

EPA Style Guide for Creating ArcMap Web Service Metadata

Version 1.2, March 17, 2017

Document Change Control

The following is the document control for revisions to this document.

Version Number	Date of Issue	Author(s)	Brief Description of Change
V1.0	October 7, 2014	Steven Jett, Suzanne Pierson, Torrin Hultgren, Innovate!, Inc.	Initial Version.
V1.1	May 4, 2015	Steven Jett, Suzanne Pierson, Torrin Hultgren, Innovate!, Inc.	Updates for changes to Distribution Liability in order to comply with OMB Project Open Data requirements.
V1.2	March 17, 2017	Mettja Kuna, Suzanne Pierson, Torrin Hultgren, Innovate!, Inc.	Extracted MXD documentation for web service portion of the EPA Metadata Style Guide and created a separate document.

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Introduction

This Style Guide provides recommendations and instructions for using Esri's ArcMap to develop metadata for EPA web services created from ArcMap Map Documents (MXDs). When a map document is published as a web service, a REST endpoint for the service is created. Meaningful documentation (metadata) on the REST endpoint web page helps users understand the contents of the web service – especially if the web service is made available to the public. By following this guide, users can create metadata for EPA web services published from ArcMap MXDs that have a consistent appearance and, where applicable, conforms to [EPA's Metadata Technical Specification](#) and OMB's [Project Open Data \(POD\)](#) requirements.

The graphic below displays the type of web service REST endpoint metadata that is addressed in this Style Guide:

ArcGIS REST Services Directory [Login](#) | [Get Token](#)

[Home](#) > [services](#) > [OEI](#) > [CongressionalDistricts \(MapServer\)](#) [Help](#) | [API Reference](#)

[JSON](#) | [SOAP](#)

OEI/CongressionalDistricts (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS Online map viewer](#) [Google Earth](#) [ArcMap](#) [ArcGIS Explorer](#)

View Footprint In: [ArcGIS Online map viewer](#)

Service Description: [Full Metadata](#) This SEGS web service contains the following layers: 114th Congressional district boundaries and 114th Congressional district labels, both at two scale ranges. All layers draw at the scale ranges indicated in their titles. This SEGS dataset was procured for EPA through the Office of Environmental Information (OEI). Access constraints: None. Use constraints: None. Please check sources, scale, accuracy, currentness and other available information. Please confirm that you are using the most recent copy of both data and metadata. Acknowledgement of the EPA would be appreciated.

Map Name: 114th Congressional District Boundaries, US, 2014, USGS National Map, SEGS

[Legend](#)

[All Layers and Tables](#)

[Dynamic Legend](#)

[Dynamic All Layers](#)

Layers:

- [114th Congressional Districts Labels \(> 1:3 million\)](#) (0)
- [114th Congressional Districts Labels \(1:5 million - 1:3 million\)](#) (1)
- [114th Congressional Districts \(>1:3 million\)](#) (2)
- [114th Congressional Districts \(1:30 million to 1:3 million\)](#) (3)

Description: [Full Metadata](#) This SEGS web service contains the following layers: 114th Congressional district boundaries and 114th Congressional district labels, both at two scale ranges. All layers draw at the scale ranges indicated in their titles. This SEGS dataset was procured for EPA through the Office of Environmental Information (OEI). Access constraints: None. Use constraints: None. Please check sources, scale, accuracy, currentness and other available information. Please confirm that you are using the most recent copy of both data and metadata. Acknowledgement of the EPA would be appreciated.

Copyright Text: Service: USEPA; Data: USGS National Map

This guide assumes that, while the individual layers in a web service may have different themes, all layers will represent the same geographic extent, temporal extent, and data source. This simplifies the

naming conventions for the overall web service name, group layer names, and individual layer names. It is recommended that layers which represent different geographic extents, temporal extents, and/or data sources not be combined in a web service, but rather be separated into individual web services. This modular approach is preferred by most web map developers because web services with numerous divergent layers are often difficult to incorporate into web maps and applications. Modularity also promotes consistency in naming conventions so the web services are easier to maintain.

It is also assumed that ArcGIS Server services will be given brief and intuitive names and grouped logically into folders at the developer's discretion. No standard convention for service name, folder, or hostname will be instituted.

