

Greenhouse Gas Reporting Program

XML Reporting Instructions for Subpart A – General Provisions

United States Environmental Protection Agency
Climate Change Division
Washington, DC

March 14, 2012

These instructions explain how to report the required data for the applicable regulations. Owners and operators of units should refer to the applicable regulations for information about what data are required to be reported.

EPA has finalized a rule that defers the deadline for reporting data elements used as inputs to emission equations for direct emitters. See 76 FR 53057 (published August 25, 2011). In accordance with the rule, e-GGRT is not currently collecting data used as inputs to emission equations.

[This page intentionally left blank]

Table of Contents

	<u>Page</u>
I. Introduction	1
II. Summary of Changes	8
III. Subpart A Overview	12
1.0 General Information	14
1.1 How to Submit Your Annual Report (XML Bulk Upload)	14
1.2 How to Interpret the Uploaded Annual Report Summary	16
1.3 How to Format Your XML Document	19
1.4 Validation Checks.....	22
1.5 Reporting for Multiple Source Category Subparts	25
2.0 Submittal and Facility Site Data	29
2.1 Details about the Submittal File	29
2.2 Facility Site Details	32
2.3 Facility Site Identification	37
2.4 Location Address Information	38
2.5 Parent Company Details	40
2.6 Facility Site Total Emissions	43
IV. Appendix A – Sample XML Document	46
V. Appendix B – Additional Resources	47

List of Tables

	<u>Page</u>
Table 1 Reporting Numbers.....	2
Table 2 Calculated Details Data Element Definitions	5
Table 3 Measurement Details Data Element Definitions	6
Table 4 Unit Identification Details Data Element Definitions.....	6
Table 5 Summary of Changes to the Schema for Subpart A	8
Table 6 XML Validation upon Upload.....	23
Table 7 GHG (Root) Data Element Definitions	30
Table 8 Facility Site Details Data Element Definitions.....	34
Table 9 Facility Site (Identification) Data Element Definitions	37
Table 10 Location Address Data Element Definitions	39
Table 11 Parent Company Details Data Element Definitions	40
Table 12 Examples for Reporting Parent Company Information	42
Table 13 Facility Site Total Emissions (Rollup) Data Element Definitions.....	44

List of Figures

	<u>Page</u>
Figure 1 Example of an XML Tree.....	3
Figure 2 Calculated Details Data Type Schema Diagram.....	5
Figure 3 Measurement Details Data Type Schema Diagram.....	5
Figure 4 Unit Identification Details Data Type Schema Diagram.....	6
Figure 5 “Unbounded” Symbol in Schema Diagram.....	7
Figure 6 Logical “Or” Symbol in Schema Diagram.....	7
Figure 7 Subpart A Reporting Diagram.....	12
Figure 8 XML Validation Error Messages.....	16
Figure 9 ‘Uploaded Annual Report Summary’.....	16
Figure 10 Error Message for Mismatched Facility ID and/or Reporting Year.....	17
Figure 11 Uploaded Annual Report Summary Diagram.....	18
Figure 12 GHG XML File Structure.....	21
Figure 13 GHG (Root) Schema Diagram.....	29
Figure 14 Facility Site Details Schema Diagram.....	32
Figure 15 Facility Site (Identification) Schema Diagram.....	37
Figure 16 Location Address Schema Diagram.....	38
Figure 17 Parent Company Schema Diagram.....	40
Figure 18 Facility-Level Roll-up Emissions Schema Diagram.....	43

List of XML Excerpts

	<u>Page</u>
XML Excerpt 1 Example for “Unbounded” Parent Element	7
XML Excerpt 2 Example for the GHG Schema Root Elements	31
XML Excerpt 3 Example for Facility Site Details	36
XML Excerpt 4 Example for Facility Site (Identification)	37
XML Excerpt 5 Example for Location Address	39
XML Excerpt 6 Example for Parent Company Details.....	41
XML Excerpt 7 Example for Facility Site Total Emissions (Rollup).....	45
XML Excerpt 8 Example for Supplier Site Total Emissions (Rollup).....	45

I. Introduction

The U.S. Environmental Protection Agency's (EPA's) electronic greenhouse gas reporting tool (e-GGRT) extensible markup language (XML) Reporting Schema contains all of the data elements needed to comply with the Greenhouse Gas Reporting Program (GHGRP) beginning with the 2010 data collection year. The XML schema defines expected data elements and attributes, allowable data formats for each data element, and the hierarchical structure and sequence in which data elements must appear in the XML file. Similar to an architectural blueprint that describes the structural design of a house, an XML schema describes the structural design of an XML file. In some cases, it also defines which elements are optional and which are required and the maximum number of occurrences allowed for each element.

The e-GGRT XML schema is made up of a root data element (GHG) and complex and simple data elements. A simple element is a single piece of data. A complex element is a group of simple elements which are logically grouped together. The root data element is the base of the XML schema.

The schema's structure can be thought of as a family tree. The elements are related to each other in parent-child relationships. The root element is the parent element of the entire schema. Complex elements are children of the root element, and complex elements can also be children of other complex elements.

The XML upload method may be used for reporting a facility or supplier's annual greenhouse gas (GHG) data; however, the following actions can only be performed using the e-GGRT web forms:

- User, facility and supplier registration
- Certificate of Representation and Notice of Delegation signing
- Facility representative and agent changes
- Facility and supplier address changes
- Notice of intent to not submit an annual GHG report

All XML files submitted to e-GGRT must be well formed and will be accepted only if they conform to the current version of the e-GGRT XML schema.

An XML submission must only contain GHG data for a single facility or supplier. All data for a facility or supplier must be submitted in a single file as a complete report and must include all of the relevant Subparts. It is not possible to submit a subset of any portion of a facility's data to add, delete, correct or update. The entire report must be resubmitted to make any modification at all. Each subsequent submission for the same facility replaces all of the previously submitted data.

The e-GGRT XML schema contains enumerated lists of the units of measures for some data elements and allowable values for some data elements. For rules regarding the unit of measure or allowable values for a specific data element, please refer to the appropriate Data Element Definitions table.

The e-GGRT XML Reporting Schema is available for download at the e-GGRT help website: <http://www.cdsupport.com/confluence/display/help/XML+Reporting+Instructions>. The zip file contains:

- **GHG_Final.xsd and Included Files**
- **SchemaChanges.xlsx**

Table 1
Reporting Numbers

Number Format	Description
Rounding	<ul style="list-style-type: none"> • CO₂e and CO₂ emissions data expressed in metric tons should be rounded to one decimal place. This should be done regardless of the level of data collection (e.g., unit-level, facility-level). Quantities less than 0.05 metric tons would round to 0.0 and be reported as such. Quantities greater than or equal to 0.05 metric tons would round up to 0.1 and be reported as such. • CH₄ emissions data expressed in metric tons should be rounded to two decimal places. • N₂O emissions data expressed in metric tons should be rounded to three decimal places. • Emissions data for all GHGs other than CO₂, N₂O and CH₄ expressed in metric tons should be rounded to the fourth digit to the right of the decimal (one tenth of a kilogram, or 1 ten thousandth of a metric ton). This rounding should be applied regardless of the level of data collection (unit, facility, etc.). • Other (non-emissions) quantitative data reported by the user (e.g., a monthly HHV sample result, an annual production quantity) will not need to be rounded. • In the case of aggregation/roll-ups, those calculations should be performed on the rounded values.
Percentages	If a value must be reported as a percentage, then the number should be within the range of 0 to 100 (percent), e.g. 85.5% should be reported as 85.5.
Fractions	If a value must be reported as a decimal fraction, then the number should be within the range of 0 and 1, e.g., 1/4 should be reported as 0.25. Leading zeroes are optional.
Integers	Whole number (no decimal places or preceding zeroes). Valid Examples: 2, 15, 230, 0 Invalid Examples: -1, 4.056

Key XML Terms

- **XML:** A markup language for documents containing structured information. The XML specification defines a standard way to add markup to documents. Its primary purpose is to facilitate the sharing of structured data across different information systems, particularly via the internet.
- **XML Schema:** An XML schema describes the structure of an XML document. The schema also defines the set of rules to which the XML document must conform in order to be considered "valid".
- **XML file:** A file containing data organized into a structured document using XML markup.

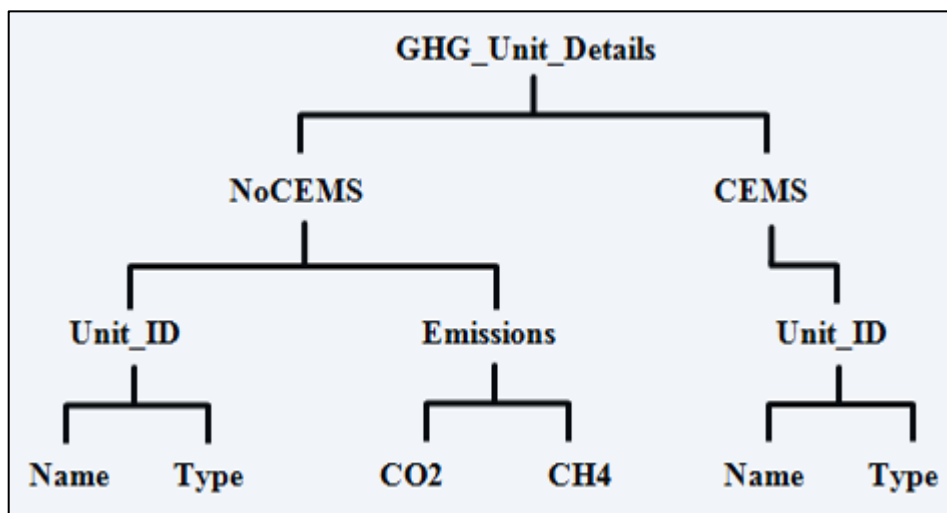
- **Data Element:** An XML data element is used for storing and classifying data in an XML file. Opening and closing tags represent the start and end of a data element. An opening tag looks like <elementName>, while a closing tag has a slash that is placed before the element's name </elementName>. The following example shows how to report the facility's identification number: <FacilitySiteIdentifier>23222</FacilitySiteIdentifier>. The information shaded in blue represents the data element's value.

