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# Environmental management — Requirements with guidance for verification and validation of water statements

*Management environnemental — Exigences et recommandations pour la vérification et la validation des déclarations relatives à l'eau*

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 2, *Environmental auditing and related environmental investigations*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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# Introduction

## 0.1 Background

Water is vital for supporting life on Earth. It is important for continued health and wellbeing as well as for a sustainable economy and environment.

Water is a growing global concern. Demand for water continues to rise exponentially because of increasing population, industrial development, energy demands and agriculture. Water supplies are becoming more erratic and uncertain, and degrading water quality can add to this uncertainty. The current rate of water use is unsustainable.

Water is necessary for all ecosystems. In water-stressed countries/regions, during droughts and in areas where water resources are scarce, it is extremely important to ensure access to water supplies. As a result, water stewardship is necessary to sustain the natural water cycle, which is interlinked with the Earth's climate and ecosystems.

Organizations are beginning to evaluate water risk and potential impacts on operations. Financial institutions and investment firms are evaluating climate-change-related business risks and are factoring water risks into investment and credit ratings and in evaluation of green investments.

The importance of water issues is recognized by the United Nations (UN) and reflected in several of the UN Sustainable Development Goals (SDGs). Water management policies are important for achieving global poverty alleviation goals, facilitating climate change adaptation, and expanding international cooperation and capacity-building support in developing countries, and will require implementation of integrated water resources management at all levels, including through transboundary cooperation. Water management policies are important to ensure a sufficient and constant supply of water under increasing scarcity.

Water initiatives related to measuring and evaluation of risks rely on reliable and credible science-based information. This growing need to evaluate and manage water risks requires confidence in water information, and is resulting in a need for verification and validation of water statements.

## 0.2 Approach of this document

This document provides the requirements and guidance for verification and validation activity, whether used in combination or independently, that can enable a verifier or validator to issue an opinion on a water statement (or agreed-upon procedures findings) that are attributed to any organization, project or normalized unit (e.g. product). Water information that is subject to verification is historical in nature, while validation relates to the outcome of future events. User(s) of this document are responsible for determining how to apply the requirements of this document in relation to the context and type of the applicable water programme.

This document can be used by first-, second- and third-party water information verifiers and validators, which may be an individual or a body. It is regime neutral, meaning that it can be used for verifying and validating water information statements regardless of the criteria used to develop those water statements. Criteria may be based on, for example, governmental agreements, regulatory requirements, voluntary programme requirements or other compliance obligations.

This document provides requirements and guidance for performing verification and validation of water statements. It is intended to be useful to a broad range of users, including:

— first-, second- and third-party water information verifiers and validators;

— organizations and individuals involved in developing and commissioning water projects;

— organizations conducting internal verification and validation of their water statements;

— organizations involved in water information verifier or validator training;

— voluntary and mandatory water programme administrators;


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— investor, finance and insurance communities;

— regulatory agencies;

— organizations involved in accreditation and conformity assessment.

Applications of this document can include but are not limited to verification and validation of:

— water projects in response to climate adaptation and mitigation measures;

— water projects implemented to meet organizational requirements for water conservation, water quality improvement, or improvements in water use efficiency;

— water projects that enhance or restore water flows to benefit critically dewatered sections of rivers, streams and wetlands and to replenish depleted groundwater supplies;

— municipal and corporate water use information;

— water footprint information based on ISO 14046;

— water information normalized by a relevant unit;

— supply chain water information;

— sustainability report water information;

— water information to support water quality credit trading schemes;

— water information as part of local/municipal, regional or national reporting.

The requirements of this document describe a process for providing assurance to intended users that an organization's or project's water statements are complete, accurate, consistent, transparent and without material discrepancies.

This document:

— describes the process and specific requirements necessary for providing confidence in the outcome of verification and validation of water information but includes considerable guidance and flexibility;

— addresses/considers accounting principles which are necessary for providing rigor and confidence in validation and verification results;

— addresses issues relating to materiality or level of assurance, where applicable;

— discusses the use of risk assessment in designing and carrying out verification and validation investigations (which is critical in designing sampling methods and plans, and in evaluating results of investigations).

The document provides specific requirements and guidance for:

— identification of purpose and intent of the engagement (e.g. verification, validation, other);

— identification and agreement on level of assurance, verification/validation criteria, materiality, scope and boundaries;

— strategic analysis to determine timing and required resources for conducting the verification or validation;

— conducting a risk assessment to facilitate development of a verification/validation plan;

— evidence gathering plan, and appropriate sampling methodologies consistent with the type of engagement, criteria for the engagement and the level of assurance required;

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— conducting the verification/validation, including assessing water information and information systems and controls and related support;

— preparing water information verification and validation opinions and reporting results;

— water information verifier/validator competency requirements.

In this document, the following verbal forms are used:

— “shall” indicates a requirement;

— “should” indicates a recommendation;

— “may” indicates a permission;

— “can” indicates a possibility or a capability.

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# Environmental management — Requirements with guidance for verification and validation of water statements

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## 1 Scope

This document specifies principles, requirements and guidelines for the verification and validation of water statements.

It is applicable to organizational, product and project water statement verification and validation, and can also be used to provide confidence in reported water information on a local, regional or national level.

This document is programme neutral. If a programme is applicable, requirements of that programme are additional to the requirements of this document.

NOTE Legislation can differ from jurisdiction to jurisdiction. It is the user's responsibility to determine how applicable legal requirements relate to this document.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

### 3.1 Terms related to water information

**3.1.1**
**water information**
information supporting a *water statement* (3.3.3) and pertaining to water characteristics important to the *intended user(s)* (3.2.3) such as accessibility to water resources, water use, *water withdrawal* (3.1.5), water degradation, water quality, water availability and water scarcity

**3.1.2**
**water information system**
policies, processes and procedures to establish, manage, maintain and record *water information* (3.1.1)

Note 1 to entry: A water information system can include measurements, spreadsheets, samples, calibration instructions, etc.

[SOURCE: ISO 14064-3:2019, 3.5.1, modified — "water" has replaced "greenhouse gas" and "GHG".]

**3.1.3**
**water project**
activity or activities that alter the conditions of a *baseline* (3.3.1) and which cause changes to water characteristics

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