



Standard Guide for Data Assessment for Environmental Waste Management Activities¹

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1. Scope

1.1 This guide covers a practical strategy for examining an environmental project data collection effort and the resulting data to determine if they will support the intended use. It covers the review of project activities to determine conformance with the project plan and impact on data usability. This guide also leads the user through a logical sequence to determine which statistical protocols should be applied to the data.

1.1.1 This guide does not establish criteria for the acceptance or use of data but instructs the assessor/user to use the criteria established by the project team during the planning (data quality objective process), and optimization and implementation (sampling and analysis plan) process.

1.2 *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:

- D 4687 Guide for General Planning of Waste Sampling²
- D 5088 Practice for Decontamination of Field Equipment Used at Nonradioactive Waste Sites³
- D 5283 Practice for Generation of Environmental Data Related to Waste Management Activities: Quality Assurance and Quality Control Planning and Implementation Activities²
- D 5792 Practice for Generation of Environmental Data Related to Waste Management Activities: Development of Data Quality Objectives²
- D 5956 Guide for Sampling Strategies for Heterogeneous Wastes²

D 6044 Guide for Representative Sampling for Management of Waste and Contaminated Media²

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *bias, n*—a systematic error that is consistently negative or consistently positive.

3.1.2 *characteristic, n*—a property of items in a sample or population which can be measured, counted, or otherwise observed.

3.1.3 *composite sample, n*—a physical combination of two or more samples.

3.1.4 *confidence limit, n*—an upper and/or lower limit(s) within which the true value is likely to be contained with a stated probability or confidence.

3.1.5 *continuous data, n*—data where the values of the individual samples may vary from minus infinity to plus infinity.

3.1.6 *data quality objectives (DQOs), n*—DQOs are qualitative and quantitative statements derived from the DQO process describing the decision rules and the uncertainties of the decision(s) within the context of the problem(s).

3.1.7 *data quality objective process, n*—a quality management tool based on the scientific method and developed to facilitate the planning of environmental data collection activities.

3.1.8 *discrete data, n*—data made up of sample results that are expressed as a simple pass/fail, yes/no, or positive/negative.

3.1.9 *heterogeneity, n*—the condition of the population under which all items of the population are not identical with respect to the parameter of interest.

3.1.10 *homogeneity, n*—the condition of the population under which all items of the population are identical with respect to the parameter of interest.

3.1.11 *population, n*—the totality of items or units under consideration.

3.1.12 *representative sample, n*—a sample collected in such a manner that it reflects one or more characteristics of interest (as defined by the project objectives) of a population from which it is collected.

¹ This guide is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.01 on Planning for Sampling.

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² *Annual Book of ASTM Standards*, Vol 11.04.

³ *Annual Book of ASTM Standards*, Vol 04.09.