FINAL
ENVIRONMENTAL SAMPLING, ANALYSIS AND RESULTS: ANALYSIS AND RESULTS

Standard No.: EX000005.2

February 4, 2010

Approved on February 4, 2010 by the Exchange Network Leadership Council for use on the Environmental Information Exchange Network

Approved on February 4, 2010 by the Chief Information Officer of the U. S. Environmental Protection Agency for use within U. S. EPA

This consensus standard was developed in collaboration by State, Tribal, and U. S. EPA representatives under the guidance of the Exchange Network Leadership Council and its predecessor organization, the Environmental Data Standards Council.
Foreword
The Exchange Network Leadership Council (ENLC) is a partnership among US EPA, States and Tribal partners to develop and agree upon data standards for environmental information collection and exchange. The Council seeks to promote efficient sharing of environmental information between State, US EPA and Tribal partners through the development of data standards. Access to this data standard, as well as further information about data standards is available at www.exchan genetwork.net and www.epa.gov/datastandards.

1.0 INTRODUCTION
Environmental information is a key tool in the effective management of our environmental resources and human health conditions. As a result, much effort goes into data acquisition, management, maintenance, exchange, and oversight. Greater access is the goal of many data consumers, and data managers. Providers invest significant resources meeting their requirements. In response, many data providers are improving access as they post usable copies of their environmental information on the web. These efforts are a vast improvement over previous conditions; however, there is a growing desire and need to both provide and receive data in a clearly defined and a uniform way. Data from multiple sources can then be aggregated and used without the inherent variations that exist between data sets across agencies.

1.1 Scope
This standard provides and describes elements and data groupings that are used to catalogue and exchange information about sample analysis and results.

1.2 Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 6, 2006</td>
<td>EX000005.1</td>
<td>Initial Environmental Data Standards Council Adoption</td>
</tr>
<tr>
<td>February 4, 2010</td>
<td>EX000005.2</td>
<td>Modification of data standard to incorporate additional water quality and biological data elements.</td>
</tr>
</tbody>
</table>

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 other data standards noted below as integral to the ESAR: Analysis and Results Data Standard. These include:

- Biological Taxonomy [EX000018.2] Data Standard
- Chemical Identification [EX000016.2] Data Standard
- Contact Information [EX000019.2] Data Standard
- Attached Binary Object [EX000006.1] Data Standard
- Compositing [EX000008.1] Data Standard
- Equipment [EX000009.1] Data Standard
- Measure [EX000010.1] Data Standard
- Method [EX000011.1] Data Standard
- Sample Handling [EX000014.1] Data Standard
- Representation of Date and Time [EX000013.1] Data Standard
1.4 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory</td>
<td>A mobile or fixed facility equipped for testing and analysis.</td>
</tr>
<tr>
<td>Laboratory Analysis</td>
<td>Analytical results that are generated in the field from continuous or discrete observation /monitoring and/or from mobile or fixed laboratory facilities.</td>
</tr>
</tbody>
</table>

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 ESAR: Analysis and Results Diagram illustrates the principal data groupings contained within this standard.

b. Section 3.0 ESAR: Analysis and Results Table provides information on the high level, intermediate and elemental Analysis and Results 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:

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

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

e. Appendix A, ESAR: Analysis and Results Structure Diagram, illustrates the hierarchical classification of the 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 ESAR Analysis and Results Data Standard.
2.0 ENVIRONMENTAL SAMPLING, ANALYSIS AND RESULTS: ANALYSIS AND RESULTS DIAGRAM

This diagram specifies the major data groups that may be used to identify the characteristics and/or to catalog ESAR: Analysis and Results.
### 3.0 ENVIRONMENTAL SAMPLING, ANALYSIS AND RESULTS: ANALYSIS AND RESULTS DATA STANDARD TABLE

#### 1.0 Laboratory Identification

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Laboratory Identifier</td>
<td>A designator used to uniquely identify the laboratory doing the analysis.</td>
<td>Note: 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.</td>
<td>A</td>
<td>LaboratoryIdentifier</td>
</tr>
<tr>
<td>1.2 Laboratory Organization Contact</td>
<td>The principal organization to contact with questions about this laboratory analysis data.</td>
<td>Refer to the Contact Information [EX000019.2] Data Standard. The following items may be needed: Individual Full Name Organization Formal Name Affiliation Type Mailing Address Supplemental Address Text Mailing Address City Name Mailing Address State Name Mailing Address State Code Mailing Address Country Name, Mailing Address Country Code Mailing Address Zip Code/International Postal Code Telephone Number Telephone Number Type name Electronic Address Text Electronic Address Type Name</td>
<td>G</td>
<td>LaboratoryOrganizationContact</td>
</tr>
</tbody>
</table>
## Data Element Name

