



Environmental Dataset Gateway (EDG)

Connecting EPA's Environmental Resources

Getting Started with the EPA Metadata Editor Version 4.0 (EME v4.0)

Who should use EME v4.0?

EME v4.0 is recommended for **non-geospatial** metadata creation. EME v4.0 is designed to assist users in the creation of metadata that complies with current [ISO standards](#). Individuals who are responsible for creating metadata for non-geospatial data resources may use EME v4.0 for this purpose.

EME v4.0 is **NOT** recommended for **geospatial** metadata creation. EPA is working towards full adoption of ISO 19115 for geospatial metadata, but does not expect to begin the transition until after ISO 19115-3 (which will contain critical geospatial metadata elements not contained in the current standards). ISO 19115-3 is scheduled for release in 2015. Until then it is recommended that EME v3.2.1 be used for all geospatial data resources.

What's new in EME v4.0?

For users already familiar with the EME, these are some of the highlights of version 4.0:

1. Updated user interface
2. Multiple contacts and distribution elements per record
3. Inline validation (real-time results in user interface)
4. Customizable XML tables
5. Enhanced Help

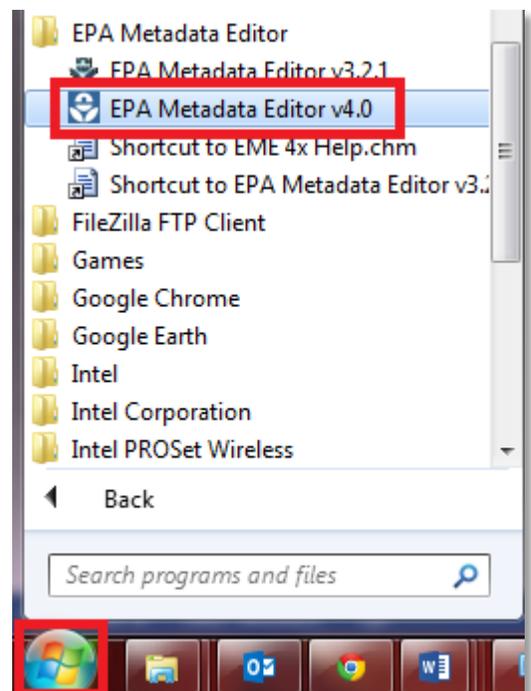
Installing and accessing EME v4.0

To download EME v4.0, follow the download instructions on the EME webpage: <https://edg.epa.gov/EME/download.html>.

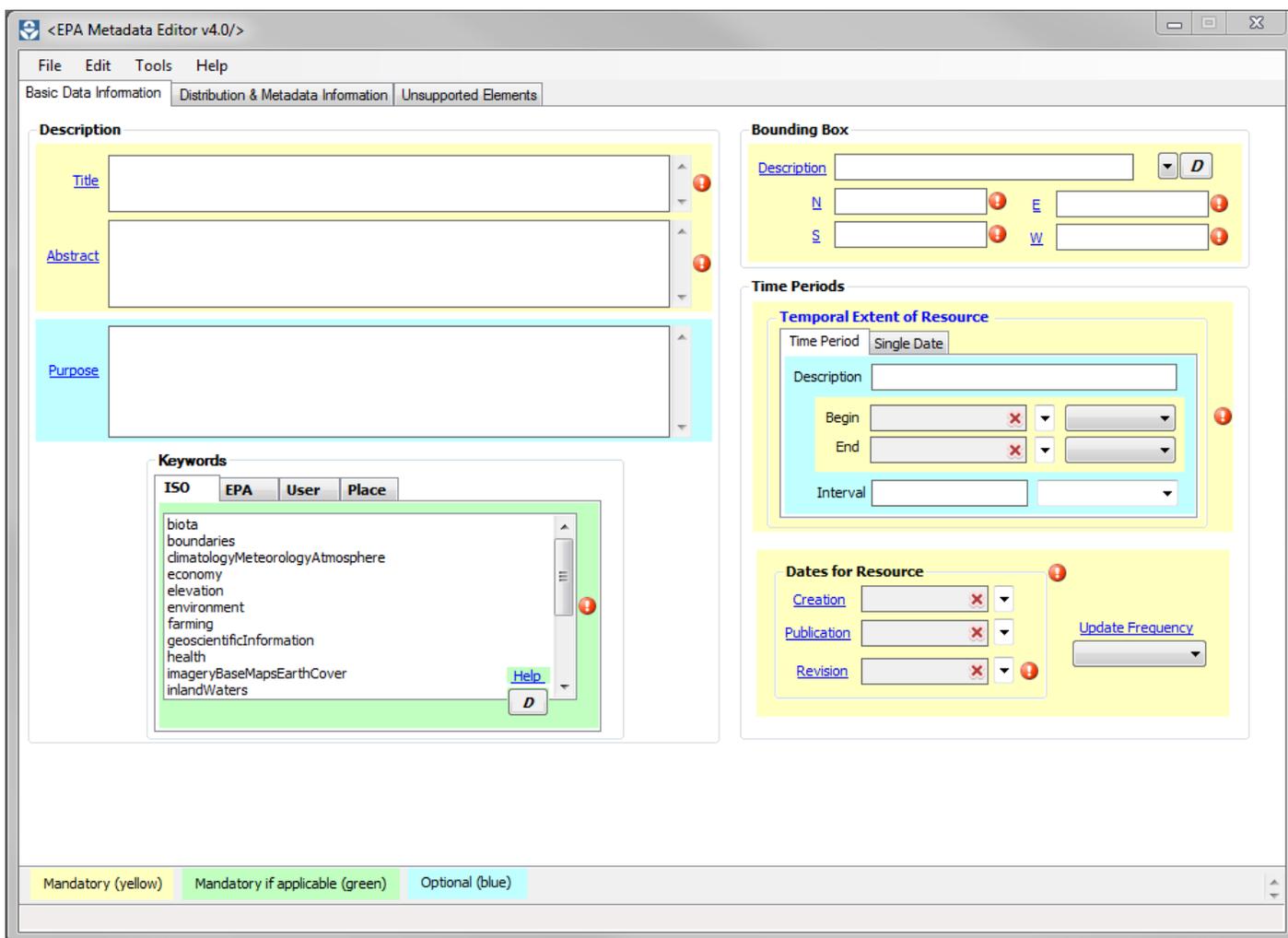
Installation Prerequisite: [Microsoft .NET Framework 3.5](#)