If a data element does not contain a value, then a single empty tag name may be used. An empty tag has a slash placed after the element's name <FacilitySiteIdentifier/>. **Note:** If you do not intend to report a value for a particular data element, then it is recommended that you do not include the data element in the XML file.

- **Attribute:** An XML attribute contains additional information about a specific data element. An attribute for a data element is placed within the opening tag. The syntax for including an attribute in an element is <elementName attributeName="value">. For example, <TotalCH4CombustionEmissions massUOM="Metric Tons">.
- **Root/Parent/Child Element:** The schema's structure can be thought of as a family tree. At the top of the tree is some early ancestor and at the bottom of the tree are the latest children. With a tree structure you can see which children belong to which parents and many other relationships.

XML data elements are sometimes referenced in terms of how they relate to each other, e.g., parent-child relationships, within the schema's tree structure, also known as hierarchy. The top of the XML tree is considered the root – it is the parent to all data elements within the schema. In the example below, "GHG_Unit_Details" is the root, and just like in many other family trees, there is more than one item with the same name (e.g., "Unit_ID"). The easiest way to distinguish these items is by referencing them in terms of their parent-child relationships, e.g., NoCEMS /Unit_ID vs. CEMS/Unit_ID.

Figure 1
Example of an XML Tree



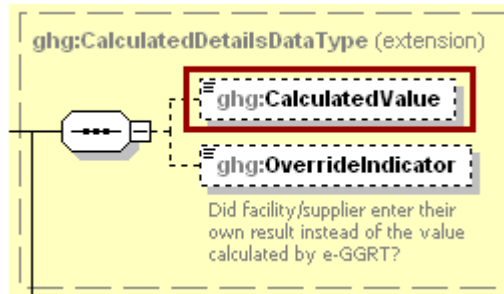
This document provides a step-by-step description of how to report emissions data using the XML schema. Please note the following:

- **Non-applicable data elements should not be included in the facility's XML file.** The schema contains many data elements, some of which may not be applicable to XML reporters in general or to a particular situation. If a data element is not referenced in the instructions (definition tables), then **do not** report or include it in the facility's XML file.
- **Data elements must be reported in a specific order.** The figures and tables in this document depict the specific sequence in which data elements must be arranged in the facility's XML file in order to produce a well-formed XML report.
- **Enumerations are case sensitive.** Many data elements have a defined set of allowable values, also known as enumerations. Values for enumerations must be entered exactly as they are defined within the schema (including punctuation marks) in order to be accepted by schema validation. See the definition tables for a complete list of enumerations.
- **Schema diagrams depict the hierarchy (or tree structure).** The primary purpose of the schema diagrams is to indicate the sequence in which data elements must appear within the facility's XML file and to identify the data elements that are required (must be reported) and conditionally required (see last bullet). Required data elements are boxed in red and conditionally required data elements are noted.
- **Definition tables provide details for required and conditionally required data elements.** The tables are designed to provide unique instructions for reporting a given data element, including the list of enumerations and required units of measure, if defined. As noted above, there are some data elements in the schema that are not applicable to XML reporters or to a particular situation. For example, the "OverrideIndicator" data element is used solely by e-GGRT to indicate that the web form reporter chose to override the system's calculated value with their own. These non-applicable data elements **are not** included in the definition tables. If a data element is not referenced in a definition table, then **do not** report or include it in the facility's XML file.
- **Commonly used data types are not depicted in the schema diagrams nor listed separately in the definition tables.** The schema diagrams display almost every data element in the schema except those that are associated with the three most commonly occurring data types:
 - Calculated Details
 - Measurement Details
 - Unit Identification Details

Once defined, these data types (static collection of data elements) are then associated as children to every data element in the schema containing a measured or calculated value or unit details. These child data elements do not appear in the diagrams and are not listed on separate rows in the definition tables in order to reduce their redundancy. They are however, referenced in the tables in the description of their parent data element. See Figures 2-4 and Tables 2-4.

- **Some data elements are conditionally required.** Data elements which are conditionally required are noted in the schema diagrams and the data element definitions tables. If your facility meets the condition specified for the data element, then the data element is required and you must report it in the facility's XML file. If your facility does not meet the condition specified for the data element, then **do not** include the data element in the facility's XML file. If a parent element is not required, then **do not** include any of its child data elements in the facility's XML file.

Figure 2
Calculated Details Data Type Schema Diagram

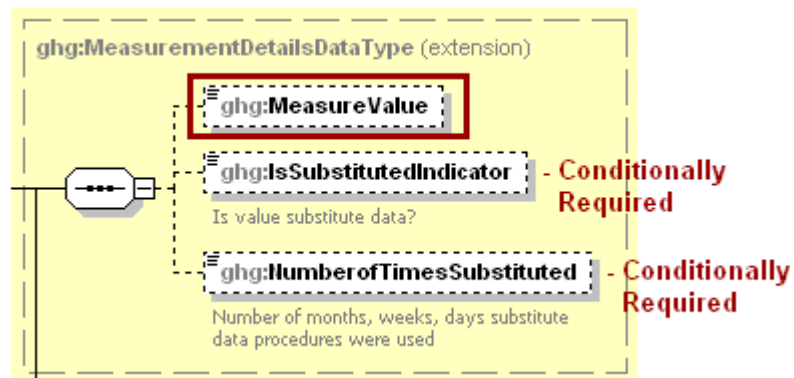


Note: Data elements boxed in red are required.

Table 2
Calculated Details Data Element Definitions

Data Element Name	Description
CalculatedDetailsDataType	
CalculatedValue	Calculated value (decimal).
OverrideIndicator	Note: Do not include this data element in the facility’s XML file because it only applies to web form reporters. It is a flag set by e-GGRT to indicate that the system-calculated value was overridden with the web form reporter’s value.

Figure 3
Measurement Details Data Type Schema Diagram

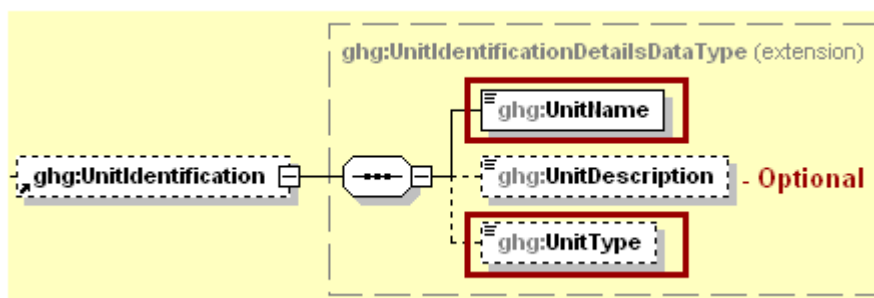


Note: Data elements boxed in red are required. Please see page 4 of this document for more information on conditionally required elements.

Table 3
Measurement Details Data Element Definitions

Data Element Name	Description
MeasurementDetailsDataType	
MeasureValue	Measured value (decimal).
IsSubstitutedIndicator	An indication (Y/N) that the measure value contains substituted data. Note: Do not include this data element in your XML file unless noted in the instructions for the particular measured value.
NumberOfTimesSubstituted	The number (integer) of days, months, weeks or hours in the reporting year that missing data procedures were followed. Note: Do not include this data element in your XML file unless noted in the instructions for the particular measured value.

Figure 4
Unit Identification Details Data Type Schema Diagram



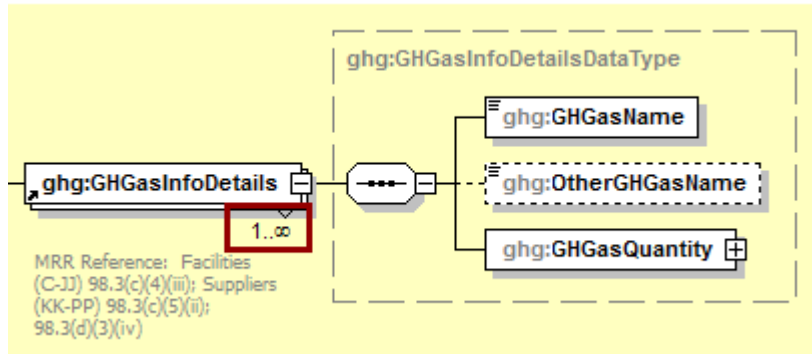
Note: Data elements boxed in red are required.

Table 4
Unit Identification Details Data Element Definitions

Data Element Name	Description
UnitIdentificationDetails	
UnitName	A unique name (ID) for each unit so that the data for different units can be recorded, maintained and retrieved clearly.
UnitDescription	Optional brief description of the unit.
UnitType	The type of unit. The list of allowable values varies. For more information, refer to the instructions for the specific unit process to be reported. For example, if reporting Flare Gas details, the unit type would be “Flare”.

The XML symbol “1..∞” shown in Figure 5 means that the parent element is “unbounded” so that multiple instances of the parent element can be reported. XML Excerpt 1 shows an example of reporting multiple instances of a parent element.