This guide does not detail the process to publish metadata records to the EDG. Please consult documents at the [EDG Home page](#) for help on publishing metadata to the EDG. For additional assistance, please contact the EDG Team (edg@epa.gov).

To access additional style guides designed specifically for creating metadata for geospatial and non-geospatial data and documenting EPA GeoPlatform Online content items, refer to [EPA's Metadata Style Guide for Geospatial and Non Geospatial Data](#).

Instructions for using this guide

Open your MXD in ArcMap and follow along in the guide which steps through Map Document Properties, Data Frame Properties, and Group and Layer Properties, element by element, with instructions. Suggested text is provided for most elements - the examples are enclosed in brackets and asterisks {***ENTER HERE***} which the user must replace with text that describes the data layer.

For assistance with locating suggested keywords and EPA organization names used to complete metadata fields (i.e., Title and Keywords), please refer to [EPA's Metadata Style Guide – Keywords and EPA Organization Names](#).

ArcMap Map Document Properties

(File → Map Document Properties → General)

The screenshot shows the 'Map Document Properties' dialog box with the 'General' tab selected. The dialog contains several text input fields and a list box for metadata. At the bottom, there are buttons for 'OK', 'Cancel', and 'Apply', along with 'Make Thumbnail' and 'Delete Thumbnail' buttons for the thumbnail field.

Map Document Properties

General

File:

Title:

Summary:

Description:

Author:

Credits:


Tags:

Hyperlink base:

Last Saved:

Last Printed:

Last Exported:

Default Geodatabase: c:\Default.gdb 

Pathnames: Store relative pathnames to data sources

Thumbnail:

Title

Title:

(Corresponding REST page field: Document Info: Title:)

Enter the map title using the following naming convention:

{***ENTER SUBJECT, GEOGRAPHIC EXTENT, RELEVANT TIME PERIOD, DATA OWNER/PROVIDER, OFFICE/REGION/RESEARCH LAB OF EPA WEB SERVICE CREATOR***}

- Refer to [EPA’s Metadata Style Guide – Keywords and EPA Organization Names](#) for a list of EPA Organization Names that should be used for DATA OWNER/PROVIDER and OFFICE/REGION/RESEARCH LAB OF EPA WEB SERVICE CREATOR.
- *Example:* Toxics Release Inventory (TRI) Locations, Oklahoma, 2012, EPA OIAA, EPA REG 06, WQPD
- *Example:* Tribal Lands, Idaho, 2000, BIA, EPA REG 10, OETPA
- *NOTE: for services that will subsequently be added as content items in EPA GeoPlatform Online (GPO), the length limit for the title is 250 characters. It is recommended that the Title be kept brief, and that details about the service be included in the Summary and Description. Individual elements in this convention may be omitted if they are superfluous or redundant. For example, there is no need to include a date if data are not date-specific, or are frequently or continuously updated. Additionally, if the geographic extent is implicit in the content text (e.g. Potomac River Basin Boundary), it may be omitted provided that the actual extent of the data matches the extent implied in the title (an example of a dataset whose actual extent does not match the implicitly titled extent would be National Hydrography Dataset clipped to a given state). Geographic extent should always refer to a place name, not coordinates.*

Summary

Summary:

(Corresponding REST page field: Document Info: Subject:)

Enter a one- to two-sentence description (limited to 120 characters, per Esri guidance)) of the contents in the web service following this general format:

This {***ENTER OFFICE/REGION/RESEARCH LAB OF EPA WEB SERVICE CREATOR***} web service contains {***ENTER “Point”, “Line” and/or “Polygon” ***} layer(s) depicting {***ENTER DESCRIPTION OF CONTENT***} in {***ENTER GEOGRAPHIC LOCATION***} from {***ENTER DATA SOURCE***}

- *Example:* This EPA Region 6 WQPD web service contains points depicting 2012 TRI locations in Oklahoma from EPA OIAA’s TRI Program.

