SLOVENSKI STANDARD
SIST ISO 15903:2006

01-december-2006

Kakovost tal – Protokol za zapise o tleh in lokaciji

Soil quality -- Format for recording soil and site information

Qualité du sol -- Format d'enregistrement des données relatives aux sols et aux sites

Ta slovenski standard je istoveten z: ISO 15903:2002

<u>**ICS:**</u>

13.080.01	Kakovost tal in pedologija na splošno	Soil quality and pedology in general

SIST ISO 15903:2006 en

INTERNATIONAL STANDARD

ISO 15903

First edition
2002-09-01

Soil quality — Format for recording soil and site information

Qualité du sol — Format d'enregistrement des données relatives aux sols et aux sites

Reference number
ISO 15903:2002(E)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15903 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 1, *Evaluation of criteria, terminology and codification*.

Introduction

In any system where soil data are handled, but particularly in determinations of soil quality and evaluations for soil protection or sustainable uses of soil, it is essential that reliable and compatible information is obtained and recorded. This information must enable the site to be clearly identified and located.

The documentation should include information collected about the nature of the site at the time of the site investigation and the nature of sampling. Details on the sampling include the place, date and mode of sampling, the size of the sample, whether single or composite and the storage and transportation conditions. In addition, details of the sample preparation and of the results of test methods undertaken on the samples should be recorded. Information should also be provided on the test methods used and their precision, as well as details of the laboratory undertaking the test methods together with information about the laboratory's accreditation and involvement in quality assurance schemes.

Soil quality — Format for recording soil and site information

1 Scope

The purpose of this International Standard is to achieve a high degree of harmonization in reporting results of on-site recording, sampling, on-site sample analyses and laboratory analyses of soil samples. To this end, it provides instructions for correctly specifying the quantities and units used to express results of analyses, the methods used and their precision. This International Standard also provides information to allow unique referencing of the sample, in both field and laboratory contexts, in order to ensure the traceability of the results.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 11074-1, *Soil quality — Vocabulary — Part 1: Terms and definitions relating to the protection and pollution of the soil*

ISO 11074-2, *Soil quality — Vocabulary — Part 2: Terms and definitions relating to sampling*

3 Terms and definitions

For the purposes of this International Standard, terms and definitions given in ISO 11074-1 and ISO 11074-2 apply.

4 Preamble

Given the large amount of data which result from site investigation, sampling, analysis of physical, chemical and biological properties of the sample and in the future evaluation of the risks to particular targets or particular land uses, it is essential that these data be recorded systematically. This approach will generate the basis of a codified information system for soil quality investigations. These data are most appropriately stored in a Geographical Information System (GIS).

5 List of parameters

5.1 General

The range of parameters which can be recorded as a result of observations of on-site characteristics, on-site analysis and laboratory analysis of soil samples is large. It may be necessary to produce subsets of parameter listings, depending upon the hypotheses developed about the soils and sites and the questions to be answered by the analyses.

There will be substantial differences in the content of the documentation, depending upon whether the data relate to preliminary or detailed investigations. The broad layout should however be similar, irrespective of the amount of detail reported.

In addition to the presentation of factual information, there may be an additional interpretative report. In most cases, particularly where any risk assessment will be undertaken, an interpretative report is likely to be required. In some cases the report will also indicate why the selection of parameters for observation has been made.

In broad terms, a codified information system for soil quality investigations will require the information given in 5.2 to 5.11.

5.2 Objectives of the investigation

The reasons for the investigation, including information on the intended use of the site and whether the investigation is a preliminary investigation or a detailed investigation, shall be given. A full discussion and description of the hypotheses which have been formulated, should be included. This information may include, for example, conclusions relating to the presence or absence of (and the type and nature of) any contaminants, if the concern is with a potentially contaminated site.

5.3 General information

The following general information shall be provided:

a) site reference number or site name;

b) location:

- national code (ISO);
- administrative division;

c) geographical references:

- coordinates and other relevant information for locating (map) and describing the area of the site;
- elevation;

d) date and time of sampling or site observation;

e) name and other details:

- the sampler or site observer as well as responsible person;
- the organization responsible for sampling or observing the site;
- the owner of the site.

5.4 Site details

In describing the soil and site, ISO 11259 should be followed where appropriate. The following site details should be provided:

a) surface relief features of the site;

b) slope and appearance of the site;

c) signs of erosion and soil movement;

d) climate at the site;

e) weather conditions at the time of recording the site information and sampling;

f) details about land use, including past and present uses of the site;

g) current site plan, for example the presence of concrete or tarmac pathways, of buildings and remains of demolished buildings, vegetation, refuse, domestic pipelines and underground tanks and services;

h) geology of the site;

i) hydrology of the site, in particular the groundwater regime and fluctuations, soil water conditions, sea water incursions;

j) soil description:

k) any other features and events which might influence the interpretation of the data gathered;

l) details of sources of information which have been consulted (including references to background/source material).

5.5 Quantitative on-site observations including additional and non-intrusive investigations

Information such as strata logs or ground gas profiling and monitoring should be summarized, and where appropriate full information presented in annexes. Details and results of non-intrusive sampling procedures (for example ground-penetrating radar, magnetic surveys, electrical conductivity resistivity surveys, seismic refraction surveys, and infrared photography) should be presented.

5.6 List of parameters recorded on-site and analyses undertaken on site

These might include site survey of elevation, measurements of resistance, infiltration, soil temperature, soil gas sampling and analysis.

5.7 Details concerning the sample

The following details concerning the sample shall be provided:

a) exact geographic location of the sample;

b) design of the sampling plan and location of the samples[1)];

c) safety precautions taken[1)];

d) whether the sample is disturbed or undisturbed[1)];

e) tools used to obtain the samples[1)];

f) depth of sample, including upper and lower limits of the horizon/layer if the sample is taken as a representative sample of the layer;

g) volume of sample;

h) whether a single or composite sample; if composite, give the number and distribution of sampling points;

i) moisture status of sample when collected (for further information, see ISO 11259);

j) sample containers used (e.g. polyethylene buckets, wide-mouthed bottles, strong bags);

k) labelling; once a sample is obtained, it shall be clearly and uniquely labelled[1)];

l) once sampled, a “chain of custody” shall be established and fully documented. This is essential if the samples and analytical results are required for legal purposes;

m) qualitative information about the samples, to reflect subjective observations, for example smell, pore distribution in undisturbed soil cores, colour or other observations. Categories might include:

— not detectable (below detection limit);

— detectable;

— readily detectable.

5.8 Transport and storage of samples

Full details of transport and sample storage conditions shall be recorded (temperature, light, humidity, type of bottle, duration of transport, etc.).

1) For further information, see the relevant parts of ISO 10381.