Figure 5
“Unbounded” Symbol in Schema Diagram

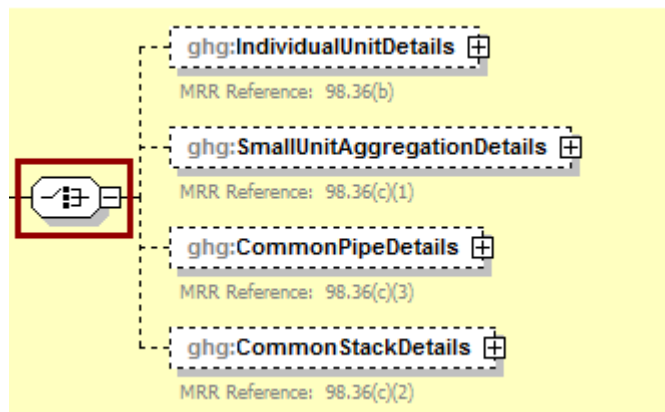


XML Excerpt 1
Example for “Unbounded” Parent Element

```
<ghg:GHGasInfoDetails>
  <ghg:GHGasName>Carbon Dioxide </ghg:GHGasName>
  <ghg:GHGasQuantity massUOM="Metric Tons">
    <ghg:CalculatedValue>384781.2</ghg:CalculatedValue>
  </ghg:GHGasQuantity></ghg:GHGasInfoDetails>
</ghg:GHGasInfoDetails>
<ghg:GHGasInfoDetails>
  <ghg:GHGasName>Methane</ghg:GHGasName>
  <ghg:GHGasQuantity massUOM="Metric Tons">
    <ghg:CalculatedValue>4004.12</ghg:CalculatedValue>
  </ghg:GHGasQuantity></ghg:GHGasInfoDetails>
</ghg:GHGasInfoDetails>
```

The XML symbol for a logical “Or” shown in Figure 6 means that **only one** of the data elements following the symbol can be reported for the current instance of the parent element.

Figure 6
Logical “Or” Symbol in Schema Diagram



II. Summary of Changes

The following modifications were applied to the previous version of the GHG XML schema in relation to Subpart A (GHG_SubPartA_v2.0.xsd) for reporting year 2011.

**Table 5
Summary of Changes to the Schema for Subpart A**

No.	Change Description
1	<p>Reporting Year 2010 Resubmittals. Resubmittals of GHG data for Reporting Year (RY) 2010 are permitted; however, data must conform to the current version of the e-GGRT XML schema (v2.0). The current schema contains all of the data elements needed to comply with both RY2011 and RY2010 requirements. A few of the data elements have changed – in some cases, a name was changed to correct a typo. In other cases, an enumeration or attribute was added or removed. In order to successfully upload your RY2010 data, you must update the previously submitted XML file to reflect these new changes in the schema. For more details, refer to the XML reporting instructions for the Subpart(s) to which the facility or supplier is subject.</p>
2	<p>New RY-Specific Business Rule Quality Checks. Upon upload, e-GGRT performs initial quality checks to ensure your XML submission file adheres to the basic specifications defined in the GHG schema (also see Section 1.4). The initial checks performed on your XML file work at several levels. The first is well-formedness: these checks determine if the XML file is structured correctly and data elements are spelled as defined in the schema and are placed in the correct sequence within the file. The second group of checks determines if reported values adhere to the constraints defined in the schema. For example, these checks determine if a reported value matches an enumeration defined for the data element. The third group of checks determines if reported values adhere to existing business rules. For example, they determine if values reported for data elements “StartDate” and “EndDate” correspond to the “ReportingYear”. In addition to these, there are new RY-specific business rules. For example, there are four data conditions that were only permitted in RY2010 reports, and are no longer valid for RY2011.</p> <ul style="list-style-type: none"> • Subpart A The “Part75BiogenicEmissionsIndicator” data element should not be included in your XML file upload if you are submitting an annual report for RY2011. The option to separately calculate biogenic CO₂ emissions from Part 75 units [i.e., units that are subject to Subpart D and/or units that use the methods in 40 CFR 75 to quantify mass emissions in accordance with 98.33(a)(5)] was only permitted for RY2010. XPath = GHG/FacilitySiteInformation/FacilitySiteDetails/Part75BiogenicEmissionsIndicator • Subpart C The “AbbreviatedReport” data element should not be included in your XML file upload if you are submitting an annual report for RY2011. The abbreviated reporting option was only permitted for certain Subpart C reporters in RY2010. XPath = GHG/FacilitySiteInformation/AbbreviatedReport • Subpart HH The enumerated value "Other" is not a valid option for data element “CurrentAnnualWasteQuantityMethod” for RY2011. The "Other" option was only permitted to indicate use of best available monitoring methods (BAMM) for RY2010. XPath = SubPartHH/CurrentWasteQuantityDetails/YearWasteDetails/YearWasteDetail/CurrentAnnualWasteQuantity

No.	Change Description
	<p>New RY-Specific Business Rule Quality Checks (cont'd).</p> <ul style="list-style-type: none"> Subpart OO The “ReactantMassRemoved” and “ReactantDetails” data elements should not be included in your XML file upload if you are submitting an annual report for RY2011. These data elements, required by 98.416(a)(8) and (a)(9), are related to reactant information that was changed to recordkeeping requirements (not reporting requirements) following RY2010. <p>XPath = GHG/FacilitySiteInformation/FacilitySiteDetails/SubPartInformation/SubPartOO/FacilityDetails/ProcessDetails/ReactantMassRemoved</p> <p>XPath = GHG/FacilitySiteInformation/FacilitySiteDetails/SubPartInformation/SubPartOO/FacilityDetails/ProcessDetails/ProcessProductionDetails/ProductionDetails/ReactantDetails</p>
3	<p>Data Elements Rollover (Carry-Over).</p> <p>If you previously reported for RY2010 using the e-GGRT web forms, some of your RY2010 data has been carried forward (automatically entered) in your RY2011 forms to reduce reporting burden. This convenience does not extend directly to XML reporters because it is not possible to submit a subset of any portion of a facility's data. However, a list of the RY2010 data elements that were carried over to RY2011 is available on the e-GGRT help site, Data Elements Rollover Tables (data elements with a “Y” in the last column “RY2010 to RY2011 Import Decisions”). If possible, use this information to modify your XML mapping software programs.</p> <p>It is still your responsibility to review and assure that all the information in your submission is correct, but EPA believes that these data elements are unlikely to change significantly from year to year. EPA followed three broad rules for determining which data would be rolled forward from RY2010 to RY2011:</p> <ul style="list-style-type: none"> General Facility Characterization Data which does not often change from year to year was carried forward to RY2011 where possible. Unit names, fuels and measurement methods selected or provided in RY2010 were carried forward to RY2011 where possible. Specific emissions, missing data and activity characterizations provided in RY2010 were not carried forward to RY2011. <p>Note: The reporter is responsible for ensuring all data is accurate before submitting. Consistent with 98.4(a), it is the designated representative (DR) for the facility or supplier that is responsible for reporting for the facility or supplier. The current facility ownership is responsible for identifying and authorizing a DR, and the DR is responsible for timely and accurate reporting. With respect to accurate reporting, the rule, per 98.4(e)(1), requires certification of your GHG emissions report, "I certify that the statements and information are to the best of my knowledge and belief true, accurate and complete".</p>
4	<p>The data element “DateTimeReportGenerated” is now optional.</p> <p>Xpath = GHG/FacilitySiteInformation/DateTimeReportGenerated</p>
5	<p>All variations of the data element/attribute “Confidential Business Information Indicator” were removed from the XML schema.</p>

No.	Change Description																								
6	<p>BAMM Specifications.</p> <p>Subpart A requires a brief description of each "best available monitoring method" used, the parameter measured using this method, and the time period during which the best available monitoring method was used (see §98.3(c)(7)), if applicable. Please note that consistent with the final rule containing Confidentiality Determinations published in the Federal Register on May 26, 2011, and the accompanying memorandum titled, "Final Data Category Assignments and Confidentiality Determinations for Part 98 Reporting Elements," the information reported under 98.3(c)(7) has been determined to be either emissions data, and therefore available to the public, or not eligible for confidential treatment, and thus available to the public.</p> <p>Note: Only facilities or suppliers that have been approved by EPA to use BAMM or have automatically been granted BAMM under the rule should report the information described above. If your facility does not fall into one of these categories, you should not enter data in the BAMM fields.</p> <p>There are new data elements for reporting the dates in which a BAMM was used during the reporting year: "BAMMUseStartDate" and "BAMMUseEndDate".</p> <p>Xpath = GHG/FacilitySiteInformation/BAMMUseStartDate Xpath = GHG/FacilitySiteInformation/BAMMUseEndDate</p>																								
7	<p>Standardized Parent Company Names.</p> <p>To improve the quality and utility of GHG data, EPA has established new guidelines for standardizing company parent names. As a first step, EPA developed a list of existing parent companies. For XML reporters, these standardized parent company names are not currently defined as enumerations for data element "ParentCompanyLegalName" but the list is posted at http://www.ccdsupport.com/confluence/download/attachments/110494043/GHGRP+Parents+Companies_2011a.pdf. If your facility's parent company name is on the list, then you should report its name exactly how it appears in the list.</p> <p>If you facility's parent company name is not already on the list, then the name you report must adhere to the following style guidelines.</p> <ul style="list-style-type: none"> • Eliminate all periods • Use "&" instead of "AND" • Report "North America" instead of NA <p>Also, when reporting the parent company name, use the terms displayed in the "Acronym" column of the table below:</p> <table border="1" data-bbox="624 1473 1110 1877"> <thead> <tr> <th>Acronym</th> <th>Definition</th> </tr> </thead> <tbody> <tr> <td>CORP</td> <td>Corporation</td> </tr> <tr> <td>ASSOC</td> <td>Association</td> </tr> <tr> <td>CO</td> <td>Company</td> </tr> <tr> <td>DIV</td> <td>Division</td> </tr> <tr> <td>INC</td> <td>Incorporated</td> </tr> <tr> <td>LP</td> <td>Limited Partnership</td> </tr> <tr> <td>LTD</td> <td>Limited</td> </tr> <tr> <td>LLC</td> <td>Limited Liability Company</td> </tr> <tr> <td>PTNR</td> <td>Partnership</td> </tr> <tr> <td>USA</td> <td>United States of America</td> </tr> <tr> <td>US</td> <td>United States</td> </tr> </tbody> </table> <p>For more details on how the list of parent company names was compiled, visit http://www.ccdsupport.com/confluence/display/help/Standardization+of+Parent+Company+Names+-+Style+Guide.</p>	Acronym	Definition	CORP	Corporation	ASSOC	Association	CO	Company	DIV	Division	INC	Incorporated	LP	Limited Partnership	LTD	Limited	LLC	Limited Liability Company	PTNR	Partnership	USA	United States of America	US	United States
Acronym	Definition																								
CORP	Corporation																								
ASSOC	Association																								
CO	Company																								
DIV	Division																								
INC	Incorporated																								
LP	Limited Partnership																								
LTD	Limited																								
LLC	Limited Liability Company																								
PTNR	Partnership																								
USA	United States of America																								
US	United States																								

