METHOD DATA STANDARD

Standard No.: EX000011.1

January 6, 2006

**This standard has been produced through the
Environmental Data Standards Council (EDSC).**

Foreword

The Environmental Data Standards Council identifies, prioritizes and pursues the creation of data standards for those areas where information exchange standards will provide the most value in achieving environmental results. The Council involves Tribes and Tribal Nations, state and federal agencies in the development of the standards and then provides the draft materials for general review. Business groups, non-governmental organizations, and other interested parties may then provide input and comment for Council consideration and standard finalization. Draft and final standards are available at http://www.envdatastandards.net.

1.0   INTRODUCTION

This Method Data Standard identifies and references the methods, procedures, and techniques for performing an activity (e.g., sampling, chemical analysis, and quantification).

1.1   Scope

This standard provides and describes data groupings that are used to exchange data and information about methods, procedures, and techniques for performing an activity (e.g., sampling, chemical analysis, and quantification).

1.2   Revision History

Date	Version	Description
January 6, 2006	EX000011.1	Initial Environmental Data Standards Council Adoption

1.3   References to Other Data Standards

This standard relies on other standards to make it complete and provide the necessary support. As such users should consider the references to others data standards noted below as integral to the Method Data Standard. These include:
- Bibliographic Reference [EX000007.1] Data Standard
- ISO 15836:2003 Information and Documentation – Dublin Core Metadata Element Set

1.4   Terms and Definitions

For the purposes of this document, the following term and definition apply.

Term   **Definition**

Method	A body of procedures and techniques for performing an activity (e.g., sampling, chemical analysis, and quantification) systematically presented in the order in which they are to be executed [source: ANSI/ASQ E4-2004 Quality systems for environmental data and technology programs – Requirements with guidance for use].

1.5   Implementation

Users are encouraged to use the XML registry housed on the Exchange Network Web site to download schema components for the construction of XML schema flows (http://www.exchangenetwork.net).

1.6   Document Structure

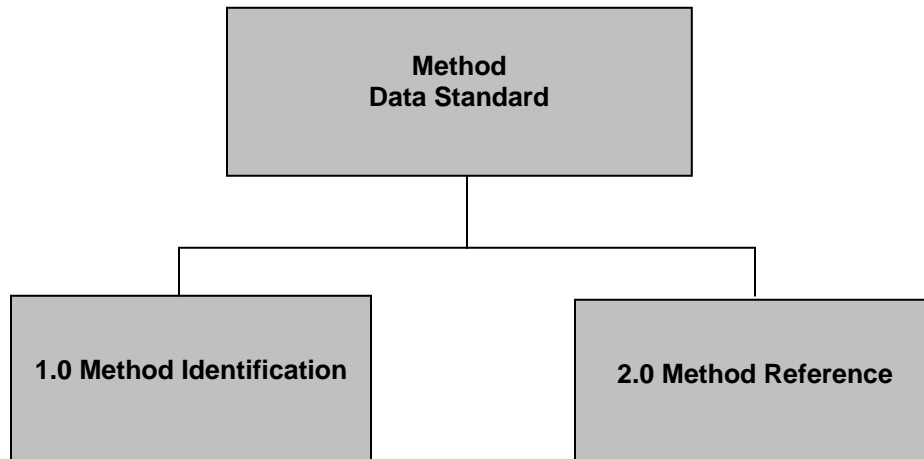The structure of this document is briefly described below:

a. Section 2.0 Method Data Standard Diagram, illustrates the principal data groupings contained within this standard.

b. Section 3.0 Method Data Standard Table, provides information on the high level, intermediate and elemental method data groupings. Where applicable, for each level of this data standard a definition, XML tag, note(s), example list of values and format are provided. The format column may include "A" to specify alphanumeric, "N" to designate numeric, "G" to denote a grouping, and "D" for time and date formats referenced in the Representation of Date and Time Data Standard.