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3 Laboratory Type Text</td>
<td>The classification of the laboratory.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>LaboratoryTypeText</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Continuous monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Field</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mobile</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fixed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4 Laboratory Accreditation Authority Name</td>
<td>An outside accreditation authority identifier.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>LaboratoryAccreditationAuthorityName</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NELAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A2LA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Nebraska DEQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5 Laboratory Accreditation Identifier</td>
<td>The number given to the laboratory by the accreditation authority.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>LaboratoryAccreditationIdentifier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Certificate No. 1234-01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• US100002-001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.0 Laboratory Batch Receipt

**Definition:** Information concerning the arrival of a batch of samples to the lab.

**Relationships:** None.

**Notes:** None.

**XML Tag:** LaboratoryBatchReceipt

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Batch Receipt Identifier</td>
<td>A designator assigned by the laboratory used to identify a group of samples received by the laboratory that will allow the batch to be linked with the applicable sample, monitoring location, project, and result.</td>
<td><em>Note</em>: 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.</td>
<td>A</td>
<td>BatchReceiptIdentifier</td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>2.2 Batch Recipient</td>
<td>An identifier or name of the person accepting the batch.</td>
<td>Refer to the Contact Information [EX000019.2] Data Standard.</td>
<td>G</td>
<td>BatchRecipient</td>
</tr>
<tr>
<td></td>
<td>The following items may be needed:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individual Full Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organization Formal Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Affiliation Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supplemental Address Text</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing Address City Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing Address State Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing Address State Code</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing Address Country Name, Mailing Address Country Code</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mailing Address Zip Code/International Postal Code</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone Number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone Number Type name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Address Text</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Address Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3 Batch Received Date</td>
<td>The calendar date when the batch was accepted at the laboratory.</td>
<td>Reported as 4-digit year, 2-digit month, and 2-digit day.</td>
<td>D</td>
<td>BatchReceivedDate</td>
</tr>
<tr>
<td></td>
<td>The Representation of Date and Time [EX000013.1] Data Standard will apply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>anytime a date is reported.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4 Batch Received Time</td>
<td>The local time when the batch was accepted at the laboratory.</td>
<td>The Representation of Date and Time [EX000013.1] Data Standard will apply anytime a date is reported.</td>
<td>D</td>
<td>BatchReceivedTime</td>
</tr>
<tr>
<td>2.5 Number of Shipping Containers Received</td>
<td>The quantity of shipping containers received within a batch.</td>
<td></td>
<td>N</td>
<td>NumberShippingContainersReceivedNumeric</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>--------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>2.6 Sample Count Received in Batch Text</td>
<td>The quantity of samples in the batch (each with a unique Sample Identifier from Field Activity 7.1) received by the laboratory.</td>
<td>Example List of Values: • 10 amber jars</td>
<td>A</td>
<td>SamplesCountReceivedInBatchText</td>
</tr>
<tr>
<td>2.7 Batch Receipt Exception Indicator</td>
<td>A flag indicating an exception to the condition or expected batch receipt procedures that might affect analytical results.</td>
<td>Permitted List of Values: • Y - yes • N - no</td>
<td>A</td>
<td>BatchReceiptExceptionIndicator</td>
</tr>
<tr>
<td>2.8 Batch Receipt Comment Text</td>
<td>Text describing the reason for the &quot;Batch Receipt Exception Indicator&quot; being set to Y, or other characteristics of the batch that should be noted if the &quot;Batch Receipt Exception Indicator&quot; being set to N.</td>
<td>This will be required if the &quot;Batch Receipt Exception Indicator&quot; data element is &quot;Y&quot;. Example List of Values: Cooler seals broken upon arrival</td>
<td>A</td>
<td>BatchReceiptCommentText</td>
</tr>
</tbody>
</table>