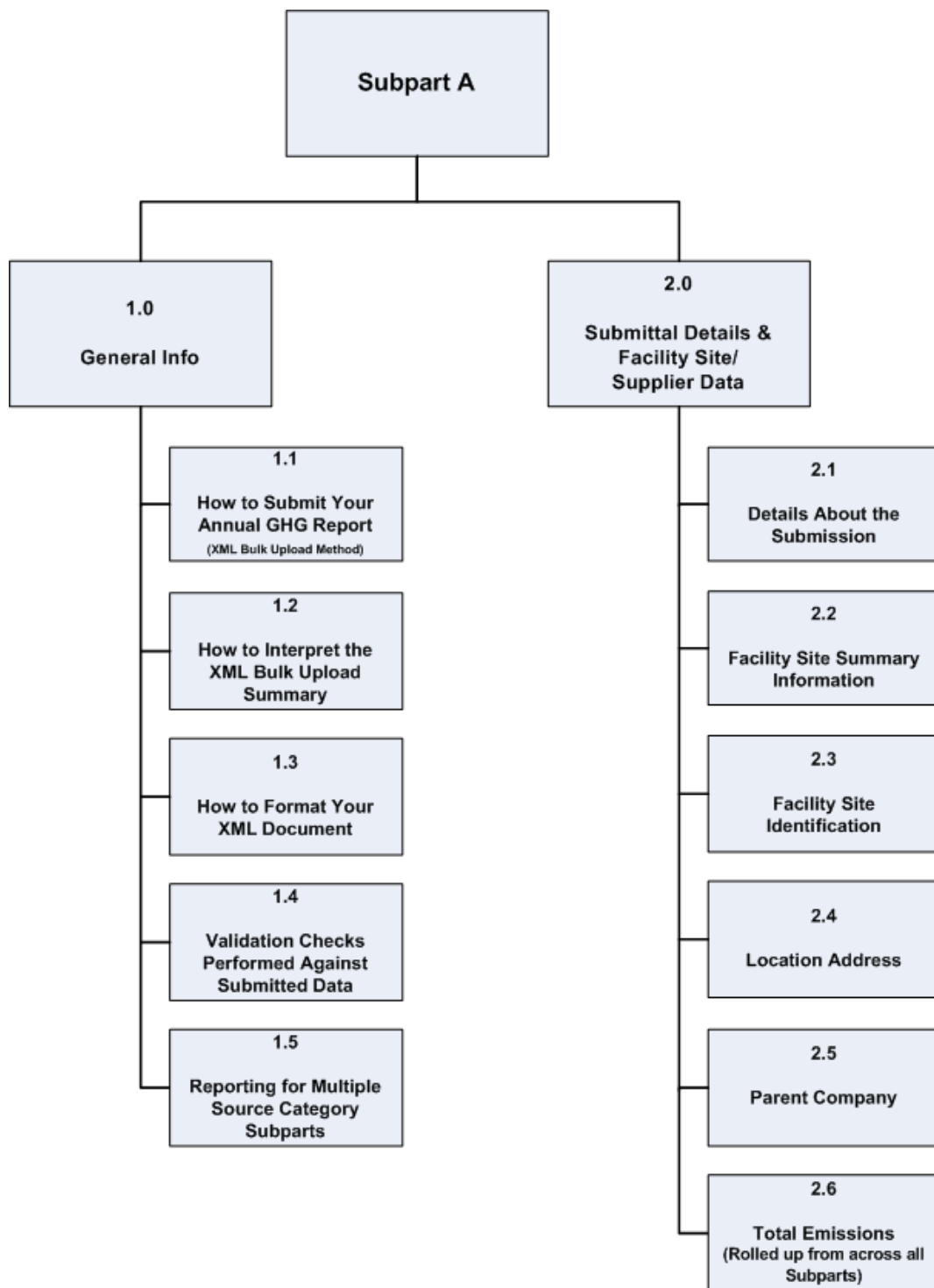
Document Changes:

3-9-2012 – Modified some of the emissions values within the XML excerpts to emphasize the rounding rules, see [Table 1](#).

3-14-2012 – Removed references to “Part75BiogenicEmissionsIndicator” data element (see item 2 in Table 5). Corrected typographical errors.

III. Subpart A Overview

Figure 7
Subpart A Reporting Diagram



The XML schema includes the following areas for reporting for Subpart A, as displayed in the reporting diagram:

1.0 General Information: includes basic information about the GHG submittal process and includes tips to ensure the completeness and quality of your reporting data.

- 1.1. How to submit your annual GHG report
- 1.2. How to interpret the XML bulk upload summary
- 1.3. How to format your XML document
- 1.4. Validation checks performed against submitted GHG data
- 1.5. Reporting for multiple source category Subparts

2.0 Submittal Details and Facility or Supplier Site Data: includes information on how to report general information about your annual GHG report and the facility or supplier, such as the facility or supplier name, street address, U.S. parent company information and the total emissions (or quantities) for CO₂e. For facilities, CO₂e (excluding biogenic CO₂) and biogenic CO₂ are reported separately. These are aggregated across all source category Subparts associated with the facility or the supplier.

- 2.1. Details About the Submission
- 2.2. Facility Site Summary Information[†]
- 2.3. Facility Site Identification[†]
- 2.4. Location Address
- 2.5. Parent Company
- 2.6. Total Emissions for the Facility (Quantities for Suppliers)

[†] The “Facility Site Information” and “Facility Site Details” sections in the schema apply to both facility and supplier. In general, where XML instructions refer to "facility" it means "facility or supplier".

1.0 General Information

1.1 How to Submit Your Annual Report (XML Bulk Upload)

This section provides step-by-step instruction on how to upload and submit your annual GHG data in XML format. All annual GHG reports must be submitted to the EPA through e-GGRT.

In order to submit an annual GHG report in XML format, you must switch the facility or supplier's default reporting method to "Data upload via XML". Follow the steps outlined below.

- Step 1:** Create an XML file containing the required data for Subpart A and every source category Subpart associated with your facility or supplier.
- Step 2:** Log into e-GGRT and click the **Data Reporting** tab.
- Step 3:** Open the facility or supplier for which you are submitting an XML report.
- Step 4:** Click **Change** next to the Facility or Supplier's GHG Reporting Method.
- Step 5:** Click "Bulk upload of XML" and then **Save**.
- Step 6:** Click **OK** at the warning prompt.

Changing your GHG Reporting Method will result in the loss of any previously entered GHG Data for the current reporting year.

The system displays the message highlighted in yellow above. It warns that if you proceed with changing the reporting method, all previously entered web form data will be lost (removed from e-GGRT). This does not include the data that was previously submitted. You will always be able to view all previously submitted reports in HTML or XML format.

After following the steps above, you can proceed with uploading your XML data – just browse to your zipped or unzipped XML document and click **Upload**. E-GGRT will then begin processing the document.

If critical errors are encountered during this stage, then processing is halted. E-GGRT will not generate a report for your review, and you will not be allowed to submit your annual GHG data until the errors are corrected. For more information, see [Section 1.4](#), Validation Checks.

Frequently Asked Questions

- Q:** If I report via web forms this year, can I change to XML next year?
- A:** Yes, however, when you switch from web form reporting to XML upload, we recommend saving a backup copy of your data by generating your annual GHG report and saving both the XML and HTML versions locally on your computer.
- Q:** Will reporters be able to upload an XML file and then edit the data via web forms?
- A:** No, reporters must choose either web form data entry or XML upload. Once an XML file has been uploaded, you may review the e-GGRT summary of that file; however, you may not edit it

using the web forms data entry pages. If after uploading an XML file you determine that the data must be changed, you must edit the XML file outside of e-GGRT and upload the new version.

Q: After I use the 'Data upload via XML' option for a facility or supplier can I switch to the 'Data entry via e-GGRT web-forms' option?

A: Yes, however, switching between reporting methods deletes already entered data. This is presented to the user through a pop-up confirmation warning.

1.2 How to Interpret the Uploaded Annual Report Summary

This section provides guidance in interpreting the Uploaded Annual Report Summary. Every time your XML document is uploaded into e-GGRT, the system will begin processing it. If your upload fails initial parsing then the upload status will be “*Not generated, Errors during report generation. See below for details.*” To view a complete description of the parsing error, click the blue link, **Show Full Error Message**. You will need to upload a corrected XML file in order to continue. The figure below displays a page with a parser error message.

Figure 8
XML Validation Error Messages

If your XML file passes the initial validation checks, then the system will display an “Uploaded Annual Report Summary” table as depicted in the figure below.

