FINAL
ENVIRONMENTAL SAMPLING ANALYSIS AND RESULTS: FIELD ACTIVITY DATA STANDARD

Standard No.: EX000004.2

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 http://www.exchangenetwork.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

Environmental Sampling Analysis and Results (ESAR): Field Activity Data Standard provides a group of data elements that are used to exchange information about field activities. The field activity data standard provides information about the contacts, collection method, sample identification, collection date/time, depth/altitude, observation notes, sample characteristics, batch and shipping activities. Whenever a reference is made to "Field Activity", the "Monitoring Location" and if applicable "Project" identification must be specified to distinguish the project and monitoring location that apply to the field activity.

1.2 Revision History

Date	Version	Description
January 6, 2006	EX000004.1	Initial Environmental Data Standards Council Adoption
February 4, 2010	EX000004.2	Modification of data standard to incorporate additional water quality and biological data elements.

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: Field Activity Data Standard. These include:

- Contact Information [EX000019.2] Data Standard
- Facility Site Identification [EX000020.2] Data Standard
- Attached Binary Object EX000006.1] 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.

Term	Definition
Field Activity	Field monitoring activities, including the collection of a physical sample, measurement, and/or observation where one or more of the results will be described or quantified.

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: Field Activity Diagram illustrates the principal data groupings contained within this standard.

b. Section 3.0 ESAR: Field Activity Data Standard Table provides information on the high level, intermediate and elemental field activity 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 lists the required number of characters for the associated data element, where “A” specifies alphanumeric, “N” designates numeric, “G” is used for grouping and “D” for time and date elements.

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, are defined here as data about data or data elements, that 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:

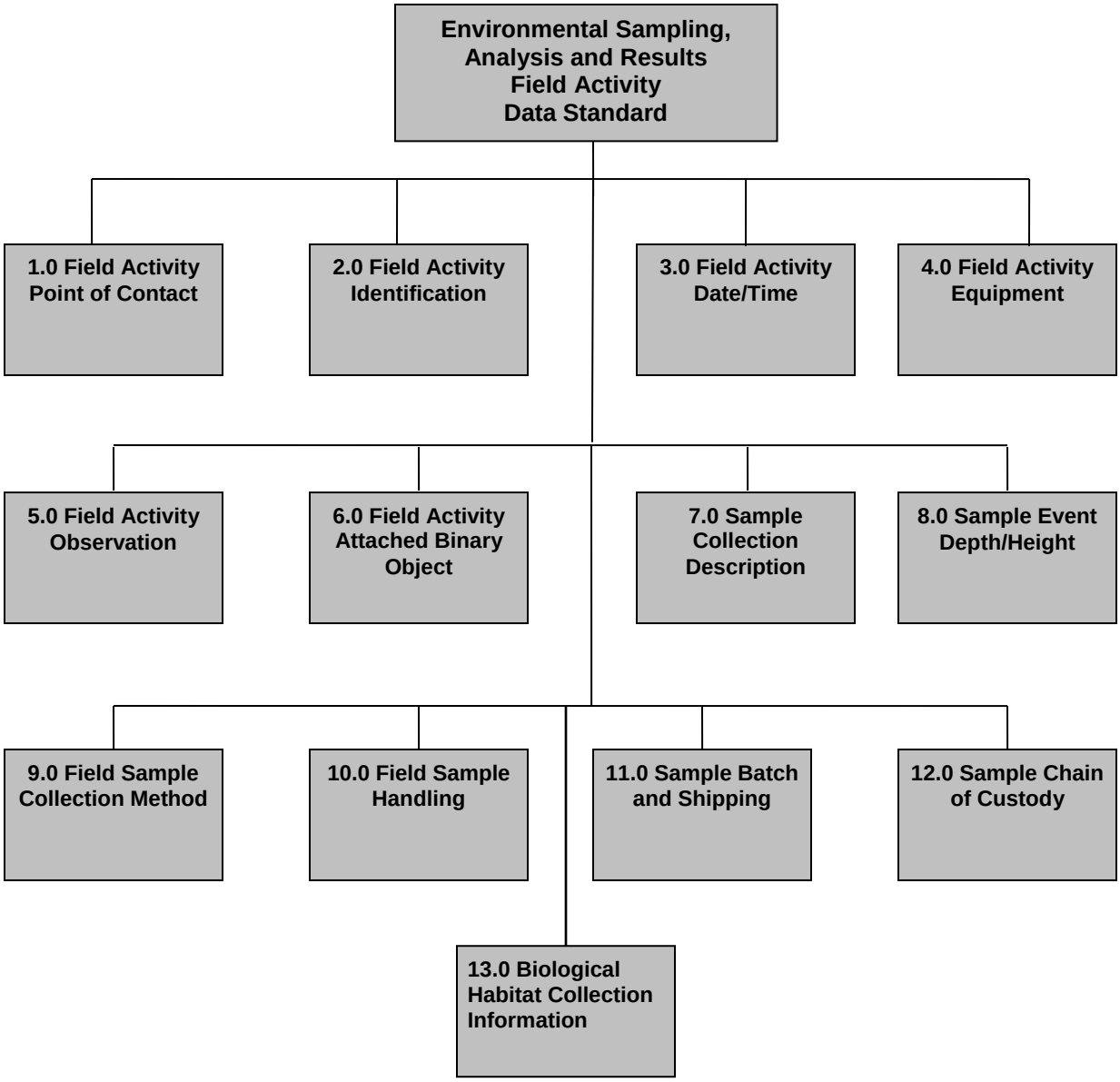
   - Code List Identifier, which is a standardized reference to the context or source of the set of codes
   - Code List Version Identifier, which identifies the particular version of the set of codes.
   - Code List Version Agency Identifier, which identifies the agency responsible for maintaining the set of codes
   - Code List Name, which describes the corresponding name for which the code represents