- *Example:* This EPA ORD NERL ESD web service contains point and polygon layers depicting Superfund sites in the US from EPA OSWER.
- *NOTE: developers have some discretion on the formatting of the Summary element due to the character limit imposed. Individual elements in this convention may be omitted if they are superfluous or redundant, as with the Title (i.e. date, geographic extent, etc.).*

Description

Description:

*(Corresponding REST page fields: Document Info: Comments: **and** Service Description:)*

- *NOTE: completing the Map Document Properties Description field is a two-step process. Step 1 is to create the overall descriptive text for the web service in the Description field. Step 2, which takes place after web service metadata has been published to the [Environmental Dataset Gateway \(EDG\)](#), is to embed HTML code into the beginning of the Description field that provides a hyperlink directly from the REST page to the metadata details page at the EDG. Developers are encouraged to complete ArcMap MXD preparation and create and publish web service metadata, then return to the MXD to complete Step 2. Guidance for developing EPA/ISO/POD-compliant metadata for a web service is provided online at: [EPA Geospatial Metadata Style Guide Using EME 5](#). The steps for completing the Map Document Properties Description field are described here:*

STEP 1

Enter overall descriptive information about the web service, with more detail than the summary in this general format:

This {*** ENTER OFFICE/REGION/RESEARCH LAB OF EPA WEB SERVICE CREATOR***} web service contains the following layers: {***DEFINE LAYERS HERE***}. Layers are drawn at scales of {***DEFINE THIS IF MAP CONTAINS SCALE DEPENDENCIES***}. {***ENTER THE APPROPRIATE SECURITY CLASSIFICATION STATEMENT FROM THE CHOICES BELOW***}. {***ENTER THE APPROPRIATE ACCESS CONSTRAINTS STATEMENT FROM THE CHOICES BELOW***}. {***ENTER THE APPROPRIATE USE CONSTRAINTS STATEMENT FROM THE CHOICES BELOW***}.

There is no limit to the length of the description. Use this area to include any pertinent ancillary information that does not belong in another explicitly-defined field. For example, access constraints and use constraints are required elements in other metadata formats but do not have corresponding fields on the REST page. Please note that some applications (including EDG and EPA

GeoPlatform Online) show users only a snippet of the description as a preview, so it is wise to include the most important details at the beginning of the description.

Security classification statements:

For data that is or can be made publicly available to all without restrictions, paste the following statement into this element:

Security classification: Public.

For data that is or can be made available to a restricted audience under certain use restrictions, paste the following statement into this element:

Security classification: Restricted public.

For data that may not be made available to members of the public, paste the following statement into this element:

Security classification: Non-public.

Access constraints statements:

For public data that has no access restrictions, paste the following statement into this element:

Access constraints: None.

For data that are intended for EPA use only, review the following specific access constraints statements to determine if one would be appropriate for the restricted-access dataset:

- Access constraints: EPA Category: Mission Sensitive, NARA Category: Critical Infrastructure
- Access constraints: EPA Category: Drinking Water Vulnerability Assessments, NARA Category: Critical Infrastructure-Water Assessments
- Access constraints: EPA Category: Sensitive Drinking Water Related, NARA Category: Critical Infrastructure-Water Assessments
- Access constraints: EPA Category: IT Security, NARA Category: Information Systems Vulnerability Information
- Access constraints: EPA Category: Law Enforcement Sensitive, NARA Category: Law Enforcement
- Access constraints: EPA Category: Attorney Client Privilege, NARA Category: Legal-Privilege
- Access constraints: EPA Category: Attorney Work Product, NARA Category: Legal-Privilege
- Access constraints: EPA Category: Deliberative Process Privilege, NARA Category: Legal-Privilege
- Access constraints: EPA Category: Personally Identifiable Information (PII), NARA Category: Privacy
- Access constraints: EPA Category: Proprietary, NARA Category: Proprietary
- Access constraints: EPA Category: Confidential Business Information, NARA Category: Proprietary-Manufacturer
- Access constraints: EPA Category: Source Selection Information, NARA Category: Proprietary-Source Selection

For data that are restricted, but for which none of the above statements suitably describe the reason for restriction, paste one of the following general access constraints statements into this element:

- Access constraints: Data are restricted to internal EPA personnel only.
- Access constraints: Data are restricted to internal EPA personnel only and state partners.

Use constraints statements:

For public data that has no use or distribution restrictions, paste the following statement into the element:

Use constraints: None. Please check sources, scale, accuracy, currency and other available information. Please confirm that you are using the most recent copy of both data and metadata. Acknowledgement of the EPA would be appreciated.