Figure 9
‘Uploaded Annual Report Summary’

UPLOADED ANNUAL REPORT SUMMARY

Field Name	XML Value	eGGRT Value
Reporting Facility	Test Facility AA-1	Test Facility AA-1
Reporting Year	2011	2011
GHG Facility ID	524117	524117
Biogenic CO ₂ emissions from subparts C - HH (metric tons)	0	0
CO _{2e} emissions (excluding biogenic) from subparts C - HH (metric tons)	13986	13986
CO _{2e} quantity from supplier categories (metric tons)	0	0

The values displayed in the **XML Value** column are parsed out of your XML document. The values displayed in the **e-GGRT Value** column are expected based on data in the e-GGRT database or, in the case of the facility-level CO₂ or CO₂e values, as calculated by e-GGRT. The first three items: **Reporting Facility**, **Reporting Year** and **GHG Facility ID**, should always match exactly. If there is a difference between these values, then the upload fail initial parsing and e-GGRT will display an error message as depicted in the figure below.

Figure 10
Error Message for Mismatched Facility ID and/or Reporting Year

The screenshot shows the e-GGRT web interface. On the left is a navigation menu with 'e-GGRT Help' and links for 'How to add a subpart and report data', 'General reporting information', and 'How to submit an annual report'. The main content area has a progress bar with three steps: 'Generate and Review' (active), 'Certify and Send', and 'Confirmation'. Below the progress bar, it says 'Test Facility AA-1' and 'e-GGRT Greenhouse Gas Annual Report Submission (2011)'. There are navigation links: 'Select Facility » Facility Overview » Generate and Review'. A grey box titled 'PRE-CERTIFICATION PREPARATION' contains text: 'Preparation includes generating then reviewing the Annual Report. When complete, you will be able to proceed to certify and submit the Annual Report.' Below this is a table:

Report	Uploaded File Name	Status	Attached By	Attached Date
2011 Annual Report v8	Subpart Y 2-14-2012.xml	Not generated, Errors during report generation. See below for details.	Bloom, Amy	02/23/2012 11:03:17 AM

Below the table is a section titled 'UPLOADED ANNUAL REPORT SUMMARY' with a yellow warning icon and the following text: 'The GHGRP ID 524777 within the uploaded XML file does not match the GHGRP ID of the facility you currently have selected and/or the Reporting Year within the uploaded XML file does not match the Reporting Year you currently have selected.' There is a link 'Close Full Error Message' and a second warning icon with the text: 'gov.epa.ghg.exception.ImportException: The GHGRP ID 524777 within the uploaded XML file does not match the GHGRP ID of the facility you currently have selected and/or the Reporting Year within the uploaded XML file does not match the Reporting Year you currently have selected.' At the bottom left of the main content area is a 'BACK' button.

Frequently Asked Question

Q: Where do I find my facility ID?

A: The “GHG Facility ID” is system assigned and is displayed on both the Data Reporting and Facility Management tabs.

The **GHG Details** table shown below includes a breakdown of GHGs by Subpart parsed from your uploaded file. Examine this table closely to ensure that you agree with the results. If the ‘rolled up’ GHG details do not match the values you intend to report, then your XML report likely contains a formatting or calculation error.

Figure 11
Uploaded Annual Report Summary Diagram

UPLOADED ANNUAL REPORT SUMMARY

Field Name	XML Value	eGGRT Value
Reporting Facility	Test Facility AA-1	
Reporting Year	2011	2011
GHG Facility ID	524117	524117
Biogenic CO ₂ emissions from subparts C - HH (metric tons)	111	111
CO _{2e} emissions (excluding biogenic) from subparts C - HH (metric tons)	2391762.2	2391762.2
CO _{2e} quantity from supplier categories (metric tons)	0	0

GHG DETAILS (source categories, subparts C - HH)

Subpart	Greenhouse Gas	Amount (metric tons)
C	CO ₂ (biogenic)	111
C	CH ₄	1,111
C	N ₂ O	111
C	CO ₂ (excluding biogenic)	111,799.2
X	CO ₂ (biogenic)	0
X	CH ₄	0
X	N ₂ O	0
X	CO ₂ (excluding biogenic)	2,222,222



1.3 How to Format Your XML Document

This section explains how to create a conformant XML document. It includes advice on best practices for reporting your data as well as general information on how to construct your XML document.

Creating the XML file using Microsoft Applications

Many Microsoft applications have the capability to export data and create XML files. However, these files will not be compatible with the GHG schema structure. In particular, you cannot use MS Access to export your data and use the built-in functionality to create an XML document. You cannot use MS Excel to either export your data or create the XML document. These applications will create an XML document that is not in compliance with EPA's guidelines and will not validate against GHG_Final.xsd.

Data Types

Most data types in the GHG schema are one of the following: strings, decimal, count (Integer), year or date. When a data element is identified as a string but appears to be storing numeric values, you are expected to provide the correct numeric format as indicated in the reporting instructions for your specific source category Subpart. E-GGRT will convert the string values into the formats defined and apply checks for these data types. Data which are not consistent with the formats defined will be rejected.

Dates and Years

All date and year data elements should be formatted as follows:

- Date** If a data element name contains the word "date," the data element is for a specific day. These should be represented as an eight digit sequence of numeric characters in a string format of YYYY-MM-DD and should include leading zeroes between the representative elements containing only one digit.
- Year** If a data element name contains the word "year," the data element is for a calendar year. This data should be reported as a four digit sequence of numeric characters in a string format of YYYY.

Reporting Numbers

There are several different reporting formats for numbers. Please refer to [Table 1](#) in the introductory section of this document.

The GHG Schema Namespace

The purpose of an XML namespace is to ensure that data elements and attributes referenced in your XML document are uniquely named. This is especially important when your GHG data is combined with data from other systems having data elements with the same name. For example, the XML schemas for the Emissions Inventory System (EIS) and e-GGRT each contain a data element named ‘*FacilitySiteIdentifier*’. This data element serves different purposes depending on the system with which it is associated. Now suppose both systems contain a *FacilitySiteIdentifier* = 87675. In EIS, that identifier might refer to ABC Acme, Inc. but in e-GGRT, it might refer to the Blue Glass Corporation, a completely different company. Using a namespace identifier avoids such ambiguities.

Namespace identifiers are typically three-letter acronyms that precede every data element and attribute tag in your XML. For example, <*FacilitySiteIdentifier*> becomes <*ghg:FacilitySiteIdentifier*>. In this example, the first data element name is not unique but it becomes unique when the prefix (*ghg:*) is added.

Namespace identifiers are defined in the declaration statement at the top of each XML file. The declaration statement also contains a reference to the location of the schema definition files. Ideally, you should reference the website in which the schema is hosted. If that is not available, then you have the option of referencing a local copy of the schema files. These are the schema files that are downloaded to your system.

Figure 12 provides an example of a namespace declaration statement that references a local copy of the schema root file (on the L: network drive). Substitute the L: network directory path or URL in the example with the path to your local schema root file. If your directory path or URL contains spaces, please modify the path so that each space is replaced with “%20”. For example:

Actual path: P:/GHG Reporting/XML Schema/e-GGRT/02012012/GHG_Final_v2.0.xsd

Modified path: P:/GHG%20Reporting/XML%20Schema/e-GGRT/02012012/GHG_Final_v2.0.xsd

Frequently Asked Questions

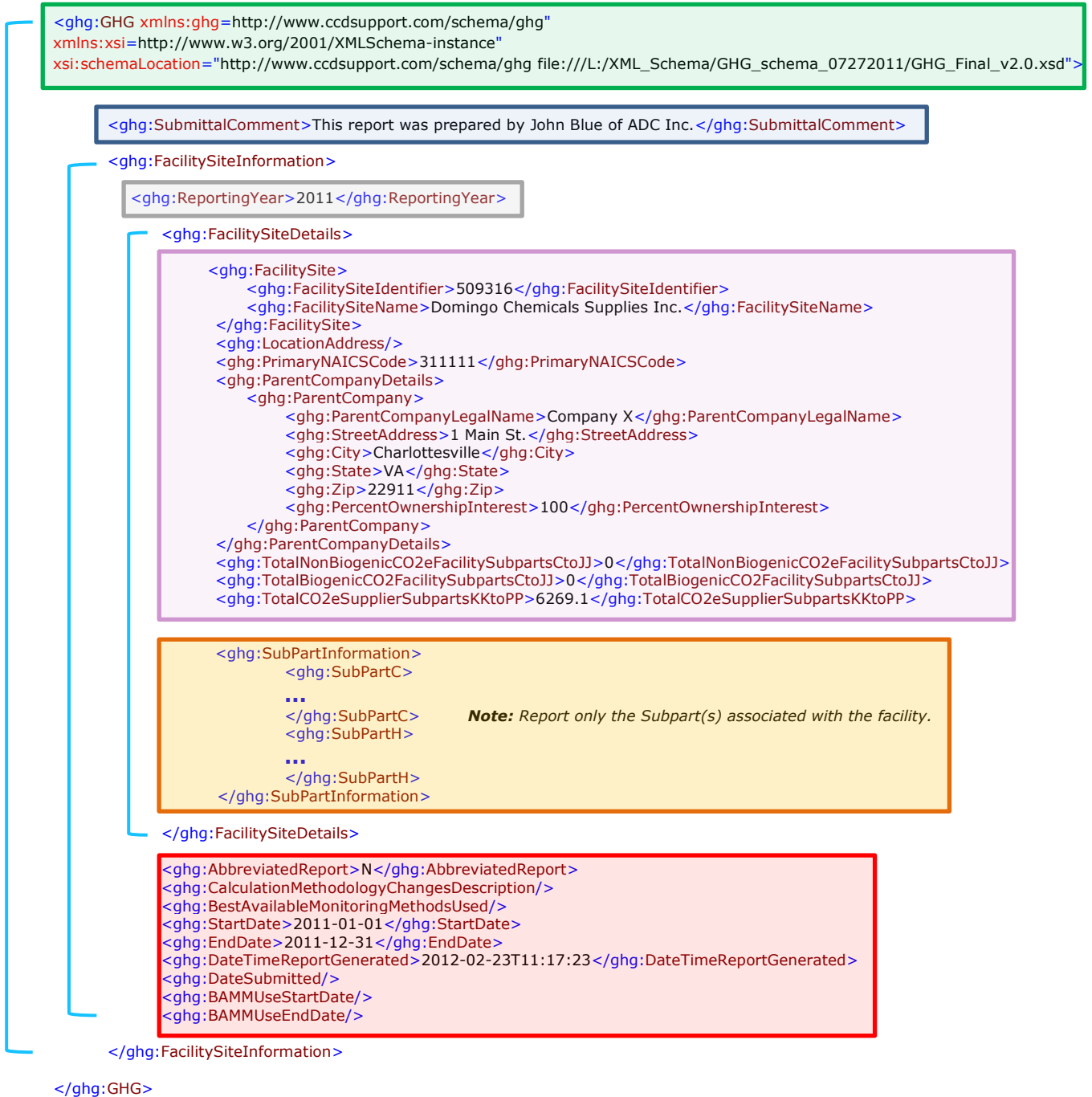
- Q:** Are there tools available that will generate an e-GGRT XML file out of the values in our database?
- A:** There are commercial products available for producing XML files but their applicability will depend on your database provider. EPA is not supporting such functionality at this time.
- Q:** Can I enter test data using the web forms, generate a report as XML and use that as a guideline for creating XML files?
- A:** Yes, the XML file generated by e-GGRT is compliant with the current schema and can be used as a model.
- Q:** Which file extensions are supported by e-GGRT for XML upload?
- A:** E-GGRT currently supports .xml and .zip file extensions.