Accessing the EPA Metadata Editor as a Standalone Tool

If you are using the EME as a standalone application, then go to Start->EPA Metadata Editor to open EME.



Once opened, the user interface presents three tabs, each with metadata elements. Elements are populated with text supplied either by the underlying EME v4.0 XML database or by the user entering free text.



User Interface Features

Common Features Across Tabs

1) Inline Validation

EME version 4.0 was developed to show the minimum required elements needed to pass ISO schema validation, EDG validation, and Data.gov's DCAT validation. All required elements can be identified with an exclamation point next to the element name . The [EDG website](#) will provide the final validation. Note: Users can save metadata records with errors (missing required elements) and edit the record at a later time; however, metadata records with errors will most likely not pass EDG validation when attempting to publish.

2) Ordinality

The distinction between 'mandatory', 'mandatory if applicable', and 'optional' fields as required by [Data.gov's Project Open Data/DCAT metadata standard](#) is provided through the use of color-coding in the user interface.

Yellow fields are considered 'mandatory', green fields are considered 'mandatory if applicable', and blue fields are considered 'optional'. Defaults for individual fields may be selected interactively in the user interface using buttons or drop-downs.

3) The 'D' or 'default' button

The 'D' or 'default' button is located throughout the EME user interface and when clicked, automatically populates the default values stored in the EPA Metadata Editor template XML files.



4) Manual Value Override

Once a record has been populated either by choosing the 'D' button or selecting a Contact using the drop-down list, users can manually override the field values by simply clicking in any field and deleting the existing text or modifying the existing text.

5) Multiple Values

Many sections in ISO Metadata can be repeated if necessary to allow for multiple values. Contact information is the most common example. If a section may be repeated, you will see a plus and x icon. Clicking the plus icon adds new sections, while the x deletes the current section. Next to these icons are two arrows enclosing a pair of numbers - the first number is the index of the currently shown section, while the second is the total number of sections. In the example below, the first out of three Resource Owners is selected. The arrows may be used to cycle through the individual sections.



6) Minimized Sections

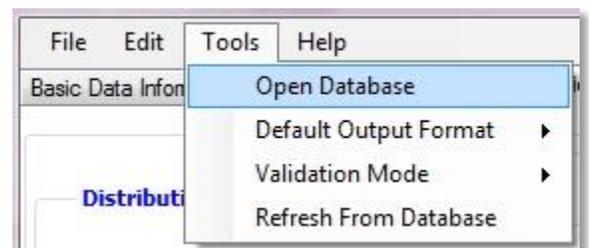
Many sections in the interface have been minimized to save space. This icon  indicates that a section has been minimized. Clicking on the icon will expand the section for editing.

