INTERNATIONAL STANDARD

ISO 15800

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Soil quality — Characterization of soil with respect to human exposure

Qualité du sol — Caractérisation des sols relative à l'exposition des personnes

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15800 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 7, *Soil and site assessment*.

Introduction

Characterizations of soils and sites relative to human exposure are performed all over the world. They are often planned and conducted by consultancy companies and expert organizations. Data from these characterizations are used in the assessment of human exposure. These characterizations are, furthermore, used for decision-making by companies, individuals and local and national authorities as well as for recommendations and regulations issued by national and international authorities.

The assessment of potential human health effects from exposure may be used for:

— classification of contaminated sites;

— recommendations regarding remediation of sites, soils and soil materials, e.g. priority of remediation;

— decisions regarding the future/planned use of contaminated sites;

— decisions regarding the disposal/treatment/reuse of contaminated or remediated soil and/or soil material.

The data needed for evaluations of human exposure are to some extent dependent on the way in which the exposure is assessed, i.e. calculations may be based on scenarios each requiring different data.

The extent of investigations necessary for the assessment of human exposure may vary depending on the level of contamination and the areal use in question. In some cases the assessment of potential human health exposure may be based solely on information regarding the substances present in the soil and their concentrations and the relevant soil parameters. In other cases more detailed information on the availability of the substance will be necessary. This information will depend on the type and concentration of the substance, the relevant soil parameters and the type of exposure relevant for the areal use in question. Furthermore, the sampling method and strategies may depend on the areal use and the possible exposure patterns.

Due to the large expenditure necessary for both private landowners and public funds set aside for the remediation of contaminated land and the general movement of capital and industry/business corporations, International Standards on the characterization of contaminated soil, especially with regard to human health, are in great demand.

International Standards in this complex field will support the creation of a common scientific basis for the exchange of data, development of knowledge and sound commercial evaluation.

Soil quality — Characterization of soil with respect to human exposure

1 Scope

This International Standard gives guidelines on the kind and extent of soil characterization necessary for the evaluation of human exposure to substances that can cause adverse effects.

The possibilities of standardizing the calculations used for the assessment of human exposure are not included in this International Standard.

The information needed for evaluation of human exposure to contaminants leached from soil to surface and/or groundwater or transferred by runoff is not included in this International Standard. Aspects related to radioactivity and pathogens in soil and potential human exposure hereto are also not included in this International Standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10381-1, *Soil quality — Sampling — Part 1: Guidance on the design of sampling programmes*

ISO 10381-5, *Soil quality — Sampling — Part 5: Guidance on investigation of soil contamination of urban and industrial sites*

ISO 11074 (all parts), *Soil quality — Vocabulary*

ISO 15175, *Soil quality — Characterization of soil related to groundwater protection*

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 11074 (all parts), ISO 11259:1998 and the following apply.

3.1
bioavailability
degree to which substances present in a soil matrix may be absorbed or metabolized in the human body

NOTE In this context the definition refers to availability in the human body.

3.2
biodegradation
breakdown of a substance or chemical by living organisms, usually bacteria