The GHG XML File Structure

The content within your XML file must be ordered precisely as defined in the GHG schema. Some data elements, such as “SubmittalComment”, are optional and do not have to be included in your XML file. However, if reported, then the data element must appear in the specified order. For example, the “SubmittalComment” data element (if reported) must always appear immediately following the

namespace declaration. The following diagram depicts a high-level view of the schema's hierarchy. It contains a sample XML file that has been color coded to denote each level within the hierarchy.

Figure 12
GHG XML File Structure



Legend

Green	Namespace declaration
Blue	Submittal comment
Gray	Reporting year
Pink	General information about the facility
Orange	Subpart GHG data
Red	Additional information about your XML file submittal

1.4 Validation Checks

This section identifies the quality checks that e-GGRT performs to ensure your XML submission file adheres to the basic specifications defined in the GHG schema. The initial checks performed on your XML file work at two levels:

- **Well-formedness**

A well-formed XML document is one that matches the basic specifications for any XML file. This means that all tags starting with a `<` must have a matching `>`. Further, values for any attributes within the opening tag element must be quoted either with single or double quotes.

Also, the open and closing elements must match. When a close tag is encountered, it must hold the same text value as the most recent start tag. XML is case sensitive, so open and close tags must be in the same case.

A well-formed XML document contains code that is syntactically correct. Every data element referenced within the document is either

- opened and subsequently closed,
- an empty element, which in that case must be closed or
- properly nested so that it does not overlap.

For example, in XML: `<GHGasName>Methane</GHGasName>` is a well-formed data element, while `<GHGasInfoDetails><GHGasName>Methane</GHGasInfoDetails>` is not, since the `GHGasName` element is not closed. In XML, empty elements (elements that inherently have no content) should be closed by putting a slash at the end of the opening tag, e.g. `<TestMethod/>`.

In a well-formed document, all data elements are well-formed and a single element, known as the root element, contains all of the other elements in the document.

For example, the code below is not well-formed XML because the `ReportingYear` and `AbbreviatedReport` elements overlap:

```

<!-- WRONG! NOT WELL-FORMED XML! -->
<ReportingYear>2011<AbbreviatedReport>N</ReportingYear></AbbreviatedReport>

<!-- CORRECT: WELL-FORMED XML! -->
  <FacilitySite>
    <FacilitySiteIdentifier>523937</FacilitySiteIdentifier>
    <FacilitySiteName>ABC Industries</FacilitySiteName>
  </FacilitySite>

```

- **Valid**

A valid XML document complies with the restraints stated within the schema definition. Thus data elements must appear in the defined hierarchical structure and the content of the individual elements must conform to the declared data types specified in the schema. For more information, visit the following website: http://www.codeproject.com/KB/books/wrox_beginningxml2.aspx.

Important Considerations:

- 1) This initial set of validation checks only determine if your XML file can be uploaded into e-GGRT for further evaluation.

- 2) Once uploaded, your XML submission will be subject to the same validation and quality assurance as a web form submission.
- 3) EPA will follow up if there are questions.

The e-GGRT XML schema contains validation business rules regarding the content of the submission, and some data types are constrained. You will receive a validation report from EPA upon uploading your XML file. The following table identifies the basic set of schema validation checks that e-GGRT initially performs; however, it does not include the numerous business rules that are also validated.

Table 6
XML Validation upon Upload

Data Element Name	Check Type	Explanation
FacilitySiteInformation	Present	An XML submission can only contain GHG data for a single facility or supplier. Upon upload, e-GGRT will verify that your XML submission file contains one, and only one, 'FacilitySiteInformation' record.
ReportingYear	Present, Format and matches open submission window	Submissions will only be accepted for open submission windows. Upon upload, e-GGRT will verify that your XML submission file contains a properly formatted value in the 'ReportingYear' record and that it matches an open submission window. For example, if the current submission window is 2011, then submission files containing a ReportingYear of 2012 would not be accepted.
FacilitySiteDetails	Present	E-GGRT only accepts submissions containing a facility site details record. This record contains information about the facility and its emissions.
StartDate	Present and Format	A start date record must exist and be formatted as YYYY-MM-DD.
EndDate	Present and Format	An end date record must exist and be formatted as YYYY-MM-DD. It must also be later than the start date.
DateTimeReportGenerated	If present, Format	E-GGRT verifies that if the submission contains a 'DateTimeReportGenerated' value, that is properly formatted as YYYY-MM-DDThh:mm:ss.
Data formats	Format	All data values must be formatted as specified in the schema.
Elements with enumerated values	Content	If an element has enumerated values, e-GGRT verifies that the reported value matches one of them.

Frequently Asked Questions

- Q:** What happens if I upload multiple XML files for a facility during the reporting period? Which one counts as the ‘official’ submission?
- A:** The last submitted, signed and certified annual GHG report supersedes any prior submissions for a given reporting year.
- Q:** Will e-GGRT provide an error message that references a specific tag or data element if an upload fails the schema validation check?
- A:** No, if your XML upload fails the schema validation check, e-GGRT will display a general message. The reporter can run it against a schema validation tool to get specific error messages.
- Q:** I understand that an XML file must cover one and only one facility. Will e-GGRT support uploading XML files for multiple facilities at one time?
- A:** This feature will not be supported for the 2011 reporting year but EPA has added this suggestion to the list of possible future enhancements.

1.5 Reporting for Multiple Source Category Subparts

This section describes how to report for multiple source categories. If a particular facility or supplier includes operations falling into multiple source categories, it must report for each source category applicable to the rule. Each source category must comply with category-specific methodologies and requirements regarding calculations, monitoring and quality assurance, missing data, record keeping and reporting. For instance, a pulp and paper mill with on-site stationary combustion units must report emissions covered by the pulp and paper manufacturing category as well as the stationary fuel combustion category.

The annual GHG report must consist of a single XML file containing GHG data for each of the relevant Subparts. The construction of the report is virtually the same as one for a single Subpart except that the **SubpartInformation** section contains multiple records.

The following example contains emissions data for a single source category, Subpart D.

```
<ghg:SubPartInformation>
  <ghg:SubPartD>
    <ghg:GHGasInfoDetails>
      <ghg:GHGasName>Methane</ghg:GHGasName>
      <ghg:GHGasQuantity massUOM="Metric Tons">
        <ghg:CalculatedValue>3.45</ghg:CalculatedValue>
      </ghg:GHGasQuantity>
    </ghg:GHGasInfoDetails>
    <ghg:GHGasInfoDetails>
      <ghg:GHGasName>Carbon Dioxide</ghg:GHGasName>
      <ghg:GHGasQuantity massUOM="Metric Tons">
        <ghg:CalculatedValue>3588.2</ghg:CalculatedValue>
      </ghg:GHGasQuantity>
    </ghg:GHGasInfoDetails>
    <ghg:UnitDDetails>
      <ghg:UnitIdentification>
        <ghg:UnitName>3-Eq G-4</ghg:UnitName>
        <ghg:UnitType>Electricity Generator</ghg:UnitType>
      </ghg:UnitIdentification>
      <ghg:Part75Methodology>Appendix G, Equation G-4</ghg:Part75Methodology>
      <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
      <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
      <ghg:isAcidRainProgramIndicator>Y</ghg:isAcidRainProgramIndicator>
      <ghg:AnnualCO2EmissionsMonitoredLocationShortTons massUOM="Short Tons">
        <ghg:CalculatedValue>1000.6</ghg:CalculatedValue>
      </ghg:AnnualCO2EmissionsMonitoredLocationShortTons>
      <ghg:AnnualCO2EmissionsMonitoredLocationMetricTons massUOM="Metric Tons">
        <ghg:CalculatedValue>907.8</ghg:CalculatedValue>
      </ghg:AnnualCO2EmissionsMonitoredLocationMetricTons>
      <ghg:AnnualCO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
        <ghg:CalculatedValue>10.9</ghg:CalculatedValue>
      </ghg:AnnualCO2EmissionsAllBiomassFuelsCombined>
      <ghg:ElectricityFuelDetails>
        <ghg:FuelType>Mixed (Electric Power sector)</ghg:FuelType>
        <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
          <ghg:CalculatedValue>10.4</ghg:CalculatedValue>
        </ghg:CH4EmissionsCO2Equivalent>
      </ghg:ElectricityFuelDetails>
      <ghg:AppendixGEquationG4>
        <ghg:OperatingHoursFuelFlowRate>7</ghg:OperatingHoursFuelFlowRate>
        <ghg:OperatingHoursHHVSubstituted>8</ghg:OperatingHoursHHVSubstituted>
      </ghg:AppendixGEquationG4>
    </ghg:UnitDDetails>
  </ghg:SubPartD>
</ghg:SubPartInformation>
```

Subpart D

The following example contains emissions information for Subparts C and D. In addition, Subpart C contains data for multiple units – each unit is highlighted in a different color.