For data that are intended for EPA use only, except where distribution is explicitly granted to other users, paste the following statement into the element:

Use constraints: These data should not be distributed to users unless distribution is explicitly granted. Please check sources, scale, accuracy, currency and other available information. Please confirm that you are using the most recent copy of both data and metadata. Acknowledgement of the EPA would be appreciated.

For data that are intended for EPA use only and must not be distributed, paste the following statement into the element:

Use constraints: These data should not be distributed. Please check sources, scale, accuracy, currency and other available information. Please confirm that you are using the most recent copy of both data and metadata. Acknowledgement of the EPA would be appreciated.

- *Example Description:* This EPA Office of Enforcement and Compliance Assurance, Office of Site Remediation Enforcement, Policy and Program Evaluation Division (OECA, OSRE, PPED) web service contains the following layers related to 2012 enforcement actions and cases: Federal Facility, Criminal, CleanUp, Air, Waste, Water, and Chemical. Layers are drawn at all scales. Security classification: Public. Access constraints: None. Use constraints: None. Please check sources, scale, accuracy, currency and other available information. Please confirm that you are using the most recent copy of both data and metadata. Acknowledgement of the EPA would be appreciated.

STEP 2

Once web service metadata is created and published to the EDG, insert the following HTML code at the beginning of the Description field. This provides a hyperlink directly from the REST page to the associated metadata record in EDG. Replace the **ENLARGED** text with the universally unique identifier (UUID) of the metadata record:

```
<A href="https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B101CD940-B0CC-497D-BAC0-A329155F7501%7D">Full Metadata</A>
```

- *NOTE: see https://geodata.epa.gov/arcgis/rest/services/OEI/EPA_Locations/MapServer for an example of the appearance of the Service Description at the REST page. This Service Description was entered into the Map Document Properties Description field as follows:*

```
<A href="https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B101CD940-B0CC-497D-BAC0-A329155F7501%7D">Full Metadata</A> This SEGS web service contains EPA facilities, EPA facilities labels, small- and large-scale versions of EPA region boundaries, and EPA region boundaries extended to the 200nm exclusive economic zone (EEZ). Small scale EPA boundaries and boundaries with EEZ render at scales of less than or equal to 5 million, large scale EPA boundaries draw at scales greater than 5 million. EPA facilities labels draw at scales greater than 2 million. This SEGS dataset was produced by EPA's Office of Environmental Information (OEI). Access constraints: None. Use constraints: None. Please check sources, scale, accuracy, currency and other available information. Please confirm that you are using the most recent copy of both data and metadata. Acknowledgement of the EPA would be appreciated.
```

- *NOTE: When publishing a service in ArcGIS, this embedded URL will convey to the Summary field in the Item Description tab of the Service Editor window – even though it will not appear to exist. Also, this URL will disappear from the Map Document Properties Description if the Map Document Properties window is closed and then reopened. The URL is actually there even though it cannot be seen.*

Author

Author:

(Corresponding REST page field: Document Info: Author:)

{***ENTER OFFICE/REGION/RESEARCH LAB OF EPA WEB SERVICE CREATOR***}

- *Example: US EPA Region 2 Division of Enforcement and Compliance Assistance (REG 02, DECA)*
- *Example: US EPA Office of Water, Office of Wetlands Oceans and Watersheds, Wetlands Division (OW, OWOW, WLD)*

Credits

Credits:

(Corresponding REST page field: Copyright Text:)

Enter credits for the EPA web service creator as the web service provider and the name of data source. Spell out abbreviations unless text length constraints dictate that an abbreviation must be used.

Map Service: {*** ENTER OFFICE/REGION/RESEARCH LAB OF EPA WEB SERVICE CREATOR***}. Data: {***ENTER DATA SOURCE***}.

- *Example:* Map Service: US EPA Office of Water, Office of Ground Water and Drinking Water, Drinking Water Protection Division (OW, OGWDW, DWPD). Data: US Geological Survey.
- *NOTE:* it is recommended that the Credits text not exceed 250 characters, as that is the length limit for the corresponding Credits field in EPA GeoPlatform Online.

