands Government Gazette 1997, no. 169) and Circular modifying intervention values for soil remediation (Netherlands Government Gazette 1998, no. 127). Is a supplement to the Circular on Remediation Regulations Soil Protection Act: assessment and coordination (Netherlands Government Gazette 1998, no. 4) and the Circular on the remediation deadline for cases of serious contamination for which remediation is urgent (Netherlands Government Gazette 1997, no. 47).
Valid until: the coming into force of the Order in Council pursuant to sections 36 and 37, subsection six of the Soil Protection Act (Wbb) or until the time when this circular is withdrawn.

Dear Sir/Madam,

I am sending you this circular, also on behalf of the State Secretary for Transport, Public Works and Water Management (V&W) and my fellow minister for Agriculture, Nature Management and Fisheries (LNV), to provide you with an overview of all the currently available intervention values for soil remediation and indicative levels for serious contamination, including the accompanying target values, measurement regulations and parameters for determining the urgency of remediation and the remediation deadline.

The present circular, with the fourth series of substances, adds to the list of intervention values for soil remediation and indicative levels for serious contamination set forth in previous circulars in this domain. The fourth series of substances is the fourth group for which a risk evaluation has been performed for the purpose of establishing intervention values. If no decision could be taken on establishing an intervention value an indicative level for serious contamination has been set. The present circular gives instructions in the form of a guideline for substances for which there are no standards in the case of substances for which no intervention values or indicative levels for serious contamination have been given in this circular. The guideline deals among other things with asbestos.

Area of application of the circular, duty of care
The circular relates to cases of contamination of soil, groundwater and aquatic sediment assessed as part of the remediation regulations in the Wbb. As part of these regulations decisions are taken on the gravity, urgency and deadline for tackling cases of contamination dating from prior to 1987.
The intervention values, indicative levels for serious contamination and target values equally apply to aquatic sediment and have also been included in Fourth Report on Water Management (NW4) with the exception of the fourth series of substances which at the time had not yet been published.

The area of application of the circular is defined as follows:

1. The circular is explicitly not applicable to the assessment of the quality of other types of material such as landfill material, pavement material or (road) construction material.
2. For soil contamination caused as of 1 January 1987 the duty of care applies (section 13 Wbb). Cases of this kind must be cleaned up as quickly as possible, irrespective of the concentrations encountered and the risks of the pollutants. Determining the gravity of the contamination, the urgency of remediation and the remediation deadline do not play any role

here. Remediation is carried out to restore the soil to the old condition using state of the art technology on the basis of the ALARA principle (as low as reasonably achievable). Otherwise section 27, subsection 2 of the Soil Pollution Act offers the competent authority the possibility of defining more closely the details of the measures to be taken.

3. As a supplement to the duty of care the stipulation relating to an unusual event may be applicable (sections 30 - 35 Wbb). If the unusual event rule applies, it is important to determine the gravity of the contamination because this involves extra powers for the competent authority.
4. If the soil contamination was caused prior to 1 January 1987 and is being assessed in a different context, it has to be established whether there is an obligation to clean up the soil by virtue of a valid permit regulation or statutory regulation. Examples which spring to mind are the Environmental Management Act, the Housing Act, the Commodities Act, the Water Supply Act, the Pollution of Surface Waters Act and the Working Conditions Decree. Such legislation has priority over the remediation regulations of the Wbb and the circular is not applicable. However, if on the basis of the other regulations referred to it is decided not to clean up or not to do so in full and the case is one of soil contamination dating from prior to 1 January 1987, the remediation arrangements in the Wbb serve as a last resort and the circular applies. More information on coordinating the remediation regulations in the Wbb with other legislative arrangements can be found in the Circular on the Assessment and Coordination of the Soil Protection Act Remediation Regulations (Netherlands Government Gazette 1998, no. 4).

Soil remediation intervention values

The competent authority (Provincial Executive; Municipal Executive of the four major municipalities; the Minister of V&W) decide by order whether there is a case of serious contamination (Wbb section 29, subsection 1). An order is passed on the grounds of a further soil investigation or a notification as referred to in section 28, subsection 1 of the Wbb. The intervention values for soil remediation are the numeric manifestation of the concentration above which there can be said to be a case of serious contamination.