c. Data Element Numbering: For purposes of clarity and to enhance understanding of data standard hierarchy and relationships, each data group is numerically classified from the primary to the elemental level.

d. Code and Identifier Metadata: Metadata, defined here as data about data or data elements, includes their descriptions and/or any needed context setting information required to identify the origin, conditions of use, interpretation, or understanding the information being exchanged or transferred. (Adapted from ISO/IEC 2382-17:1999 Information Technology Vocabulary—Part 17: Databases 17.06.05 metadata). Based on the business need, additional metadata may be required to sufficiently describe an identifier or a code. A note regarding this additional metadata is included in the notes column for identifier and code elements. Additional metadata for identifiers may include:

- Identifier Context, which identifies the source or data system that created or defined the identifier.

Additional metadata for codes may include:

- Code List Identifier, which is a standardized reference to the context or source of the set of codes.

- Code List Version Identifier, which identifies the particular version of the set of codes.

- Code List Version Agency Identifier, which identifies the agency responsible for maintaining the set of codes.

- Code List Name, which describes the corresponding name for which the code represents Appendix A Method Data Standard Structure Diagram illustrates the hierarchical classification of the Method Data Standard. This diagram enables business and technical users of this standard to quickly understand its general content and complexity.

e. Appendix A, Method Data Standard Structure Diagram illustrates the hierarchical classification of the method data standard. This diagram enables business and technical users of this standard to quickly understand its general content and complexity. Appendix B, lists the references for the Method Data Standard.

2.0   METHOD DATA STANDARD DIAGRAM

This diagram specifies the major data groups that may be used to identify the characteristics or catalog the methods.

