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An American National Standard

Standard Guide for Collection of Water Temperature, Dissolved-Oxygen Concentrations, Specific Electrical Conductance, and pH Data from Open Channels[1]

This standard is issued under the fixed designation D 6764; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide describes procedures to collect cross-sectional means of temperature, dissolved oxygen, specific electrical conductance, and pH of water flowing in open channels.

1.2 This guide provides guidelines for preparation and calibration of the equipment to collect cross-sectional means of temperature, dissolved oxygen, specific electrical conductance, and pH of water flowing in open channels.

1.3 This guide describes what equipment should be used to collect cross-sectional means of temperature, dissolved oxygen, specific electrical conductance, and pH of water flowing in open channels.

1.4 This guide covers the cross-sectional means of temperature, dissolved oxygen, specific electrical conductance, and pH of fresh water flowing in open channels.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 888 Test Method for Dissolved Oxygen in Water[2]

D 1125 Test Method for Electrical Conductivity and Resistivity of Water[2]

D 1129 Terminology Relating to Water[2]

D 1293 Test Method for pH of Water[2]

D 4410 Terminology for Fluvial Sediment[2]

D 4411 Guide for Sampling Fluvial Sediment in Motion[3]

D 5464 Test Method for pH Measurements of Water of Low Conductivity[2]

3. Terminology

3.1 *Definitions*:

3.1.1 For definitions of terms used in this guide, refer to Terminology D 1129 and D 4410.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *electronic temperature sensor*—an electrical device that converts changes in resistance to a readout calibrated in temperature units. Thermistors and resistance temperature detectors are examples of electronic temperature sensors.

3.2.2 *thermometer*—any device used to measure temperature, consisting of a temperature sensor and some type of calibrated scale or readout device.

4. Summary of Guide

4.1 This guide establishes criteria and describes procedures for the collection of cross-sectional means of temperature, dissolved oxygen (DO), specific electrical conductance (SC), and pH of water flowing in open channels.

4.2 This guide provides only generic guidelines for equipment use and maintenance. Field personnel must be familiar with the instructions provided by equipment manufacturers. There are a large variety of available field instruments and field instruments are being continuously updated or replaced using newer technology. Field personnel are encouraged to contact equipment manufacturers for answers to technical questions.

5. Significance and Use

5.1 This guide describes stabilization criteria for recording field measurements of Temperature, DO, SC, and pH.

5.2 This guide describes the procedures used to calibrate and check meters to be used in the field to records these measurements and the procedures to be use in the field to obtain these data.

5.3 This guide describes quality assurance procedures to be followed when obtaining cross-sectional means of temperature, dissolved oxygen, specific electrical conductance, and pH of water flowing in open channels.

5.4 Field measurement must accurately represent the water flowing in the open channel being measured. Methods need to be used that will result in an accurate representation of the

[1] This guide is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.07 on Sediment, Geomorphology, and Open Channel Flow.

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[2] *Annual Book of ASTM Standards*, Vol 11.01.

[3] *Annual Book of ASTM Standards*, Vol 11.02.

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