### 3.0 Laboratory Sample Receipt

**Definition:** Information concerning the receipt and condition of sample(s) in a batch by the laboratory.

**Relationships:** None.

**Notes:** None.

**XML Tag:** LaboratorySampleReceipt

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
</table>
| 3.1 Laboratory Sample Identifier              | A designator assigned to a sample by the laboratory that will ensure that each received sample can be linked with the applicable monitoring location, project and result.                                                   | Note: Sample Identifier from Field Activity 7.1, must be linked to this element.  
Note: 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. | A      | LaboratorySampleIdentifier        |
3.2 Sample Receipt Condition

Definition: Identifying information on the acceptability of sample condition and preservation upon receipt at laboratory.
Relationships: None.
Notes: None.
XML Tag: SampleReceiptCondition

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2.1 Condition Measured Text</td>
<td>Identifies observations or measurements noted for the sample when received.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>ConditionMeasuredText</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• pH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Chlorine residual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2.2 Condition Measurement</td>
<td>Quantitative measurement of the condition being determined.</td>
<td>Refer to the Measure [EX000010.1] Data Standard.</td>
<td>G</td>
<td>ConditionMeasurement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following items may be needed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Measure Value,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Measure Unit Code,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Measure Qualifier Code,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Measure QA/QC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2.3 Container Receipt Condition Comment Text</td>
<td>Text that describes any observable problems with the sample’s condition as received by the laboratory.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>ContainerReceiptConditionCommentText</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sample jar was cracked from partial thaw in cooler</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.0 Laboratory Sample Handling

Definition: Identifying information on the sample handling procedures performed in the laboratory prior to preparing a sample for analysis.
Relationships: None.
Notes: Note 1: Multiple treatments may be identified. Example treatment types include: freezing, homogenization, centrifugation, filtration or chemical surrogate addition.
Note 2: Sample handling is distinct from sample preparation.
Note 3: Reference the Sample Handling [EX000014.1] Data Standard
The following items may be needed:
Sample Handling Method
Sample Handling Amount
Sample Handling Date/Time
Chemical Preservative Used
Thermal Preservative Used

Note 4: When laboratory sample handling procedures involve sample compositing, additional data tracking may be required to fully capture the field composite activities and composite components. Please refer to the Compositing [EX000008.1] Data Standard for these additional data elements.

XML Tag: LaboratorySampleHandling

5.0 Sample Preparation

Definition: Information related to the preparation of the sample for analysis.
Relationships: None.
Notes: None.
XML Tag: SamplePreparation

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Preparation Contact</td>
<td>The name or code representing the person who can be contacted for information concerning the preparation of the sample.</td>
<td>Refer to the Contact Information [EX000019.2] Data Standard. The following items may be needed: Individual Full Name Organization Formal Name Affiliation Type Mailing Address Supplemental Address Text Mailing Address City Name Mailing Address State Name Mailing Address State Code Mailing Address Country Name, Mailing Address Country Code Mailing Address Zip Code/International Postal Code Telephone Number Telephone Number Type name Electronic Address Text Electronic Address Type Name</td>
<td>G</td>
<td>PreparationContact</td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>5.2 Preparation Type Text</td>
<td>A client defined code or name used to define the type of preparation.</td>
<td><em>Note:</em> This code is used to identify the specific preparation procedure used.</td>
<td>A</td>
<td>PreparationTypeText</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Example List of Values:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Extraction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Digestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Clean-up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3 Sample Preparation Method</td>
<td>Identifying information about the method(s) followed to prepare a sample for analysis.</td>
<td>Refer to the <a href="#">Method [EX000011.1] Data Standard</a>. The following items may be needed: Method Identifier, Method Name, Method Description Text, Method Deviation, Method Reference</td>
<td>G</td>
<td>SamplePreparationMethod</td>
</tr>
<tr>
<td>5.4 Preparation Batch Identifier</td>
<td>A designator assigned by the laboratory to uniquely identify a batch of samples that are prepared together for analysis by one method.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>PreparationBatchIden</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• MB-VOA-20031115</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Note:</em> Together it can imply similarity of time, place or manner of preparation. The identifier will ensure that each received sample and subsequent results will be related to the monitoring location and project if applicable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Note:</em> 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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------</td>
<td>-------</td>
<td>--------</td>
<td>----------</td>
</tr>
<tr>
<td>5.5 Preparation Start Date</td>
<td>The calendar date of the preparation/extraction of the sample for analysis began.</td>
<td><em>Note:</em> If the sample was prepared over a range of dates, this is the start date. Reported as 4-digit year, 2-digit month, and 2-digit day. The <strong>Representation of Date and Time [EX000013.1] Data Standard</strong> will apply anytime a date is reported.</td>
<td>D</td>
<td>PreparationStartDate</td>
</tr>
<tr>
<td>5.6 Preparation Start Time</td>
<td>The local time when the preparation/extraction of the sample for analysis began.</td>
<td><em>Note:</em> If the sample was prepared over a range of time, this is the start time. The <strong>Representation of Date and Time [EX000013.1] Data Standard</strong> will apply anytime a date is reported.</td>
<td>D</td>
<td>PreparationStartTime</td>
</tr>
<tr>
<td>5.7 Preparation End Date</td>
<td>The calendar date when the preparation/extraction of the sample for analysis was finished.</td>
<td><em>Note:</em> If the sample was prepared/extracted over a range of dates, this is the end date. Reported as 4-digit year, 2-digit month and 2-digit day. The <strong>Representation of Date and Time [EX000013.1] Data Standard</strong> will apply anytime a date is reported.</td>
<td>D</td>
<td>PreparationEndDate</td>
</tr>
<tr>
<td>5.8 Preparation End Time</td>
<td>The local time when the preparation/extraction of the sample for analysis was finished.</td>
<td><em>Note:</em> If the sample was prepared/extracted over a range of times, this is the end time. The <strong>Representation of Date and Time [EX000013.1] Data Standard</strong> will apply anytime a date is reported.</td>
<td>D</td>
<td>PreparationEndTime</td>
</tr>
<tr>
<td>5.9 Sample Preparation Initial Amount</td>
<td>The initial amount (weight or volume) of sample subjected to preparation.</td>
<td>Refer to the <strong>Measure [EX000010.1] Data Standard</strong>. The following items may be needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC</td>
<td>G</td>
<td>SamplePreparationInitialAmount</td>
</tr>
</tbody>
</table>
### 5.10 Sample Preparation Final Amount