<ghg:SubPartInformation>

<ghg:SubPartC>

```

<ghg:GHGasInfoDetails>
  <ghg:GHGasName>Biogenic Carbon dioxide</ghg:GHGasName>
  <ghg:GHGasQuantity massUOM="Metric Tons">
    <ghg:CalculatedValue>9200.2</ghg:CalculatedValue>
  </ghg:GHGasQuantity>
</ghg:GHGasInfoDetails>
<ghg:GHGasInfoDetails>
  <ghg:GHGasName>Methane</ghg:GHGasName>
  <ghg:GHGasQuantity massUOM="Metric Tons">
    <ghg:CalculatedValue>4015.72</ghg:CalculatedValue>
  </ghg:GHGasQuantity>
</ghg:GHGasInfoDetails>
<ghg:GHGasInfoDetails>
  <ghg:GHGasName>Nitrous Oxide</ghg:GHGasName>
  <ghg:GHGasQuantity massUOM="Metric Tons">
    <ghg:CalculatedValue>393.585</ghg:CalculatedValue>
  </ghg:GHGasQuantity>
</ghg:GHGasInfoDetails>
<ghg:GHGasInfoDetails>
  <ghg:GHGasName>Carbon Dioxide</ghg:GHGasName>
  <ghg:GHGasQuantity massUOM="Metric Tons">
    <ghg:CalculatedValue>518460.6</ghg:CalculatedValue>
  </ghg:GHGasQuantity>
</ghg:GHGasInfoDetails>
    
```

Subpart C

<ghg:UnitsCDetails>

```

<ghg:UnitIdentification>
  <ghg:UnitName>CT 6- CEMS</ghg:UnitName>
  <ghg:UnitDescription>Part 75 unit</ghg:UnitDescription>
</ghg:UnitIdentification>
<ghg:CO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
  <ghg:CalculatedValue>1000.1</ghg:CalculatedValue>
</ghg:CO2EmissionsAllBiomassFuelsCombined>
<ghg:TierFuelDetails>
  <ghg:FuelType>Crude Oil</ghg:FuelType>
  <ghg:Part75FuelDetails>
    <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
      <ghg:CalculatedValue>100.2</ghg:CalculatedValue>
    </ghg:CH4EmissionsCO2Equivalent>
    <ghg:N2OEmissionsCO2Equivalent massUOM="Metric Tons">
      <ghg:CalculatedValue>10.4</ghg:CalculatedValue>
    </ghg:N2OEmissionsCO2Equivalent>
  </ghg:Part75FuelDetails>
</ghg:TierFuelDetails>
<ghg:Part75Details>
  <ghg:AnnualCO2EmissionsMeasuredByPart75Method massUOM="Metric Tons">
    <ghg:CalculatedValue>100000.7</ghg:CalculatedValue>
  </ghg:AnnualCO2EmissionsMeasuredByPart75Method>
  <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
  <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
  <ghg:Part75HeatInputMethod>CEMS</ghg:Part75HeatInputMethod>
  <ghg:PartCO2Method>CEMS calculation method--- § 98.33(a)(5)(iii)</ghg:PartCO2Method>
  <ghg:CEMSDetails>
    <ghg:OperatingHoursCO2ConcentrationSubstituted>1000</ghg:OperatingHoursCO2ConcentrationSubstituted>
    <ghg:OperatingHoursStackGasFlowRateSubstituted>10</ghg:OperatingHoursStackGasFlowRateSubstituted>
    <ghg:OperatingHoursStackGasMoistureContentSubstituted>1</ghg:OperatingHoursStackGasMoistureContentSubstituted>
  </ghg:CEMSDetails>
</ghg:Part75Details>
</ghg:UnitsCDetails>
    
```

1st Unit

Subpart C
(cont'd)

2nd Unit

```

<ghg:UnitsCDetails>
  <ghg:UnitIdentification>
    <ghg:UnitName>CS-CT 5- Tier 4</ghg:UnitName>
  </ghg:UnitIdentification>
  <ghg:CommonStackDetails>
    <ghg:NumberofUnits>7</ghg:NumberofUnits>
    <ghg:CombinedMaxRatedHeatInputCapacity heatUOM="mmBtu/hr">
      <ghg:MeasureValue>7000</ghg:MeasureValue>
    </ghg:CombinedMaxRatedHeatInputCapacity>
  </ghg:CommonStackDetails>
  <ghg:TierFuelDetails>
    <ghg:FuelType>Blast Furnace Gas</ghg:FuelType>
    <ghg:Tier4FuelDetails>
      <ghg:EmissionsNodeDetails>
        <ghg>TotalCH4CombustionEmissions massUOM="Metric Tons">
          <ghg:CalculatedValue>700.12</ghg:CalculatedValue>
        </ghg>TotalCH4CombustionEmissions>
        <ghg>TotalN2OCombustionEmissions massUOM="Metric Tons">
          <ghg:CalculatedValue>70.345</ghg:CalculatedValue>
        </ghg>TotalN2OCombustionEmissions>
        <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
          <ghg:CalculatedValue>14700.6</ghg:CalculatedValue>
        </ghg:CH4EmissionsCO2Equivalent>
        <ghg:N2OEmissionsCO2Equivalent massUOM="Metric Tons">
          <ghg:CalculatedValue>21700.8</ghg:CalculatedValue>
        </ghg:N2OEmissionsCO2Equivalent>
      </ghg:EmissionsNodeDetails>
    </ghg:Tier4FuelDetails>
  </ghg:TierFuelDetails>
  <ghg:Tier4Details>
    <ghg:SlipStreamIndicator>N</ghg:SlipStreamIndicator>
    <ghg:Tier4QuarterFuelDetails>
      <ghg:QuarterName>First Quarter</ghg:QuarterName>
      <ghg:CumulativeCO2MassEmissions massUOM="Metric Tons">
        <ghg:CalculatedValue>7000.5</ghg:CalculatedValue>
      </ghg:CumulativeCO2MassEmissions>
    </ghg:Tier4QuarterFuelDetails>
    <ghg:Tier4QuarterFuelDetails>
      <ghg:QuarterName>Second Quarter</ghg:QuarterName>
      <ghg:CumulativeCO2MassEmissions massUOM="Metric Tons">
        <ghg:CalculatedValue>7100.7</ghg:CalculatedValue>
      </ghg:CumulativeCO2MassEmissions>
    </ghg:Tier4QuarterFuelDetails>
    <ghg:Tier4QuarterFuelDetails>
      <ghg:QuarterName>Third Quarter</ghg:QuarterName>
      <ghg:CumulativeCO2MassEmissions massUOM="Metric Tons">
        <ghg:CalculatedValue>7200.6</ghg:CalculatedValue>
      </ghg:CumulativeCO2MassEmissions>
    </ghg:Tier4QuarterFuelDetails>
    <ghg>TotalSourceOperatingHours>7000</ghg>TotalSourceOperatingHours>
    <ghg:OperatingHoursDetails>
      <ghg:OperatingHoursCO2ConcentrationSubstituted>70</ghg:OperatingHoursCO2ConcentrationSubstituted>
      <ghg:OperatingHoursStackGasFlowRateSubstituted>7</ghg:OperatingHoursStackGasFlowRateSubstituted>
    </ghg:OperatingHoursDetails>
    <ghg:CO2EmissionsNonBiogenic massUOM="Metric Tons">
      <ghg:CalculatedValue>70000.2</ghg:CalculatedValue>
    </ghg:CO2EmissionsNonBiogenic>
    <ghg:CO2EmissionsBiogenic massUOM="Metric Tons">
      <ghg:CalculatedValue>700.4</ghg:CalculatedValue>
    </ghg:CO2EmissionsBiogenic>
    <ghg:AnnualCO2EmissionsMeasuredByCEMS massUOM="Metric Tons">
      <ghg:CalculatedValue>70000.5</ghg:CalculatedValue>
    </ghg:AnnualCO2EmissionsMeasuredByCEMS>
    <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
    <ghg:TierMethodologyEndDate>2011-09-30</ghg:TierMethodologyEndDate>
  </ghg:Tier4Details>
</ghg:UnitsCDetails>
</ghg:SubPartC>