If the intervention values are exceeded the functional properties of the soil for humans, flora or fauna have been seriously diminished or are in danger of being seriously diminished. To be able to speak of the intervention values being exceeded the mean concentration of at least one substance in at least 25 m^3 of soil volume in the case of soil or sediment contamination, or 100 m^3 pore saturated soil volume in the case of groundwater contamination, must be higher than the intervention value.

The intervention values have been set for soil/sediment and groundwater and apply to terrestrial and aquatic soils. Annex A of this circular gives an overview of all the currently established soil

remediation intervention values and describes the procedure in which these values have been derived.

There is a chance in specific cases that concentrations in the soil below the intervention value may nevertheless seriously diminish or potentially diminish the functional properties of the soil for humans, flora and fauna and place them at risk so that nevertheless a case of serious contamination is present. Further details are given on this in annex A.

Indicative levels for serious contamination

Annex A of this circular also presents an overview of all the currently established indicative levels for serious contamination and describes the procedure adopted by which these indicative levels have been derived. Indicative levels have been established for substances belonging to the second, third and fourth series for which no measurement and analysis regulations are available or to be expected in the near future, or for substances belonging to the second, third and fourth series for which insufficient ecotoxicological toxicity data are available to be able to set a reliable intervention value.

The indicative levels are much more uncertain than the intervention levels. Hence the status of the indicative levels is not the same as that of the intervention levels. A higher or lower level than the indicative level therefore does not have immediate consequences with reference to a decision being taken on the gravity of a case of contamination by the competent authority. The competent authority should take into account other considerations besides the indicative levels, in deciding whether or not there is a case of serious contamination. The competent authority can indicate this when providing reasons for its decision. By way of help I would advise if possible:

- first of all to ascertain whether there is a case of serious contamination and the need for urgent remediation with reference to other substances;
- to have the actual risks determined;
- to carry out a further investigation into the potential risks of the substance in question.

Target values

Annex A of the circular also includes the target values for soil/sediment and groundwater. These have been derived from the project setting integrated environmental quality standards (INS). The target values derived as part of the INS project for soil and sediment have been checked for their practical feasibility as part of the project to evaluating the use of target values (HANS). At the same time within the HANS project agreements have been reached as to how verification against the target value should take place so as to be able to speak of a relatively unpolluted

soil/sediment. Test rules have been introduced for this purpose and decided on in the Soil Steering Group (Stubo).[1] The testing rules are included in Annex A.

The old MILBOWA[2] values have been adopted for groundwater for some aromatic compounds and chlorinated hydrocarbons instead of the INS target values. As to metals, a distinction is made between the target values for deep and shallow groundwater. These choices are explained in further detail in Annex A.

Measurement and analysis regulations

The document 'Quality of environmental measurements' (Parliamentary proceedings II 1992/93, 23 061, no. 1) stipulates that in establishing standards the way in which the substance in question has to be measured must be specified as far as it can be. This circular complies with this requirement by including in annex B measurement and analysis regulations for soil/sediment and groundwater for the substances in question. The rules have largely been taken from DOMINO[3]. If no definitive regulations are available draft regulations are given.

Remediation urgency

If there is a case of serious soil contamination the competent authority has to decide in the same order whether remediation is urgent (Wbb section 36 and section 37, subsection 1). The determining factors are the actual risks for humans and ecosystems at the site of the case of the contamination as well as the risks of dispersion. These depend very much on the use of the contaminated site. Annex 5 of the Circular on the Assessment and Coordination of the Soil Protection Act Remediation Regulations (Netherlands Government Gazette 1998, no. 4) describes the system for determining the urgency of remediation. The system should be applied if it has been decided that there is a case of serious contamination. A new guideline for further investigation is being prepared by V&W for aquatic sediment.

To support the use of the urgency system a users' manual has been compiled at the instigation of VROM (published by the SDU The Hague and the PC software 'Methodology to evaluate urgency for soil remediation' (SUS) has been developed by the Van Hall Institute Groningen/Leeuwarden. The intervention values and the indicative values for serious soil contamination in this circular have been included in the SUS or will be in the near future. Annex C

[1] The StuBo comprises representatives of VROM (Directorate-General for Environmental Protection (DGM) and Inspectorate General for the Environment (IMH)), V&W and LNV, the Association of Provinces (IPO), the Union of Netherlands Municipalities (VNG) and the Union of Netherlands Water Authorities (UvW). The StuBo is the responsibility of the DUIV. The DUIV is an administrative consultative body of the DGM, UvW, IPO and VNG.