e. Appendix A, ESAR: Field Activity Data Standard Structure Diagram illustrates the hierarchical classification of the field activity 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 Field Activity Document.

1.0 ENVIRONMENTAL SAMPLING, ANALYSIS AND RESULTS: FIELD ACTIVITY DIAGRAM

This diagram specifies the major data groups for the ESAR: Field Activity Data Standard.



2.0 ENVIRONMENTAL SAMPLING, ANALYSIS AND RESULTS: FIELD ACTIVITY DATA STANDARD TABLE

1.0 Field Activity Point of Contact

Definition: Identifies the organization or person where questions about the field activities including sample collection, continuous monitoring, field measurements and/or observations may be directed.

Relationship: None.

Notes: 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

XML Tag: FieldActivityPointoContact

2.0 Field Activity Identification

Definition: The designators that uniquely identify a field activity at a monitoring location within a project.

Relationship: None.

Notes: If all field activities are activities that result in samples, the elements in this section could be referred to as Sample Identification (e.g. Sample Identifier, Sample Type) instead of Field Activity Identification.

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.

XML Tag: FieldActivityIdentification

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
2.1 Field Activity Identifier	A designator used to uniquely identify a field activity within a context.	*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	FieldActivityIdentifier
2.2 Field Activity Type	The text describing the type of field activity being performed.	Refer to the **Compositing [EX000008.1] Data Standard** for these additional data elements. Example List of Values: • Field Measurement/ Observation-Routine Measurement/ Observation • Sample-Routine Sample • Sample-Field Replicate • Sample-Positive Control • Sample-Confirmation • Sample-Continuous Monitoring Routine Sample • Quality Control Sample-Equipment Blank • Quality Control Sample-Field Spike • Quality Control Sample-Reference Sample • Quality Control Sample-Co-located *Note:* For field activities that involve compositing performed in the field, additional data tracking may be required to fully capture the field composite activities and composite components.	A	FieldActivityType

3.0 Field Activity Date/Time Details

Definition: The date and time relating to a field activity, such as sample collection.

Relationship: None.

Notes: The **Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a date is reported.

XML Tag: FieldActivityDateTimeDetails

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
3.1 Field Activity Start Date	The starting date that a field activity was started.	The **Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a date is reported.	D	FieldActivityStartDate
3.2 Field Activity Start Time	The starting time that a field activity was started.	The **Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a time is reported.	D	FieldActivityStartTime
3.3 Field Activity End Date	The ending date that a field activity was finished.	The **Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a date is reported.	D	FieldActivityEndDate
3.4 Field Activity End Time	The ending time that a field activity was finished.	The **Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a date is reported.	D	FieldActivityEndTime

4.0 Field Activity Equipment

Definition: Identifies equipment or instruments used to perform a field activity (such as sampling) and associated calibration information.