Global Features

These features can be accessed from the Edit and Tools menus.

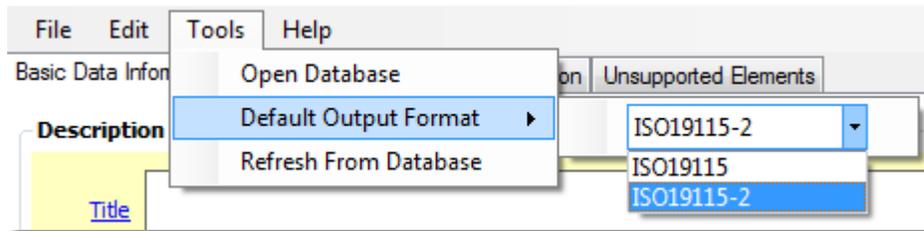
1) 'Open Database'

This feature allows users to open and edit the template content using the new built-in data table editor.



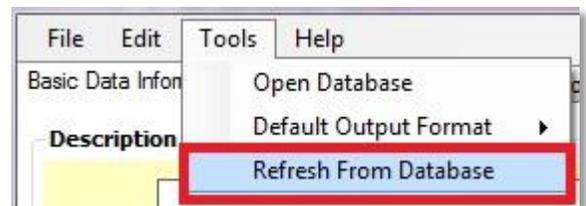
2) 'Default Output Format'

This feature allows users to choose between ISO 19115 or ISO 19115-2. ISO 19115-2 extends the existing geographic metadata standard by defining the schema required for describing imagery and gridded data and is the default. For non-geospatial metadata, it is recommended that ISO 19115 be used.



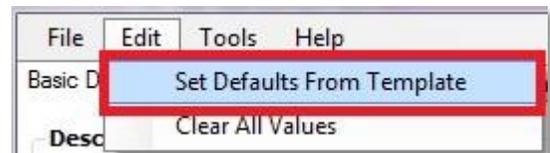
3) 'Refresh From Database'

This feature is used to refresh the EME user interface defaults after edits have been made to the database. If the EME database is opened and edited from the EME user interface button, the 'Refresh From Database' option should be clicked to make sure that the defaults shown in the user interface reflect the newest edits to the database.



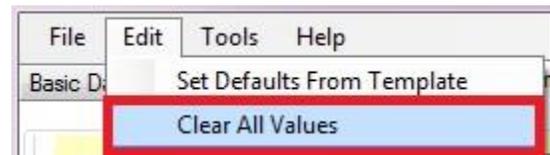
4) 'Set Defaults from Template'

This feature allows a user to set all defaults for the selected tab. The editor will prompt the user to ensure that he/she would like to overwrite all information in the selected tab with default values as stored in the template XML files.



5) 'Clear All Values'

This feature allows a user to clear all values in the metadata record.



Opening, Saving, and Creating a New Record

To Open an existing record, go to File -> Open and navigate to your existing xml metadata record. Once the metadata record is open, the user can edit/overwrite any existing elements.

To Create a New Record, go to File -> New. Upon opening EME, the program will default with a blank record.

To Save an existing record, go to File -> Save or File -> Save As.

Minimum Required Elements

Listed below are the minimum required elements to pass ISO validation. To learn more about each element, please see the Appendix. For more detailed information about each element, please visit the EME Help.

Description		
	Title	
	Abstract	
Bounding Box		
	Description	
	Coordinates	
Time Periods		
	Temporal Extent of Resource	
		Begin Date
		End Date
	Creation Date	
	Publication Date	
	Revision Date	
	Update Frequency	
Distribution Contact		
	Contact	
		Role
		Individual
		Organization
		Position
	Contact Details	
		Linkage
		Linkage Type
	Digital Transfer Options	
		Linkage (only if Digital Transfer Options is included)
		Function (only if Digital Transfer Options is included)
	Distribution Format	
		Name (only if Distribution Format is included)
		Version (only if Distribution Format is included)
Resource Constraints		
	Security Constraints	
		Use Limitation/Access Level
		Classification
Contacts		
	Resource Owner	
		Role
		Individual
		Organization
		Position
	Contact Details	

		Linkage
		Linkage Type
	Resource Producer	
		Role (Only if Resource Producer is included)
		Individual (Only if Resource Producer is included)
		Organization (Only if Resource Producer is included)
		Position (Only if Resource Producer is included)
	Contact Details	
		Linkage (Only if Resource Producer is included)
		Linkage Type (Only if Resource Producer is included)
	Metadata Author	
		Role
		Individual
		Organization
		Position
	Contact Details	
		Linkage
		Linkage Type
Metadata Information		
	Resource Type	
	Last Modified	
	Metadata Standard	
		Standard Name
		Standard Version

Setting up the EME Database

When first installing EME, it can be helpful to set up the EME Database to ensure that the defaults match your organization's specifications.

