



Standard Guide for Selection of Passive Techniques for Sampling Groundwater Monitoring Wells¹

This standard is issued under the fixed designation D7929; 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 standard provides guidance and information on passive sampling techniques for collecting groundwater from monitoring wells. Passive groundwater samplers are able to acquire a sample at a discrete depth or interval in a well, without the active transport associated with a pump or purge technique (1).² Passive groundwater sampling is a type of no-purge groundwater sampling method where the samplers are left in the well for a predetermined period of time prior to collecting the sample.

1.2 Methods for sampling monitoring wells include low-flow purging and sampling methods, traditional well-volume purging and sampling methods, post-purge grab sampling methods (for example, using a bailer), passive no-purge sampling methods, and active no-purge sampling methods such as using a bailer to collect a sample without purging the well. This guide focuses on passive no-purge sampling methodologies for collecting groundwater samples. These methodologies include the use of diffusion samplers, accumulation samplers, and passive-grab samplers. This guide provides information on the use, advantages, disadvantages, and limitations of each of these passive sampling technologies.

1.3 ASTM Standard D653 provides standard terminology relevant to soil, rock, and fluids contained in them. ASTM Standard D4448 provides a standard guide to sampling groundwater wells, and ASTM Standards D5903 and D6089 provide guides for planning and documenting a sampling event. Groundwater samples may require preservation (Guide D6517), filtration (Guide D6564), and measures to pack and ship samples (Guide D6911). Standard D7069 provides guidance on the quality control and quality assurance of sampling events. ASTM Standard D5092 provides standard practice for the design and installation of groundwater monitoring wells, ASTM Standard D5521 provides a standard guide for devel-

oping groundwater monitoring wells in granular aquifers, and D6452 provides a standard guide for purging methods used in groundwater quality investigations. Consult ASTM Standard D6724 for a guide on the installation of direct-push groundwater monitoring wells and ASTM Standard D6725 for a guide on the installation of direct-push groundwater monitoring wells with pre-pack screens.

1.4 The values stated in SI Units are to be regarded as the standard. Values in inches (such as with well diameters) are given in parentheses, and are provided for information. Use of units other than SI shall not be regarded as nonconforming with this standard.

1.5 This guide provides information on passive groundwater sampling in general and also provides a series of considerations when selecting a passive groundwater sampling method. However, it does not recommend a specific course of action, and not all aspects of this guide may be applicable in all field situations. This document cannot replace education or experience and should be used in conjunction with professional judgment. 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 *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:

D653 Terminology Relating to Soil, Rock, and Contained Fluids

D3740 Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

D4750 Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well (Observation

¹ This test method is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.21.04 on Groundwater Sample Collection and Handling.

Current edition approved Aug. 15, 2014. Published October 2014. DOI: 10.1520/D7929-14.

² The boldface numbers in parentheses refer to the list of references at the end of this standard.