Relationship: None.

Notes: This may be a repeating data grouping. 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

XML Tag: FieldActivityEquipment

5.0 Field Activity Observation

Definition: Observations or deviations about the events associated with a field activity.

Relationship: None.

Notes: This may be a repeating data grouping.

XML Tag: FieldActivityObservation

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
5.1 Field Activity Observation Text	Recorded observations or deviations about the events associated with a field activity.	Example List of Values: • Weather: Hot and Humid • Many Ducks Near Swimming Area • No Conductivity Readings After 2 PM- Meter Failed	A	FieldActivityObservationText
5.2 Field Activity Observation Qualifier Type	A type or classification of event causing a deviation from an expected observation.	Example List of Values: • Null • Natural Event • Anthropogenic Event	A	FieldActivityObservationQualifierType
5.3 Field Activity Observation Qualifier Value	The reason for a deviation from an expected observation.	Example List of Values: • Vandalism • Removed for Calibration • Storm Damage • Wildfire • Stratospheric Ozone Intrusion • Water Level Fell Below Probe	A	FieldActivityObservationQualifierValue

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
5.4 Field Activity Observation Qualifier Concurrence Authority Text	The authority that has concurred with an observation qualifier.	Example List of Values: • US EPA • Wind River Environmental Quality Commission	A	FieldActivityObservationQualifierConcurrenceAuthorityText
5.5 Field Activity Observation Qualifier Concurrence Indicator	An indicator denoting concurrence or non-concurrence on the observation qualifier.	List of Permitted Values: • Y – yes • N – no	A	FieldActivityObservationQualifierConcurrenceIndicator

6.0 Field Activity Attached Binary Object

Definition: Reference documents, images, photos, GIS data layers, laboratory materials and other electronic objects attached within the data exchange, as well as information used to describe those objects that pertain to a field activity (such as sampling).

Relationship: None.

Notes: Refer to the **Attached Binary Object [EX000006.1] Data Standard**.

Multiple objects may be attached to data submission for each project 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: FieldActivityAttachedBinaryObject

7.0 Sample Collection Description

Definition: The information that further describes field activities that pertain to the collection of a sample from a station within a project.

Relationship: None.

Notes: None.

XML Tag: SampleCollectionDescription

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
7.1 Sample Identifier	A designator used to uniquely identify a sample within a context.	*Note:* Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in section 1.6.d of the Introduction to this standard.	A	SampleIdentifier

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
7.2 Sample Compliance Indicator	An indicator that denotes whether the sample being collected is intended to be used for compliance.	List of Permitted Values: • Y – yes • N – no	A	SampleComplianceIndicator
7.3 Sample QC Indicator	An indicator that denotes whether the sample being collected is intended to be used for the purpose of quality control (QC).	List of Permitted Values: • Y – yes • N – no	A	SampleQCIndicator
7.4 Sample Media Name	Name or code indicating the environmental medium where the sample was taken.	Example List of Values: • Air • Aqueous • Biological Tissue • Biota • Non-aqueous • Pesticide • Solid	A	SampleMediaName
7.5 Sample Media Sub-division Name	Name or code indicating the environmental matrix as a subdivision of the sample media.	Example List of Values: • Ambient Air • Stack Gases • Groundwater • Drinking • Lake • Liver	A	SampleMediaSubdivisionName

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
7.5 Sample Media Sub-division Name (cont.)		• Edible Flesh • Riffle Biota • Benthic Macroinvertebrate • Leachate • Process Waste • Sediment • Sludge	A	
7.6 Sample Description Text	The description indicating the characteristic of the sample.	Example List of Values: • Two-phase sample; analyze non-aqueous phase • Sample was effervescent • Sample was dropped, possible contamination	A	SampleDescriptionText
7.7 Sample Weight Measure	The weight of the sample.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	A	SampleWeightMeasure
7.8 Sample Volume Measure	The volume of material present in the sample.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	A	SampleVolumeMeasure

8.0 Sample Event Depth/Height

Definition: The information about the measurement of the vertical location where the sample was collected at the monitoring location. This is to be distinguished from the vertical location of the monitoring station itself.