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
</table>
| 5.10 Sample Preparation Final Amount | The final amount (weight or volume) of sample remaining as the result of preparation step(s). | Refer to the Measure [EX000010.1] Data Standard.  
The following items may be needed:  
Measure Value  
Measure Unit Code  
Measure Qualifier Code  
Measure QA/QC | G      | SamplePreparationFinalAmount |

#### 6.0 Analysis Information

**Definition:** Identifying information on the analysis method and procedures for a specific sample or group of samples.

**Relationships:** None.

**Notes:** None.

**XML Tag:** AnalysisInformation
<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Analysis Contact</td>
<td>The name or code representing the person who can be contacted concerning information related to the analysis results.</td>
<td>Refer to the <strong>Contact Information [EX000019.2] Data Standard</strong>. The following items may be needed: Individual Full Name, Organization Formal Name, Affiliation Type, Mailing Address, Supplemental Address Text, Mailing Address City Name, Mailing Address State Name, Mailing Address State Code, Mailing Address Country Name, Mailing Address Country Code, Mailing Address Zip Code/International Postal Code, Telephone Number, Telephone Number Type name, Electronic Address Text, Electronic Address Type Name. Note: 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.</td>
<td>G</td>
<td>AnalysisContact</td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
<td>------------------------</td>
</tr>
</tbody>
</table>
| 6.2 Analysis Batch Identifier | A designator assigned by the laboratory used to uniquely identify a batch of analyses performed on one instrument associated with the level of detail at which the instrument is checked to be in control.               | Example List of Values:  
  - 26C030598  
  