Customizing the EME Database

The EME utilizes data tables stored as Extensible Markup Language (XML) files to supply default information within the user interface. By using the provided data table editor, information stored in the XML files can be modified by the user to include new data or to change defaults that are used by the 'Set Default' buttons.

Database Structure

The database is structured to align closely with the flow of the user interface. Users can edit the following tables: Contact_Information, BoundingBox, KeywordsEPA, KeywordsISO, KeywordsUser, and KeywordsPlace.

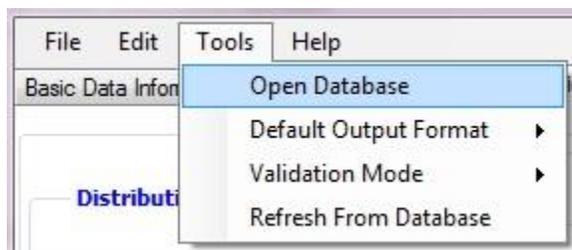
Each table has a column in it called 'default'. This column controls what is selected in the EME when the user clicks on the 'Set Default' or 'D' buttons.

Editing the Database

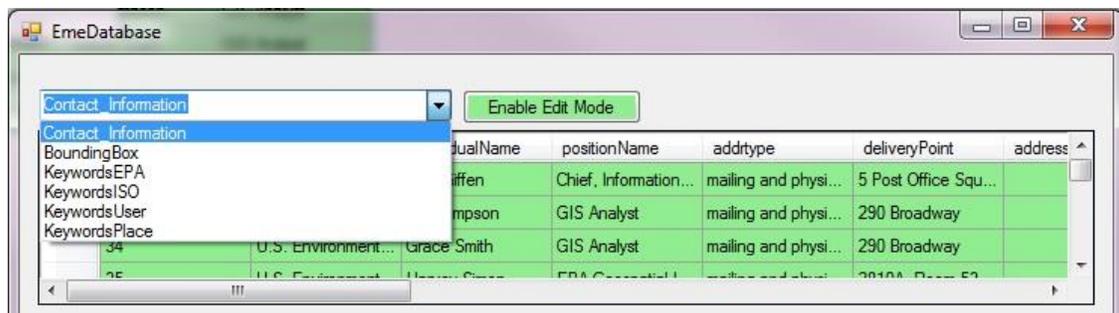
The following example outlines how to add an additional contact to the Contact_Information table, however, the user can follow the same guidelines when editing the BoundingBox, KeywordsEPA, KeywordsISO, KeywordsUser, and KeywordsPlace tables.

To add an additional contact to the preconfigured contact table:

- 1) Navigate to Tools --> Open Database.



- 2) Select the table of interest, e.g. Contact_Information, BoundingBox, KeywordsEPA, KeywordsISO, KeywordsUser, or KeywordsPlace.



- 3) Click on the Enable Edit Mode button (the table will turn pink when in edit mode)