[2] Environmental quality objectives for soil and water (VROM, Lower House of Parliament, parliamentary year 1990-1991, 21990, no. 1).

[3] DOMINO (Documentation Environmental Standardisation) published by the Netherlands Standardization Institute (NNI). DOMINO contains an overview of standardised measurement and analysis regulations and is regularly updated.

gives an overview of the parameters necessary to determine the remediation urgency for the substances in this circular.

Remediation deadline

If there is a case of serious soil contamination for which remedial measures are urgently required the competent authority (at least if this is the Provincial Executive and the Municipal Executive of the four major municipalities) must decide the deadline by which the remediation has to start (Wbb section 36 and section 37, subsection 2). A system that should be applied is described in the Circular on determining the remediation deadline for cases of serious soil contamination for which remediation is urgent (Netherlands Government Gazette 1997, no. 47).

The system for determining the remediation deadline has been included in the SUS PC software mentioned earlier. In most cases the same data used to determine the urgency of remediation suffice for determining the remediation deadline (annex C). It may be necessary to collect additional data in a number of cases. This applies in particular in determining the dispersion risks. It is up to the competent authority to decide how to deal with these.

Dealing with substances for which there are no standards

When examining cases of soil contamination substances are regularly encountered for which no target values and/or intervention values have been included in this circular. A familiar example is asbestos. Such substances are referred to in this context as substances for which there is no standard. If such substances are encountered and one wishes to assess whether there is contamination or if one wishes to issue an order for these substances with reference to the gravity and urgency of the case of contamination, this cannot be underpinned by a reference to the target values, intervention values or indicative levels for serious contamination.

Annex D of this circular describes the procedure to be pursued when encountering substances for which there is no standard. As is the case for substances for which there is a standard, it has to be decided first of all whether one is dealing with a case of contamination that comes within the context of the remediation regulation of the Wbb. I refer to the section ‘Area of application of the circular, duty of care’ for more information on this.

Withdrawal of previous circulars

Annex A of this circular gives an overview of all the currently established intervention values for soil remediation and indicative levels for serious contamination. These relate to the earlier published first, second and third series of substances (Netherlands Government Gazette 1997, no. 95 and Netherlands Government Gazette 1997, no. 169) plus the fourth series of substances. Annex A also includes the modifications indicated in the Circular on intervention values for soil remediation for polycyclic aromatic hydrocarbons (Netherlands Government Gazette 1996, no.

120) and the Circular on modifications to the intervention values for soil remediation (Netherlands Government Gazette 1998, no. 127). These circulars are now withdrawn.

Developments of importance for the circular

- When the intervention values were introduced in 1994 it was agreed that a broad review would be carried out after about five years. At the moment the RIVM is working on implementing the scientific part of the evaluation in the Evaluation of intervention values project. This project is working in consultation with INS on the details of coordinating the target values for groundwater with the system of standards for soil remediation. The UI working group[4] is working on the policy part of the evaluation. The Technical Committee on Soil Protection (TCB) has published a report on the RIVM's approach to the evaluation and will be asked in the future to make a recommendation on the results of this. If this evaluation results in an adjustment to the level of a number of intervention values and indicative levels for serious contamination these will be announced in a subsequent circular.
- In anticipation of the evaluation of the intervention values, the RIVM has made an early evaluation of the intervention value for lead at my request and the TCB has been asked to make a recommendation. The proposals of the RIVM for an intervention value for lead for soil/sediment vary from 380 to 520 mg/kg dry matter (ds). The current intervention value for lead for soil is 530 mg/kg ds. It has been decided on the strength of the evaluation of the RIVM and the TCB's report not to change the intervention value for lead for the moment.
- The HANS project has resulted in a follow-up project being started (Background values 2000/AW2000) which will involve research being undertaken into the content of pollutants in the soil in relatively unpolluted areas. The testing rules will also be looked at once again in this follow-up project. The follow-up project is currently at the definition phase so that it is not yet clear when the results can be implemented.
- As part of the progress with implementing the Building Materials Decree it has been agreed that the testing rules for the drins and DDT/DDE/DDD will be modified somewhat at this point in time. The modification has been included in annex A of this circular. The modification will be included in evaluating the testing rules in the HANS follow-up project mentioned.
- Since the testing rules were developed major developments have occurred as part of the new policy on soil remediation (BEVER). The developments are not yet complete. As part of the BEVER project A (which involves weighing up the remediation objectives for soil) soil use values are being established. These values are remediation levels and quality requirements for surface soil in clean-up situations. As the TCB points out in its report the testing rules and the soil use values have to be properly coordinated. Otherwise the situation could arise that on the basis of the testing rules the earth can be freely used while at the same time the soil use values are being exceeded and the quality therefore is not considered suitable for a