  *Note: A workgroup ID for analyses QC’d by the same continuing calibration, continuing calibration verification, or similar instrument QC. If multiple batches are analyzed in a continuous sequence, this represents the start of any given analysis batch. The identifier will ensure that each received sample and subsequent results will be related to the monitoring location and project if applicable.  
  *Note: 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. |
|                           |                                                                                                                                                                                                                           |                                                                                                                                                                                                       | A      | AnalysisBatchIdentifier |
| 6.3 Sample Analytical Method | Identifying information on the sample analysis method procedures.                                                                                                                                                       | Reference the Method [EX000011.1] Data Standard.  
  The following items may be needed:  
  Method Identifier  
  Method Name  
  Method Description Text  
  Method Deviation  
  Method Reference                                                                 | G      | SampleAnalyticalMethod |
<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
</table>
| 6.4 Analysis Equipment    | Lab defined identifier or description of the instrument or equipment used for analysis.  | Refer to the **Equipment [EX000009.1] Data Standard.**  
The following items may be needed:  
Equipment Identifier  
Equipment Name  
Equipment Description  
Equipment Type  
Equipment Characteristics  
Equipment Calibration  
Example List of Values:  
- ICP  
- GC/MS-Lab 1                                                                 | G      | AnalysisEquipment |
| 6.5 Analysis Group Type Text | Name for a group of parameters commonly reported together either for a programmatic, administrative, or chemical relationships. | Also potentially called “Group Test Code” or “Test Identifier Text”.  
Example List of Values:  
- VOA  
- RCRA 8 metals  
- Nutrients                                                                 | A      | AnalysisGroupTypeText |
| 6.6 Analysis Matrix Text  | Name, code, or description of the matrix of the sample analyzed.                        | Example List of Values:  
- Liquid  
- Solid  
- Gaseous  
- Biota  
- Tissue                                                                 | A      | AnalysisMatrixText |
<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.7 Sample Analyzed Amount</td>
<td>The amount (weight or volume) of a prepared extract that is used for analysis.</td>
<td>Refer to the Measure [EX000010.1] Data Standard. The following items may be needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC</td>
<td>G</td>
<td>SampleAnalyzedAmount</td>
</tr>
<tr>
<td>6.8 Analysis Start Date</td>
<td>The calendar date when the analysis began.</td>
<td>Reported as 4-digit year, 2-digit month, and 2-digit day. The Representation of Date and Time [EX000013.1] Data Standard will apply anytime a date is reported.</td>
<td>D</td>
<td>AnalysisStartDate</td>
</tr>
<tr>
<td>6.9 Analysis Start Time</td>
<td>The local time when the analysis began.</td>
<td>The Representation of Date and Time [EX000013.1] Data Standard will apply anytime a date is reported.</td>
<td>D</td>
<td>AnalysisStartTime</td>
</tr>
<tr>
<td>6.10 Analysis End Date</td>
<td>The calendar date when the analysis was finished.</td>
<td>Reported as 4-digit year, 2-digit month, and 2-digit day. The Representation of Date and Time [EX000013.1] Data Standard will apply anytime a date is reported.</td>
<td>D</td>
<td>AnalysisEndDate</td>
</tr>
<tr>
<td>6.11 Analysis End Time</td>
<td>The local time when the analysis was finished.</td>
<td>The Representation of Date and Time [EX000013.1] Data Standard will apply anytime a date is reported.</td>
<td>D</td>
<td>AnalysisEndTime</td>
</tr>
<tr>
<td>6.12 Analysis Comments Text</td>
<td>General comments for the analysis, not necessarily related to a particular substance.</td>
<td>Example List of Values: • Noticed sample darkened in color after sitting for 18 hours</td>
<td>A</td>
<td>AnalysisCommentsText</td>
</tr>
</tbody>
</table>
7.0 Substance Identification

Definition: Identification information for a chemical, biological, or radiological substance or other entity included in the analysis.

Relationships: None.

Notes: Multiple values may be allowed.

For additional detailed data tracking needs specific to a chemical or biological substance, refer to the Chemical Identification [EX000016.2] Data Standard and Biological Taxonomy [EX000018.2] Data Standard.

XML Tag: SubstanceIdentification

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
</table>
| 7.1 Substance Identifier | A designator used to uniquely identify a substance. | Example List of Values:  
  - 71-43-2  
  - 7440-38-2  
  *Note:* Refer to the Chemical Identification Data Standard and the Biological Identification Data Standard  
  *Note:* 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. | A | SubstanceIdentifier |
| 7.2 Substance Name | The name assigned to a chemical, biological or radiological substance or feature that describes it in terms of its molecular composition, taxonomic nomenclature or other characteristic. | Example List of Values:  
  - Benzene  
  - Arsenic  
  *Note:* Refer to the Chemical Identification [EX000016.2] Data Standard and Biological Taxonomy [EX000018.2] Data Standard. | G | SubstanceName |

8.0 Analysis Results Identification

Definition: The report of the results of the laboratory analysis.

Relationships: None.

Notes: None.