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                    ┌─────────────────────────┐
                    │         Method          │
                    │      Data Standard       │
                    └────────────┬─────────────┘
             ┌───────────────────┴──────────────────┐
   ┌─────────────────────────┐          ┌─────────────────────────┐
   │ 1.0 Method Identification │        │  2.0 Method Reference    │
   └─────────────────────────┘          └─────────────────────────┘
```

3.0   METHOD DATA STANDARD TABLE

1.0   Method Identification

Definition: Identifies the procedures/ processes and references required to determine the methods used to obtain a result.
Relationship: None.
Notes: None.
XML Tags: MethodIdentification

Data Element Name	Data Element Definition	Notes	Format	XML Tag
1.1 Method Identifier	The identification number assigned by the method publisher.	Example List of Values: • 3540C • MOM grab • 200.7 • 8260B • PM_{10} (0 to 10 microns) at STP. Method Number 071 Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in the Introduction Section, 1.6.d, above.	A	MethodIdetifier

Data Element Name	Data Element Definition	Notes	Format	XML Tag
1.2 Method Name	The title that appears on the method from the method publisher.	Example List of Values: • Soxhlet Extraction • Surface grab sampling procedure • Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry • Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) • Gravimetric analysis of PM_{10} samples collected on a quartz filter	A	MethodName
1.3 Method Qualifier Type	Identifier of type of method that identifies it as reference, equivalent or other.	Example List of Values: • Referenced • Non-referenced • Equivalent • Approved alternative	A	MethodQualifierType
1.4 Method Qualifier Text	Unique qualifier that further defines the Method Qualifier Type.	Example List of Values: • Reference method identifier for PM_{10} method or instrument (RFPS-0389-071)	A	MethodQualfierText

Data Element Name	Data Element Definition	Notes	Format	XML Tag
1.5 Method Description Text	A brief summary that provides general information about the method.	Example List of Values: • Procedure for extracting nonvolatile and semi-volatile organic compounds from soils, sludges and wastes • Procedure for collecting the most representative sample from a water body • Total recoverable metals by ICP in water • Method used to determine volatile organic compounds in a variety of solid waste matrices • Procedure for collection and analysis of PM_{10} samples	A	MethodDescriptionText
1.6 Method Type	Identifier of the type or category of method.	Example List of Values: • Preparation (extraction) • Collection • Preservation, digestion & analysis • Testing • Field measurement, collection and analysis	A	MethodType

Data Element Name	Data Element Definition	Notes	Format	XML Tag
1.7 Method Deviation Text	Text that identifies any deviations from the published method reference.	Example List of Values: • Used PE multi-component spectral filtering instead of inter-element correction factors prescribed by method.	A	MethodDeviationText

2.0   Method Reference

Definition: Elements or attributes that describe the bibliographic reference for the method.
Relationship: None.
Note: Reference the **Bibliographic Reference [EX000007.1] Data Standard**.
XML Tag: MethodReference

Appendix A
Method Data Standard Structure Diagram

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                      ┌─────────────────────────┐
                      │         Method          │
                      │      Data Standard       │
                      └─────────────────────────┘
                                   │
                ┌──────────────────┴──────────────────┐
                │                                      │
   ┌────────────────────────────┐      ┌────────────────────────────┐
   │ 1.0 Method Identification  │      │   2.0 Method Reference     │
   │ 1.1  Method Identifier     │      │                            │
   │ 1.2  Method Name           │      │                            │
   │ 1.3  Method Qualifier Type │      └────────────────────────────┘
   │ 1.4  Method Qualifier Text │
   │ 1.5 Method Description Text │
   │ 1.6 Method Type            │
   │ 1.7 Method Deviation Text  │
   └────────────────────────────┘
```
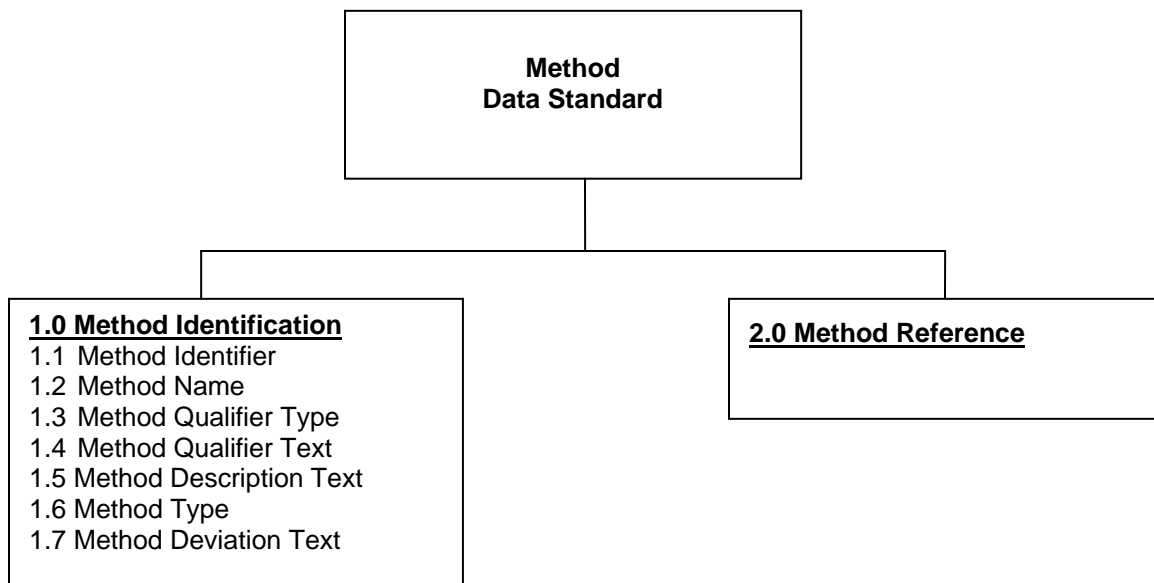
Appendix B
References

i. *ISO/IEC 2382-17:1999 Information Technology Vocabulary—Part 17: Databases 17.06.*
ii. *ISO 15836:2003 Information and Documentation – Dublin Core Metadata Element Set*