[4] The Working group on soil remediation urgency and intervention values (UI) comprises representatives of VROM (DGM and IMH), V&W, LNV, IPO,VNG,UvW, Riza,RIVM. The UI is a working group of the StuBo.

particular soil function. This means that if the most recent knowledge that comes out of project A should prompt this the testing rules will be supplemented.

- The target values for soil/sediment from the INS/HANS projects and the testing rules referred to have been included in the Government decision (NW4, V&W, December 1998) for the assessment of the product quality of sediment These target values for earth/sediment and testing rules have also been implemented as regards the composition value for clean earth (insofar as is currently legally possible) in the regulations for the use of building materials in or on the soil. This is in anticipation of an amendment to the Building Materials Decree laid down in a ministerial exemption (Exemption regulation for the composition and immission standards under the Building Materials Decree, Netherlands Government Gazette 1999, no. 126).

In conclusion
I am assuming that within three days of the publication of this Circular in the Netherlands Government Gazette that the target values, the intervention values for soil remediation and the indicative values for serious contamination will be used to assess cases of soil contamination corresponding to the area of application of this circular.

Yours sincerely,

Minister for Housing, Spatial
Planning and the Environment

J.P. Pronk

INTRODUCTION

This document contains the English translation of the Circular on target values and intervention values for soil remediation as published in the Netherlands Government Gazette of the 24th February 2000, no. 39. The circular gives an overview of all the currently available soil remediation intervention values and indicative levels for serious soil contamination including the accompanying target values, measurement regulations and parameters for determining the remediation urgency and the remediation deadline. Besides this a guideline for handling substances for which there is no standard is included.

The circular contains a lot of Dutch abbreviations for organisations and projects which are not translated in the text. A glossary explaining the meaning of these abbreviations is included.

The translated circular and other relevant information on Dutch soil policy can also be found on the internet: www\minvrom.nl\minvrom\pagina.html?id=1393.

GLOSSARY

List of Dutch abbreviations

AW 2000=project background values 2000
BC= background concentration
BEVER= new policy on soil remediation
DGM= Directorate-General for Environmental Protection
DOMINO= Documentation Environmental Standardization
DUIV= Consultative platform of Directorate General for Environmental Protection, Union of Netherlands Water Authorities, Association of Provinces and the Association of Netherlands Municipalities
ECOTOX SCC = Ecotoxicological Serious Soil Contamination Concentration
HANS= project “evaluating the use of Target Values”
HUM-TOX SCC = Human Toxicological Serious Soil Contamination Concentration
IMH= inspectorate general for the environment
INS= project setting integrated environmental quality standards
IPO= Association of Provinces
LNV= Ministry of Agriculture, Nature Management and Fisheries
MILBOWA= Environmental Quality Objectives for soil and water
MPR= maximum permissible risk level for humans
NA= Negligible Addition
NNI= Netherlands Standardization Institute
NW4=Fourth Report on Water Management
RIVM= National Institute for Public Health and Environmental Protection
RIZA= Institute for Inland Water Management and Waste Water Treatment
StuBo= Soil Steering Party

SUS= Methodology to evaluate urgency for soil remediation
TCB= Technical Soil Protection Committee
UI= working group on soil remediation urgency and intervention values
UvW= Union of Netherlands Water Authorities
V&W= Ministry of Transport, Public Works and Water Management
VNG= Association of Netherlands Municipalities

VROM= Ministry of Housing, Spatial Planning and the Environment
Wbb= Soil Protection Act
WVO= Pollution of Surface Waters Act