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Standard Guide for Part-Stream Sampling of Coal¹

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1. Scope

1.1 This guide covers general principles for obtaining a gross sample of coal by taking increments from part of a stream of coal rather than from the entire stream to be sampled. The usefulness of results from this guide will vary greatly depending on such factors as top size of the coal, size consistency of the coal, variability of the coal, and such logistical factors as the flow rate of the coal in process and physical accessibility of the sampling station.

1.2 This guide should be used only when it is not possible to use a method of sampling that produces a probability sample.

1.3 Sample preparation procedures involving crushing are contained in Practice D2013.

1.4 The values stated in SI units are to be regarded as standard. The values in parentheses are for information only.

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:*²

D121 Terminology of Coal and Coke

D2013 Practice for Preparing Coal Samples for Analysis

D2234/D2234M Practice for Collection of a Gross Sample of Coal

E456 Terminology Relating to Quality and Statistics

2.2 *Federal Standards:*

Federal Mine and Safety and Health Act of 1977³

Occupational Safety and Health Act of 1970³

¹ This guide is under the jurisdiction of ASTM Committee D05 on Coal and Coke and is the direct responsibility of Subcommittee D05.23 on Sampling.

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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.

³ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.

3. Terminology

3.1 *Definitions*—For additional definitions of terms, refer to Terminology D121, Practice D2013, Terminology E456, and Practice D2234/D2234M.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *part-stream sampling, n*—a method of coal sampling in which collection of individual increments does not encompass the full cross section of the coal stream.

4. Summary of Guide

4.1 Part-stream sampling is accomplished by collecting increments from part of a stream of coal for the purpose of acquiring a gross sample.

5. Significance and Use

5.1 This guide provides instructions for sampling by collecting individual increments from part of a cross section of a moving stream of coal, as opposed to collection of individual increments by removal of a full cross section of material. The use of part-stream sampling, and the detailed procedures for each case, should be agreed upon in advance by all parties concerned. Samples collected by use of this guide are not probability samples. The user is cautioned that samples of this type do not satisfy the minimum requirements for probability sampling and as such cannot be used to obtain any meaningful statistical inferences such as the sampling precision, standard error, or bias.

5.2 All parties should be cautioned that manual sampling of coal from a moving stream might not enable sampling of the material that is furthestmost from the point of entry into stream by the sampling device.

6. Increment Collection Classification

6.1 Three distinct classifications of part-stream sampling methods are recognized by this guide, in order of preference, as listed below:

6.1.1 *Condition C-1*—The case in which groups of successive part-stream increments are taken so that the increments within each group encompass the full cross section of the coal stream.