Relationship: None.

Notes: This information would be used to describe samples collected at a point or range above or below the monitoring location, e.g., core samples, depth-integrated samples, multiple samples taken from varying depth/height at a given monitoring location.

XML Tag: SampleEventDepthHeight

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
8.1 Sample Event Depth/Height Measure	The numerical measure of the vertical location of sample collection.	This may include such values as: well depth; water level; height of a receiver, probe, transmitter, obstruction; maximum height; minimum height. This is a linear measure off the latitude/longitude elevation measure. Depth is referred to as negative and altitude as positive. Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	SampleEventDepthHeightMeasure
8.2 Sample Event Top Depth/Height Measure	The top of the range where the sample is collected; e.g. top of the well screen, or top of the core sample.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	SampleEventTopDepthHeightMeasure

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
8.3 Sample Event Bottom Depth/Height Measure	The bottom of the range where the sample is collected; e.g. bottom of the well screen, or bottom of the core sample.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	SampleEventBottomDepthHeightMeasure
8.4 Sample Event Depth/Altitude Reference Point Text	The reference used to indicate the datum or reference used to establish the depth/altitude of collection.	Example List of Values: • Mean sea level • Mean lower low water • Ground level • Surface of water • Surface of lake bottom	A	SampleEventDepthAltitudeReferencePointText

9.0 Field Sample Collection Method

Definition: Identifies sample collection or measurement method procedures.
Relationship: None.
Notes: Reference the **Method [EX000011.1] Data Standard**.
The following items are needed:
Method Identifier
Method Identifier Context
Method Name
Method Qualifier Type
Method Qualifier
Method Description Text
Method Type
Method Deviations
Method Reference
XML Tag: FieldSampleCollectionMethod

10.0 Field Sample Handling

Definition: The information that further describes field activities that pertain to the collection of a sample from a station within a project.

Relationship: None.

Notes: None.

XML Tag: FieldSampleHandling

10.1 Sample Container

Definition: Data elements that describe how samples are prepared and treated in the field.

Relationship: None.

Notes: None.

XML Tag: SampleContainer

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
10.1.1 Sample Container Type Name	The text describing the sample container type.	Example List of Values: • Cubitainer • Glass Jar • Polyethylene Bottle • Resealable Plastic Bag • 40 mL VOA Vial with Teflon Lined Cap • 47 mm Teflon Filter • 8 x 10 Inch Quartz Fiber Filter • SUMMA Canister	A	SampleContainer TypeName

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
10.1.2 Sample Container Color Name	The text describing the sample container color.	Example List of Values: • Amber • Clear • Opaque	A	SampleContainer ColorName
10.1.3 Sample Container Volume Text	The text describing the sample container volume.	Example List of Values: • 500 mL • 1 Gallon • 1 L	A	SampleContainer VolumeText
10.1.4 Sample Container Identifier	A designator used to uniquely identify a sample container to distinguish between multiple aliquots taken for the same sample.	*Note:* Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in section 1.6.d of the Introduction to this standard.	A	SampleContainerI dentifier

10.2 Field Sample Handling Method

Definition: Information describing sample handling procedures (including sample treatment or sample preservation) performed in the field.

Relationship: None.

Notes: Reference the **Sample Handling [EX000014.1] Data Standard**.

The following items are needed:

Sample Handling Type
Sample Handling Method
Sample Handling Amount
Sample Handling Start Date
Sample Handling Start Time
Sample Handling End Date
Sample Handling End Time
Sample Handling Comments
Chemical Preservative Used
Thermal Preservative Used

XML Tag: FieldSampleHandlingMethod

11.0 Sample Batch and Shipping

Definition: Data elements that identify sample grouping and shipping information.

Relationship: None.

Notes: None.