Tags

Tags:

(Corresponding REST page field: Document Info: Keywords:)

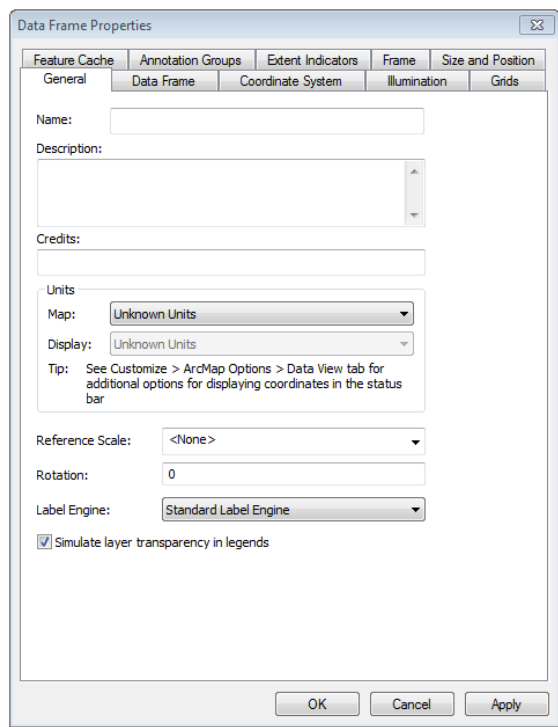
Enter relevant keywords (limited to 250 characters). A list of potential keywords can be found in [EPA's Metadata Style Guide – Keywords and EPA Organization Names](#). At a minimum, include:

US EPA, {***ENTER OFFICE/REGION/RESEARCH LAB OF EPA WEB SERVICE CREATOR***}, {***ENTER SUBJECT***}, {***ENTER DATA SOURCE***}, {***ENTER GEOGRAPHIC EXTENT***}, {***ENTER TIME PERIOD***}

- *Example:* US EPA, EPA Region 7, Environmental Services Division, REG 07, ESD, Toxics Release Inventory, TRI, EPA Office of Information Analysis and Access, OIAA, Iowa, Kansas, Missouri, Nebraska, 2012
- *NOTE:* it is recommended that the Tags text not exceed 250 characters, as that is the length limit for the corresponding Tags field in EPA GeoPlatform Online.

ArcMap Data Frame Properties

(right-click map → Data Frame Properties... → General tab)



Name

Name:

(Corresponding REST page field: Map Name:)

It is recommended that this field match the Title in the Map Document Properties unless there is a good reason for the two names to differ.

- *Example:* Toxics Release Inventory (TRI) Locations, Oklahoma, 2012, EPA OIAA, EPA REG 06, WQPD

Description

Description:

(Corresponding REST page field: Description:)

It is recommended that this field match the Description in the Map Document Properties. Populating this field should be done in the same two-step process to embed HTML code into the beginning of the Description field that provides a hyperlink directly from the REST page to the associated metadata details page at the EDG.

Credits

Credits:

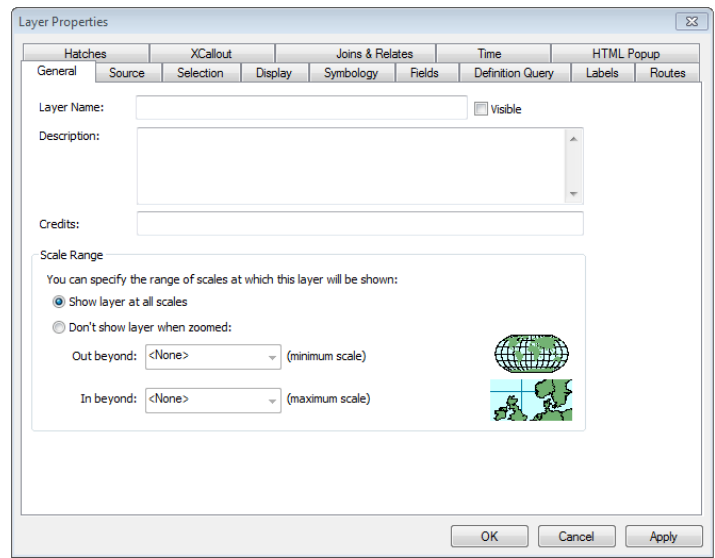
(No Corresponding REST page field)

It is recommended that this field match the data source name from Credits in the Map Document Properties.

- *Example:* Map Service: US EPA Office of Water, Office of Wetlands Oceans and Watersheds, Wetlands Division (OW, OWOW, WLD). Data: US Geological Survey.