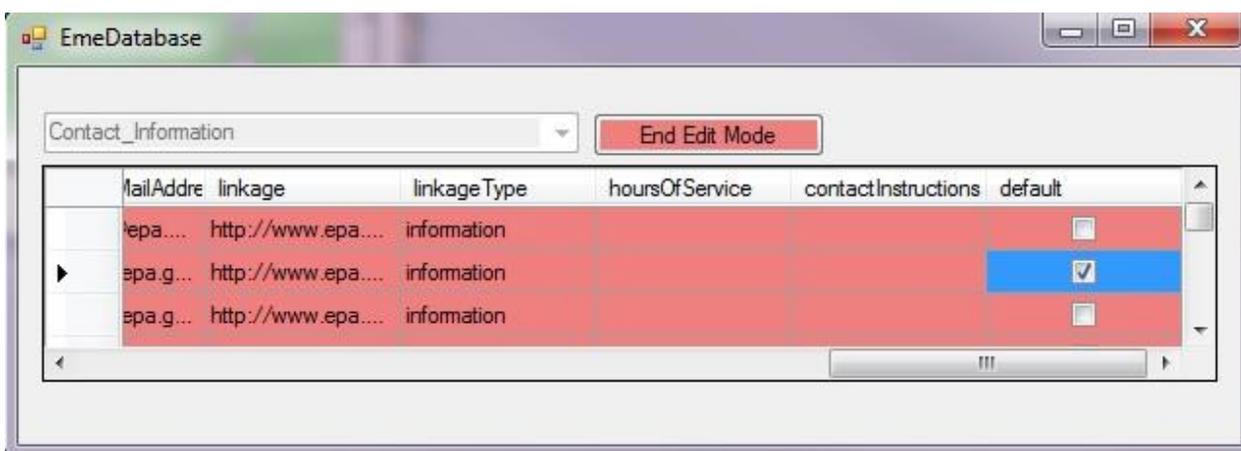
- 4) Scroll to the bottom of the table and enter the contact information.
- 5) After adding a new contact, click on the End Edit Mode button (the table will turn back to green) and close the table.
- 6) The newly added contact should now display at the bottom of the list after clicking on the drop-down arrow in the Select Contact box.

To set the Default contact:

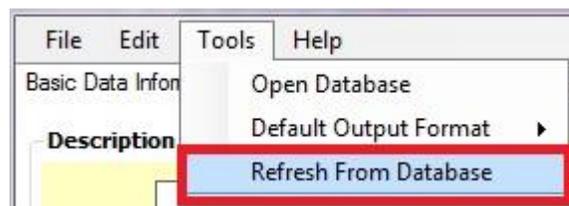
Setting a default contact allows the user to click on the "D"; button to autopopulate the fields with the default contact information found in the "Contact_Information" table.



- 1) Scroll to the far right of the table and click on the default checkbox next to the default contact record. Note that you will need to uncheck the currently selected default when selecting a new default. If you have more than one default selected, the record furthest down in the table will be used. In the next release we hope to allow you to cycle through multiple defaults by repeatedly clicking the "D" button.



- 2) After setting the default contact, click on the End Edit Mode button (the table will turn back to green) and close the table.
- 3) Choose Tools > 'Refresh From Database' to update the user interface. You will need to Refresh From Database for each tab where changes should be reflected.



Special Data Table Customizations

The EME provides a user interface for editing commonly accessed data tables. The EMEdb folder also stores a template metadata record used for populating additional default content (ISO19115MD_GenericMetadataTemplate.xml). Changes to these XML files can easily be shared with users. Other XML files found within the EMEdb folder should not be modified. Changes to those files could cause stability issues with the application.

Data table storage location:

The XML data tables are stored in two places on a user's computer. During installation, back-up copies are placed in the application installation directory on your machine (usually, C:\Program Files (x86)\Innovate! Inc\EPA Metadata Editor v4.0\Eme4xSystemFiles\EMEdb). The EME also creates an editable copy of the XML data tables in each user's application data folder (e.g., "C:\Users\USERNAME\AppData\Roaming\Innovate! Inc\EPA Metadata Editor 4x\Eme4xSystemFiles\EMEdb). EME makes this copy so that the operational data are not write-protected.

When EME starts, it looks for the data tables in the following locations:

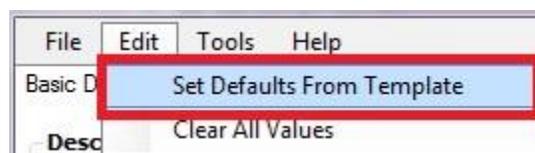
- Check and use if the EMEdb folder exists in users own area
- Otherwise make a copy the EMEdb folder from the installation directory into the user's own area.

Changes made to the XML files located in the user's application data folder will only be seen by that user. The user can revert back to the originally installed data tables by closing the EME application and deleting the EMEdb folder located in their user directory. The next time EME is launched, a copy the EMEdb folder from the installation directory will be placed into the user's own area.

Understanding this behavior will also assist in sharing data table customizations with other users. To share on a user-by-user basis a person can copy their EMEdb folder (located in their application data folder) to the intended user's application data folder. Alternatively, if advanced users wish to make system-wide changes and override the original data, the folder could be copied into the application installation directory and subsequently deleting the EMEdb folder in each existing user's application data folder. **Best Practice:** It is recommended that the user create a back-up of the original EMEdb folder before making system-wide changes.

Modifying the default metadata template:

Users can auto-populate an empty metadata record using values stored in a template record by clicking the "Set Defaults From Template" button under the Edit menu item. The template record is located in the EMEdb folder and named "ISO19115MD_GenericMetadataTemplate.xml".