XML Tag: SampleBatchShipping

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
11.1 Sample Batch Identifier	A designator used to uniquely identify a grouping of samples.	*Note:* Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in section 1.6.d of the Introduction to this standard.	A	SampleBatchIdentifier
11.2 Sample Batch Type	The rationale for grouping the samples together as a batch.	Example List of Values: • Sampling Batch–a group of samples that were collected together. • Shipping Batch– a group of samples that were shipped together, such as in the same crate, cooler or ice chest. • Equipment Batch– a group of samples collected using the same equipment in a defined period of time.	A	SampleBatchType
11.3 Shipping Batch Identifier	A designator assigned by the sampler used to uniquely identify a batch of samples shipped together.	This may be a sample delivery group. *Note:* Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in section 1.6.d of the Introduction to this standard.	A	ShippingBatchIdentifier

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
11.4 Number of Shipping Containers Sent Numeric	The quantity of shipping containers shipped in a batch.	Example List of Values: • 4 • 1	N	NumberShippingContainersSentNumeric
11.5 Shipping Container Type Name	The type of container used to ship the batch to the lab.	Example List of Values: • Ice Cooler • Paint Can • Cardboard Container	A	ShippingContainerTypeName
11.6 Shipping Method	The shipping mode used to transfer sample containers to the laboratory.	Example List of Values: • Delivered to lab by field crew • Picked up by the lab staff • Overnight FEDEX • Second day UPS	A	ShippingMethodType
11.7 Sample Sent to Laboratory Date	The calendar date when the sample was sent to the laboratory	The **Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a date is reported.	D	SampleSentLaboratoryDate
11.8 Sample Sent to Laboratory Time	The time when the sample was sent to the laboratory.	The **Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a date is reported.	D	SampleSentLaboratoryTime

12.0 Sample Chain of Custody

Definition: The information describing the unbroken trail of accountability that verifies the physical security of samples, data, and records.

Relationship: None.

Notes: None.

XML Tag: SampleChainofCustody

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
12.1 Sample Chain of Custody Identifier	A designator used to uniquely identify the chain of custody.	Example List of Values: • 6-10046 • T095 1616 839 • RA 985 807 426 US *Note:* Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in section 1.6.d of the Introduction to this standard.	A	SampleChainofCustodyIdentifier
12.2 Sample Chain of Custody Indicator	A "Yes/No" indicator that a chain of custody procedure was followed.	List of Permitted Values: • Y – yes • N – no	A	SampleChainofCustodyIndicator
12.3 Sample Chain of Custody Comments Text	A description of important activities documented in the chain of custody.	Example List of Values: • No seals on container • Custody requirements met	A	SampleChainofCustodyText

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
12.4 Sample Chain of Custody Contact	The information naming and locating the organization or individual to contact about the chain of custody.	If Sample Chain of Custody Flag was yes, this applies. 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	G	SampleChainofCustodyContact

13.0 Biological Habitat Collection Information

Definition: The information describing biological habitat information related to a field activity.

Relationship: None.

Notes: None.