ArcMap Group and Layer Properties

(right-click Layer or Group → Properties... → General tab)



Layer Name

Layer Name:

(Corresponding REST page field: Layers:)

Enter the layer name using the following naming convention:

{SUBJECT}

- *Example:* Toxics Release Inventory (TRI) Facility

Description

Description:

(Corresponding group-level or layer-level REST page field: Description:)

Layer Group Description and Layer Description are handled differently:

FOR LAYER GROUP DESCRIPTION:

Enter descriptive information for grouped layers in this general format:

This web service layer group contains the following layers: {***DEFINE LAYERS HERE***}. Layers are drawn at scales of {***DEFINE THIS IF MAP CONTAINS SCALE DEPENDENCIES***}.

- *Example:* This web service layer group contains two Confined Animal Feeding Operation (CAFO) layers: one New Jersey CAFO layer and one New York CAFO layer. Layers in this group are drawn at scales of 1:3 million and larger.
- *Example:* This web service layer group contains three Sole Source Aquifers layers. Each layer displays Sole Source Aquifers at specific scales as detailed in the layer name.

FOR LAYER DESCRIPTION:

Enter descriptive information for the map layer in this general format:

This web service layer displays {***DEFINE LAYER HERE***}. This layer is drawn at scales of {***DEFINE THIS IF MAP CONTAINS SCALE DEPENDENCIES***}.

- *Example:* This web service layer displays stream lines depicting Spring Chinook Salmon distribution in Oregon. This layer is drawn at scales of 1:250,000 and larger.
- *NOTE: It is strongly recommended that every layer in the web service include a hyperlink to a corresponding layer-level FGDC metadata document. The format of the HTML code is the same as that described in the service description above. This provides a hyperlink directly from the layer-level REST page to the layer-level metadata record in the Environmental Dataset Gateway (EDG). Replace the **ENLARGED** text with the universally unique identifier (UUID) of the layer metadata record:*

```
<A href="https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B101CD940-B0CC-497D-BAC0-A329155F7501%7D">Full Metadata</A>
```

However, registering metadata documents in the EDG for every service layer can potentially create redundancy and clutter and cause record management difficulties. The recommended alternative approach is to utilize EDG Download Locations to store the layer metadata records. EDG Download Locations provides an online resource to store data and metadata to make them

readily available to both internal EPA and external public users. The [Procedures for Storing Data at the Environmental Dataset Gateway \(EDG\) Download Locations](#) document offers step-by-step instructions on setting up an EDG Download Location for your organization.

Once the metadata records are placed in a metadata folder on the EDG Data Download Locations, a hyperlink can be created to link to the layer metadata record. To include the metadata link in the Layer Description text, copy the following HTML code, replacing the **ENLARGED** text with the path to the metadata record, and place the code at the beginning of the layer description:

Intranet example (restricted metadata record):

```
<A href="http://edg-intranet.epa.gov/metadata/rest/document?xsl=esri_fgdc&xml=/restricted/OrganizationAcronym/DatasetName/layer_metadata/LayerName.xml">Full Metadata</A>
```

Internet example:

```
<A href="http://edg.epa.gov/metadata/rest/document?xsl=esri_fgdc&xml=/public/OrganizationAcronym/DatasetName/layer_metadata/LayerName.xml">Full Metadata</A>
```

- NOTE: see https://geodata.epa.gov/arcgis/rest/services/OEI/EPA_Locations/MapServer/2 for an example of the appearance of the Layer Description at the REST page. This Layer Description was entered into the ArcMap Layer Properties Description field as follows:

```
<A href="https://edg.epa.gov/metadata/rest/document?xsl=esri_fgdc&xml=/Public/OEI/EPA_Facilities/layer_metadata/RegionBoundaries.XML">Full Metadata</A> This web service layer shows the boundaries of EPA regions based on 2011 TIGER/Line geometry. This layer is drawn at scales of 5,000,001 or less. This SEGS dataset was produced by EPA through the Office of Environmental Information (OEI).
```

Credits

Credits:

(Corresponding group-level or layer-level REST page field: Copyright Text)

It is recommended that this field match the data source name from Credits in the Map Document Properties.

- *Example:* Map Service: US EPA Office of Water, Office of Wetlands Oceans and Watersheds, Wetlands Division (OW OWOW WLD). Data: US Geological Survey.