



Standard Practice for Sonic Drilling for Site Characterization and the Installation of Subsurface Monitoring Devices¹

This standard is issued under the fixed designation D6914/D6914M; 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 practice covers procedures for using sonic drilling methods in the conducting of subsurface exploration for site characterization and in the installation of subsurface monitoring devices.

1.2 The use of the sonic drilling method for exploration and monitoring-device installation may often involve preliminary site research and safety planning, administration, and documentation.

1.3 Soil or Rock samples collected by sonic methods are classed as group A or group B in accordance with Practices [D4220](#). Other sampling methods (Guide [D6169](#)) may be used in conjunction with the sonic method to collect samples classed as group C and Group D. Other drilling methods are summarized in Guide [D6286](#).

1.4 *Units*—The values stated in either inch-pound units or SI units [presented in brackets] are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard. Reporting of test results in units other than in-pound shall not be regarded as nonconformance with this practice.

1.5 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice [D6026](#), unless superseded by this standard.

1.6 This practice offers a set of instructions for performing one or more specific operations. It is a description of the present state-of-the-art practice of sonic drilling. It does not recommend this method as a specific course of action. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this practice may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the

standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.

1.6.1 This practice does not purport to comprehensively address all the methods and the issues associated with drilling practices. Users should seek qualified professionals for decisions as to the proper equipment and methods that would be most successful for their site investigation. Other methods may be available for drilling and sampling of soil, and qualified professionals should have the flexibility to exercise judgment as to possible alternatives not covered in this practice. This practice is current at the time of issue, but new alternative methods may become available prior to revisions, therefore, users should consult manufacturers or sonic drilling services providers prior to specifying program requirements.

1.7 *This practice does not purport to address all the safety concerns, if any, associated with its use and may involve use of hazardous materials, equipment, and operations. 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.* For good safety practice, consult applicable OSHA regulations and drilling safety guides.^{2,3,4}

2. Referenced Documents⁵

2.1 *ASTM Standards—Soil Classification:*

[D653 Terminology Relating to Soil, Rock, and Contained Fluids](#)

[D2113 Practice for Rock Core Drilling and Sampling of Rock for Site Exploration](#)

² "Drilling Safety Guide," National Drilling Association.

³ "Drillers Handbook," Thomas C. Ruda and Peter Bosscher, National Drilling Association.

⁴ "Innovative Technology Summary Report," April 1995, U.S. Department of Energy.

⁵ 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.

¹ This practice is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.21](#) on Groundwater and Vadose Zone Investigations.

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