To modify the template, open the EME Metadata Editor. By default the user interface is blank. Click "Set Defaults From Template" to populate the form and then make desired changes. Then, to save changes back to the template, click Save and navigate to the template record in the user's application data folder (e.g., "C:\Users\USERNAME\AppData\Roaming\Innovate! Inc\EPA Metadata Editor 4x\Eme4xSystemFiles\EMEdb ISO19115MD_GenericMetadataTemplate.xml"). Sharing this template is accomplished in the same manner as outlined above in the "Data table storage location" section.

Appendix

Element	Description	Example or Best Practice
Abstract	This element is required for EPA data resources. Typically, this element should be used to provide a brief summary of the resource. Some of the recommended items that should be included in this field are: general content and features, dataset form (GIS, CAD, image, Dbase, etc.), geographic coverage (county/city name), time period of content (begin and end date or single date), and special data characteristics or limitations	"A total of 54 GPS points were collected around the Willamette Valley, Oregon, in the fall of 1997 and spring of 1998. Locations were selected at road crossings over streams and along the Mainstem Willamette. Attention was paid to achieving relatively even spacing around the basin, including farthest extents, and along the Mainstem. Points were differentially corrected and imported into a file geodatabase, attributed to indicate location, road, stream, and notes."
Begin Date (Temporal Extent of Resource)	Begin date of the data content	Use date-picker
Classification	Name of the handling restrictions on the resource or the metadata	Use pick-list
Coordinates (Bounding Box)	These elements include the North, South, East, and West bounding coordinates of the data resource, expressed in latitude in decimal degrees referenced to WGS 84. The recommended way to populate these elements is to select a choice from the quick pick list next to the default button. If you populate these values manually, it is recommended that a Bounding Box Description be included with the Bounding Box coordinates.	For North and South bounding coordinates: $-90.0 \leq \text{Bounding Coordinate} \leq 90.0$ and for East and West bounding coordinates: $-180.0 \leq \text{East Bounding Coordinate} \leq 180.0$,
Creation Date	Date the resource was brought into existence.	Use date-picker
End Date (Temporal Extent of Resource)	End date of the data content	Use date-picker
Individual	The name of the responsible individual	"John Smith"
Last Modified	Date of the metadata creation or the last metadata update	Use date-picker
Linkage (Digital Transfer Options - Online Resource)	URL for any information about where the resource can be obtained.	
Linkage (Distribution Contact Details)	URL for any information about the resource distribution	
Linkage (Resource Owner, Resource Producer, Metadata Author)	URL for any information about the resource owner, resource producer, or metadata author	

Linkage Type	Type of URL provided (download, information, offline access, order, search)	
Name (Distribution Format)	Name of the data transfer format	"ASCII"
Organization	Name of the responsible organization	"U.S. Environmental Protection Agency, Office of Environmental Information, Office of Information Analysis and Access, Information Access Division"
Position	Position of the responsible person.	"SEGS Manager"
Publication Date	Date when the data resource was published or otherwise made available for release.	Use date-picker
Resource Type	The class of information to which the referencing entity applies	EME version 4.0 will primarily be used for "non-geographic datasets"; however, "datasets" may also be selected for any data resources with a spatial component.
Revision Date	Most recent date on which the data resource was changed, updated, or modified.	Use date-picker
Role	The role of the distribution contact, resource owner, resource producer, or metadata author	Use pick-list
Standard Name (Metadata Standard)	The name of the metadata standard/profile use	"ISO 19115-2 Geographic Information - Metadata - Part 2: Extensions for Imagery and Gridded Data"
Standard Version (Metadata Standard)	The version of the metadata standard/profile used	ISO 19115-2:2009 (E)
Title	The title should fully describe the resource in a way that distinguishes it from other, similar resources, while also staying as concise as possible. To this end, EPA recommends the following template: {Subject, Geographic Extent, Relevant Time Period, Data Owner/Provider, Office/Region/Research Lab of Data Owner}	Toxics Release Inventory (TRI) Locations, Oklahoma, 2012, EPA OIAA, EPA REG 66 WQPD
Update Frequency	The frequency with which changes and additions are made to the data resource after the initial data resource is completed.	Use pick-list

Use Limitation/Access Level	Degree to which this resource could be made available to the public, regardless of whether it is currently available to the public.	Use pick-list
Version (Distribution Format)	Version of the format (date, number, etc)	