XML Tag: AnalysisResultsIdentification
<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Test Result Type</td>
<td>Indicator of the kind of test result being reported.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>TestResultTy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Analytical target</td>
<td></td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Analytical surrogate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Field</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tentatively Identified Compounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Derived data</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Positive Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.2 Result Value Measure</td>
<td>The reportable measure of the result for the chemical, microbiological or other characteristic being analyzed.</td>
<td>Reference the <strong>Measure [EX000010.1] Data Standard</strong>. The following items may be needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC</td>
<td>G</td>
<td>ResultValueMeasure</td>
</tr>
<tr>
<td>8.3 Result Basis Category</td>
<td>Type of result basis.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>ResultBasisCategoryType</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fraction</td>
<td></td>
<td>Category</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Particle Size</td>
<td></td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> Multiples of Result Basis Category and Result Basis Name may be allowed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4 Result Basis Name</td>
<td>The basis upon which the results were calculated, within the Result Basis Category.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>ResultBasisName</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Wet</td>
<td></td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dissolved</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> Multiples of Result Basis Category and Result Basis Name may be allowed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>8.5 Result Status Identifier</td>
<td>Indicates the acceptability of the result with respect to QA/QC criteria.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>ResultStatusIdentifier</td>
</tr>
<tr>
<td>8.6 Result Status Authority Name</td>
<td>The person who indicates the acceptability of the data.</td>
<td></td>
<td>A</td>
<td>ResultStatusAuthorityName</td>
</tr>
<tr>
<td>8.7 Result Status Authority Type</td>
<td>The title or classification of a person who indicates the acceptability of the data.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>ResultStatusAuthorityType</td>
</tr>
<tr>
<td>8.8 Result Status Date</td>
<td>The date on which the person indicated the acceptability of the data.</td>
<td>The <strong>Representation of Date and Time [EX000013.1] Data Standard</strong> will apply anytime a date is reported</td>
<td>D</td>
<td>ResultStatusDate</td>
</tr>
<tr>
<td>8.9 Result Status Reason Text</td>
<td>Text description of the result status, potentially indicating why the result was rejected or accepted.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>ResultStatusReasonText</td>
</tr>
</tbody>
</table>

"The Representation of Date and Time [EX000013.1] Data Standard" will apply anytime a date is reported.
<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.10 Statistical Base Code</td>
<td>Identifier or code for the method used to calculate derived results.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>StatisticalBaseCode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ToxStat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Annual Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 90th Percentile</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Quarterly Basis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: 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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.11 Substance Dilution Factor</td>
<td>The overall dilution of the substance subjected to this analysis.</td>
<td>Note: A value of one corresponds to nominal conditions for the method. Values greater than one correspond to dilutions. Values less than one correspond to concentrations.</td>
<td>N</td>
<td>SubstanceDilutionFactorNumeric</td>
</tr>
<tr>
<td>Numeric</td>
<td></td>
<td>Example List of Values:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 0.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.12 Substance Analysis Comments</td>
<td>Comments related to the analysis of a particular substance.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>SubstanceAnalysisCommentsText</td>
</tr>
<tr>
<td>Text</td>
<td></td>
<td>• TKN analysis run beyond hold time per client request</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.13 Detection Limit</td>
<td>Constituent concentration that produces a signal sufficiently greater than the blank and can be detected within specified levels by good laboratories during routine operating conditions.</td>
<td>Refer to the Measure [EX000010.1] Data Standard. The following items may be needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC</td>
<td>G</td>
<td>DetectionLimit</td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------</td>
<td>-------</td>
<td>--------</td>
<td>----------</td>
</tr>
</tbody>
</table>
| 8.14 Detection Limit Type | One of a list of client, regulation, or organization defined acronyms or statistic methodologies that specify the type of detection limit used for analysis. | Example List of Values:  
- Instrument Detection Level (IDL)  
- Method Detection Level (MDL)  
- Estimated Detection Level  
- Limit of Detection  
- Long-term Method Detection Level  
- Other Entries as Applicable  
*Note: Based on the business need, additional metadata may be required to sufficiently describe a detection limit. This additional metadata is described in the Introduction section 1.6.d.* | A | DetectionLimitType |
| 8.15 Reporting Limit | Constituent concentration that, when processed through the complete method, produces a signal that is statistically different from a blank. | Reference the Measure [EX000010.1] Data Standard.  
The following items may be needed:  
- Measure Value  
- Measure Unit Code  
- Measure Qualifier Code  
- Measure QA/QC | G | ReportingLimit |
| 8.16 Reporting Limit Type | One of a list of client, regulation, or organization defined acronyms or statistical methodologies that specify the type of reporting limit. | Example List of Values:  
- PQL  
- SQL  
- MRL  
*Note: Based on the business need, additional metadata may be required to sufficiently describe a reporting limit. This additional metadata is described in the Introduction section 1.6.d.* | A | ReportingLimitType |
### 9.0 QA/QC

**Definition:** Technical, assessment, and reporting activities that ensure the results meet the user’s defined standard of quality.