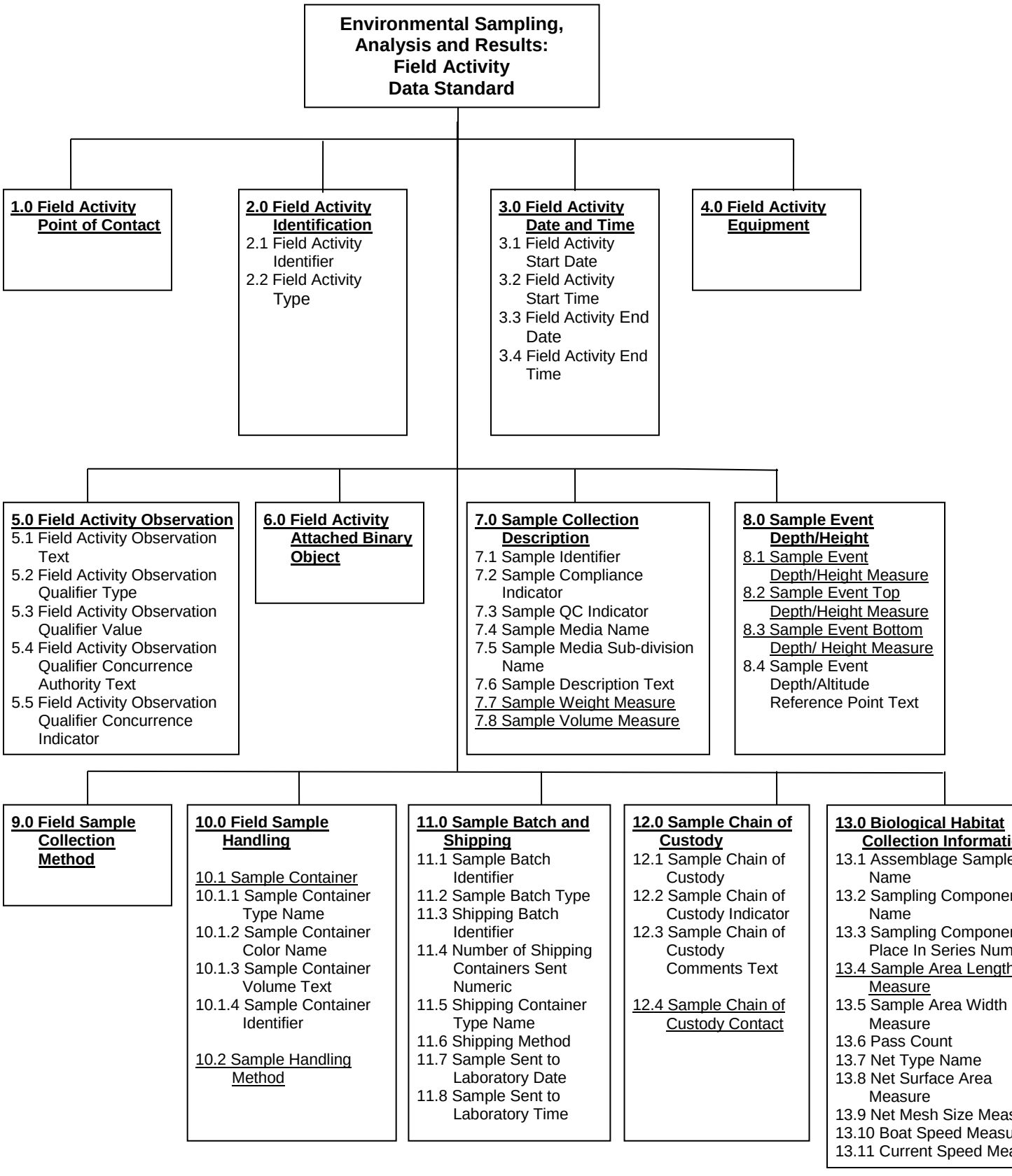
XML Tag: BiologicalHabitatCollectionInformation

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
13.1 Assemblage Sampled Name	An association of interacting populations of organisms in a given waterbody.	Example List of Values: • Aquatic Vegetation • Terrestrial Vegetation • Benthic Macroinvertebrates • Periphyton	A	AssemblageSampledName
13.2 Sampling Component Name	Single entity within the sampling area/framework at which a collection procedure or protocol was performed.	Example List of Values: • Transect • Thalweg	A	SamplingComponentName
13.3 Sampling Component Place In Series Numeric	The order in which a component within the sampling area/framework was visited in relation to other components.		N	SamplingComponentPlaceInSeriesNumeric
13.4 Sample Area Length Measure	The distance measure of the sample area length in which the procedure or protocol was performed.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	SampleAreaLengthMeasure
13.5 Sample Area Width Measure	The distance measure of the sample area width in which the procedure or protocol was performed.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	SampleAreaWidthMeasure

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
13.6 Pass Count	The number of passes made along the sample area to obtain the collection.		N	PassCount
13.7 Net Type Name	The text describing the type of net used during sample collection.	Example List of Values: • Net/Horizontal Tow • Net/Non-Tow • Net/Vertical Tow	A	NetTypeName
13.8 Net Surface Area Measure	A measurement of the effective surface area of the net used during the sample collection.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	NetSurfaceAreaMeasure
13.9 Net Mesh Size Measure	A measurement of the mesh size of the net used during the sample collection.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	NetMeshSizeMeasure
13.10 Boat Speed Measure	A measurement of the boat speed during the sample collection.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	BoatSpeedMeasure

Data Element Name	Data Element Definitions	Notes	Format	XML Tags
13.11 Current Speed Measure	A measurement of the water current during the sample collection.	Refer to the **Measure [EX000010.1] Data Standard.** The following items are needed: Measure Value Measure Unit Code Measure Qualifier Code Measure QA/QC	G	CurrentSpeedMeasure

Appendix A
Environmental Sampling, Analysis and Results: Field Activity Structure Diagram



Appendix B
References

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