



Standard Test Method for In-situ Determination of Turbidity Above 1 Turbidity Unit (TU) in Surface Water¹

This standard is issued under the fixed designation D7937; 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 test method covers the in-situ field measurements of turbidity in surface water. The measurement range is greater than 1 TU and the lesser of 10 000 TU or the maximum measurable TU value specified by the turbidimeter manufacturer.

1.1.1 Precision data was conducted on both real world and surrogate turbidity samples up to about 1000 TU. Many of the technologies listed in this test method are capable of measuring above that provided in the precision section (see Section 16).

1.2 “In-situ measurement” refers in this test method to applications where the turbidimeter sensor is placed directly in the surface water in the field and does not require transport of a sample to or from the sensor. Surface water refers to springs, lakes, reservoirs, settling ponds, streams and rivers, estuaries, and the ocean.

1.3 Many of the turbidity units and instrument designs covered in this test method are numerically equivalent in calibration when a common calibration standard is applied across those designs listed in Table 1. Measurement of a common calibration standard of a defined value will also produce equivalent results across these technologies. This test method prescribes the assignment of a determined turbidity values to the technology used to determine those values. Numerical equivalence to turbidity standards is observed between different technologies but is not expected across a common sample. Improved traceability beyond the scope of this test method may be practiced and would include the listing of the make and model number of the instrument used to determine the turbidity values.

1.4 In this test method, calibration standards are often defined in NTU values, but the other assigned turbidity units, such as those in Table 1 are equivalent. For example, a 1 NTU formazin standard is also a 1 FNU, a 1 FAU, a 1 BU, and so forth.

1.5 This test method was tested on different natural waters and with standards that served as surrogates for samples. It is recommended to validate the method response for waters of untested matrices.

1.6 *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 limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

- D1129 Terminology Relating to Water
- D1193 Specification for Reagent Water
- D2777 Practice for Determination of Precision and Bias of Applicable Test Methods of Committee D19 on Water
- D3864 Guide for On-Line Monitoring Systems for Water Analysis
- D4411 Guide for Sampling Fluvial Sediment in Motion
- D7315 Test Method for Determination of Turbidity Above 1 Turbidity Unit (TU) in Static Mode
- E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods
- E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

¹ This test method is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.07 on Sediments, Geomorphology, and Open-Channel Flow.

Current edition approved Jan. 1, 2015. Published February 2015. DOI: 10.1520/D7937-15.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.