**Relationships:** None.

**Notes:** None.

**XML Tag:** QAQC

### 9.1 Batch QC

**Definition:** Quality control samples associated with a batch of samples.

**Relationships:** None.

**Notes:** None.

**XML Tag:** BatchQC

<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1.1 Batch QC Type</td>
<td>Method defined name for QC related to a batch of samples.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>BatchQCTyp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Initial Calibration</td>
<td></td>
<td>e</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lab Reagent Blank</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• BFB Tune</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Continuing Calibration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verification</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Digestion Blank</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Matrix Spike</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Matrix Spike Duplicate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 9.1.2 Batch QC Identifier

**Data Element Name:** Batch QC Identifier

**Data Element Definitions:** A designator assigned by the laboratory used to uniquely identify the QC samples associated with the batch.

**Notes:** The identifier will ensure that the QC can be related back to each associated sample in a batch of samples. This should be linked to the 3.1 Laboratory Sample Identifier.

**Example List of Values:**
- An instrument generated data file name such as: 11200301
- A lab assigned code such as: ICP112003-01MS, or ICP112003-01MSD

**Note:** Based on the business need, additional metadata may be required to sufficiently describe a reporting limit. This additional metadata is described in the Introduction section 1.6.d.

**XML Tags:** BatchQCIdentifier

### 9.2 QA/QC Analysis Results

**Definition:** The QA/QC related field pertaining to a particular substance determination within a sample.

**Relationships:** None.

**Notes:** None.

**XML Tag:** QAQCAnalysisResults

### 9.2.1 Spike Amount or Dose Added

**Data Element Name:** Spike Amount or Dose Added

**Data Element Definitions:** Amount of spike material added for a specific substance of interest to a sample to determine substance recovery from a matrix.

**Notes:** Units for spike amount or dose added should be the same as those of the result value.

**Reference the Measure [EX000010.1] Data Standard.**

The following items may be needed:
- Measure Value
- Measure Unit Code
- Measure Qualifier Code
- Measure QA/QC

**XML Tags:** SpikeAmountDoseAdded
<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.2.2 Original Sample Identifier</td>
<td>A designator used to uniquely identify the original sample that was selected to be the matrix spike or matrix spike duplicate so that its result value(s) can be linked to those of the spiked sample.</td>
<td>Note: 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.</td>
<td>A</td>
<td>OriginalSampleIdentifier</td>
</tr>
<tr>
<td>9.2.3 QC Batch Exception Indicator</td>
<td>A flag indicating an exception to the quality control results.</td>
<td>List of Permitted Values:</td>
<td>A</td>
<td>QCBatchExceptionIndicator</td>
</tr>
<tr>
<td>9.2.4 QC Batch Exception Comments Text</td>
<td>Explanation of any QC anomalies.</td>
<td>Example List of Values:</td>
<td>A</td>
<td>QCBatchExceptionCommentsText</td>
</tr>
</tbody>
</table>

### 10.0 Analysis Results Binary Object

**Definition:** Refer to documents, images, maps, photos, laboratory materials, geospatial coverages, and other objects within the data submission that pertain to the laboratory analyses.

**Relationships:** None.

**Notes:** Refer to the Attached Binary Object [EX00006.1] Data Standard. Multiple objects may be attached to data submission for the analyses included in the submission. Where a binary object is attached, both the type code and the title of the file must be provided. Attached Binary Object descriptors will adhere to the specified technical standards.

**XML Tag:** AnalyticsResultsBinaryObject

### 11.0 Toxicology Analysis Results Identification

**Definition:** The report of the results of toxicology analysis.

**Relationships:** None.

**Notes:** None.

**XML Tag:** ToxicologyAnalysisResultsIdentification
<table>
<thead>
<tr>
<th>Data Element Name</th>
<th>Data Element Definitions</th>
<th>Notes</th>
<th>Format</th>
<th>XML Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1 Biological Response Text</td>
<td>Type of organism response measured in the test, e.g., survival, reproduction, growth (e.g., dry weight), fertilization.</td>
<td></td>
<td>A</td>
<td>BiologicalResponseText</td>
</tr>
<tr>
<td>11.2 Test Organism Name</td>
<td>Taxonomic name of organism(s) to which a stressor is applied for toxicity analysis.</td>
<td>Note: Refer to the Biological Taxonomy [EX000018.2] Data Standard.</td>
<td>G</td>
<td>TestOrganismName</td>
</tr>
<tr>
<td>11.3 Test Organism Age Measure</td>
<td>Age of organisms at test initiation.</td>
<td>Reference the Measure [EX000010.1] Data Standard.</td>
<td>G</td>
<td>TestOrganismAgeMeasure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following items may be needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.4 Organism Feeding Regime Method</td>
<td>Text specifying type and rate of feeding and whether organisms were fed as per cited protocol.</td>
<td>Reference the Method [EX000011.1] Data Standard.</td>
<td>G</td>
<td>OrganismFeedingRegimeMethod</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following items may be needed: Method Identifier Method Name Method Description Text Method Deviation Method Reference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.5 Test Chamber Material Text</td>
<td>Text indicating type of material with which test chambers made.</td>
<td>Example List of Values: HDPE plastic stainless steel Teflon glass</td>
<td>A</td>
<td>TestChamberMaterialText</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<td>---------------------------------------</td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>11.6 Test Chamber Volume Measure</td>
<td>Volume of solution or sediment/soil that the test chamber can hold.</td>
<td>Reference the Measure [EX000010.1] Data Standard. The following items may be needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC</td>
<td>G</td>
<td>TestChamberVolumeMeasure</td>
</tr>
<tr>
<td>11.7 Replicate Tally Count</td>
<td>Total number of separate replicates tested for each test concentration or sample.</td>
<td></td>
<td>N</td>
<td>ReplicateTallyCount</td>
</tr>
<tr>
<td>11.8 Organisms Per Replicate Count</td>
<td>Number of test organisms exposed to material in each test chamber.</td>
<td></td>
<td>N</td>
<td>OrganismsPerReplicateCount</td>
</tr>
<tr>
<td>11.9 Mean Response Per Run Text</td>
<td>Description of the mean response for each replicate and treatment in the test to which the result value applies.</td>
<td></td>
<td>A</td>
<td>MeanResponsePerRunText</td>
</tr>
<tr>
<td>11.10 Temperature Acceptable Range Text</td>
<td>Description of the target temperature value and acceptable range.</td>
<td></td>
<td>A</td>
<td>TemperatureAcceptableRangeText</td>
</tr>
<tr>
<td>11.11 Reference Toxicant Name</td>
<td>Text indicating material used in reference toxicant testing.</td>
<td></td>
<td>A</td>
<td>ReferenceToxicantName</td>
</tr>
<tr>
<td>11.12 Reference Toxicant Result Measure</td>
<td>Endpoint or result for corresponding reference toxicant test.</td>
<td>Reference the Measure [EX000010.1] Data Standard. The following items may be needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC</td>
<td>G</td>
<td>ReferenceToxicantResultMeasure</td>
</tr>
<tr>
<td>11.13 Reference Toxicant Test Date</td>
<td>Date on which the associated reference toxicant test was initiated.</td>
<td>The Representation of Date and Time [EX000013.1] Data Standard will apply anytime a date is reported</td>
<td>D</td>
<td>ReferenceToxicantTestDate</td>
</tr>
<tr>
<td>Data Element Name</td>
<td>Data Element Definitions</td>
<td>Notes</td>
<td>Format</td>
<td>XML Tags</td>
</tr>
<tr>
<td>-------------------</td>
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<td>----------</td>
</tr>
<tr>
<td>11.14  Reference Control Chart Limits Text</td>
<td>Description of the 95% confidence interval for Reference Toxicant Result Measure.</td>
<td>A</td>
<td>ReferenceControlChartLimitsText</td>
<td></td>
</tr>
</tbody>
</table>

Appendix A

Environmental Sampling, Analysis and Results: Analysis and Results Structure Diagram
Appendix B

References

i. ISO/IEC 2382-17:1999 Information Technology Vocabulary—Part 17: Databases 17.06.