```

Subpart D

```

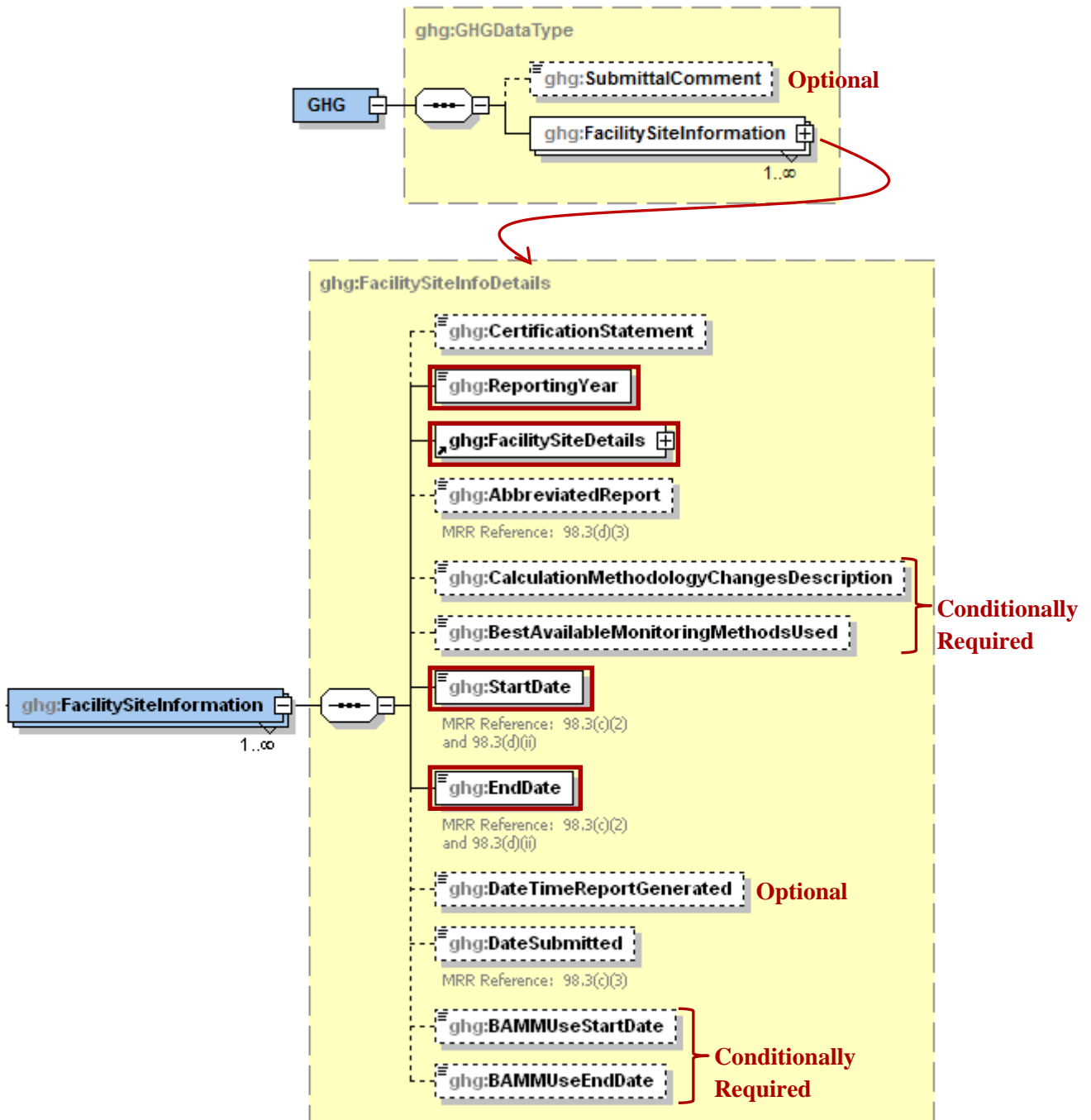
<ghg:SubPartD>
  <ghg:GHGasInfoDetails>
    <ghg:GHGasName>Methane</ghg:GHGasName>
    <ghg:GHGasQuantity massUOM="Metric Tons">
      <ghg:CalculatedValue>3.56</ghg:CalculatedValue>
    </ghg:GHGasQuantity>
  </ghg:GHGasInfoDetails>
  <ghg:GHGasInfoDetails>
    <ghg:GHGasName>Carbon Dioxide</ghg:GHGasName>
    <ghg:GHGasQuantity massUOM="Metric Tons">
      <ghg:CalculatedValue>3588.4</ghg:CalculatedValue>
    </ghg:GHGasQuantity>
  </ghg:GHGasInfoDetails>
  <ghg:UnitDetails>
    <ghg:UnitIdentification>
      <ghg:UnitName>3-Eq G-4</ghg:UnitName>
      <ghg:UnitType>Electricity Generator</ghg:UnitType>
    </ghg:UnitIdentification>
    <ghg:Part75Methodology>Appendix G, Equation G-4</ghg:Part75Methodology>
    <ghg:TierMethodologyStartDate>2011-01-01</ghg:TierMethodologyStartDate>
    <ghg:TierMethodologyEndDate>2011-12-31</ghg:TierMethodologyEndDate>
    <ghg:isAcidRainProgramIndicator>Y</ghg:isAcidRainProgramIndicator>
    <ghg:AnnualCO2EmissionsMonitoredLocationShortTons massUOM="Short Tons">
      <ghg:CalculatedValue>1000.5</ghg:CalculatedValue>
    </ghg:AnnualCO2EmissionsMonitoredLocationShortTons>
    <ghg:AnnualCO2EmissionsMonitoredLocationMetricTons massUOM="Metric Tons">
      <ghg:CalculatedValue>907.4</ghg:CalculatedValue>
    </ghg:AnnualCO2EmissionsMonitoredLocationMetricTons>
    <ghg:AnnualCO2EmissionsAllBiomassFuelsCombined massUOM="Metric Tons">
      <ghg:CalculatedValue>10.6</ghg:CalculatedValue>
    </ghg:AnnualCO2EmissionsAllBiomassFuelsCombined>
    <ghg:ElectricityFuelDetails>
      <ghg:FuelType>Mixed (Electric Power sector)</ghg:FuelType>
      <ghg:CH4EmissionsCO2Equivalent massUOM="Metric Tons">
        <ghg:CalculatedValue>10.2</ghg:CalculatedValue>
      </ghg:CH4EmissionsCO2Equivalent>
    </ghg:ElectricityFuelDetails>
    <ghg:AppendixGEquationG4>
      <ghg:OperatingHoursFuelFlowRate>7</ghg:OperatingHoursFuelFlowRate>
      <ghg:OperatingHoursHHVSubstituted>8</ghg:OperatingHoursHHVSubstituted>
    </ghg:AppendixGEquationG4>
  </ghg:UnitDetails>
</ghg:SubPartD>
</ghg:SubPartInformation>
  
```

2.0 Submittal and Facility Site Data

2.1 Details about the Submittal File

This section contains the information that must be reported about the XML submission itself. These data elements appear at the root of the GHG XML schema.

Figure 13
GHG (Root) Schema Diagram



Note: Data elements boxed in red are required. Please see page 4 of this document for more information on conditionally required elements.

Subpart A collects the following data about your annual GHG report:

- An optional comment about the submittal such as the person or company who prepared the annual GHG report.
- The year covered by the annual GHG report.
- Details about the facility site. For more information, see [Section 2.2](#), Facility Site Details.
- **Conditionally Required:** A written explanation of any calculation methodology changes during the reporting year, including an explanation of why a change in methodology was required.
- **Conditionally Required:** A brief description of each "best available monitoring method" (BAMM) used, the parameter measured using this method, and the time period during which the best available monitoring method was used.
- The start date and end date of the GHG report.
- **Optional:** The date and time when your report was generated.

Table 7
GHG (Root) Data Element Definitions

Data Element Name	Description or Value to Report
GHG	Parent Element
SubmittalComment	An optional comment about the annual GHG report.
FacilitySiteInformation	Parent Element: A collection of data elements containing information about your annual GHG report submission. Please note that your XML submission can only contain GHG data for a single facility or supplier.
ReportingYear	2011
FacilitySiteDetails	Parent Element: see Table 8 , Facility Site Details.
CalculationMethodologyChangesDescription	Conditionally Required: Specify an explanation of all GHG calculation methodology changes made during the reporting year [98.3(c)(6)].
BestAvailableMonitoringMethodsUsed	Conditionally Required: Specify the best available monitoring methods (BAMM) used during the reporting year for which a parameter (e.g., fuel use, daily carbon content of feedstock by process line) could not be reasonably measured according to the QA/QC requirements of a relevant subpart. [98.3(c)(7)].
StartDate	The start date (YYYY-MM-DD) of the GHG report. The start of the timeframe covered by the report. [98.3(c)(2)].

Data Element Name	Description or Value to Report
EndDate	The end date (YYYY-MM-DD) of the GHG report. The end of the timeframe covered by the report. [98.3(c)(2)].
DateTimeReportGenerated	Optional: The date and time (YYYY-MM-DDThh:mm:ss) when your report was generated. Example: 2012-02-20T12:58:40
BAMMUseStartDate	Conditionally Required: The start date for when the best available monitoring method was used.
BAMMUseEndDate	Conditionally Required: The end date for when the best available monitoring method was used.

XML Excerpt 2

Example for the GHG Schema Root Elements

```

<ghg:GHG>
  <ghg:SubmittalComment> Report for Zippy Oil - prepared by Jim Doe of ABC Inc.</ghg:SubmittalComment>
  <ghg:FacilitySiteInformation>
    <ghg:ReportingYear>2011</ghg:ReportingYear>
    <ghg:FacilitySiteDetails>
      ... (see section "Facility Site Details")
    </ghg:FacilitySiteDetails>
    <ghg:CalculationMethodologyChangesDescription>Started using CEMS on 6/2/2011.</ghg:Calculation
MethodologyChangesDescription>
    <ghg:BestAvailableMonitoringMethodsUsed>Gas well venting during well
completion.</ghg:BestAvailable MonitoringMethodsUsed>
    <ghg:StartDate>2011-01-01</ghg:StartDate>
    <ghg:EndDate>2011-12-31</ghg:EndDate>
    <ghg:DateTimeReportGenerated>2012-02-20T12:58:40</ghg:DateTimeReportGenerated>
    <ghg:BAMMUseStartDate>2011-01-01</ghg:BAMMUseStartDate>
    <ghg:BAMMUseEndDate>2011-12-31</ghg:BAMMUseEndDate>
  </ghg:FacilitySiteInformation>
</ghg:GHG>

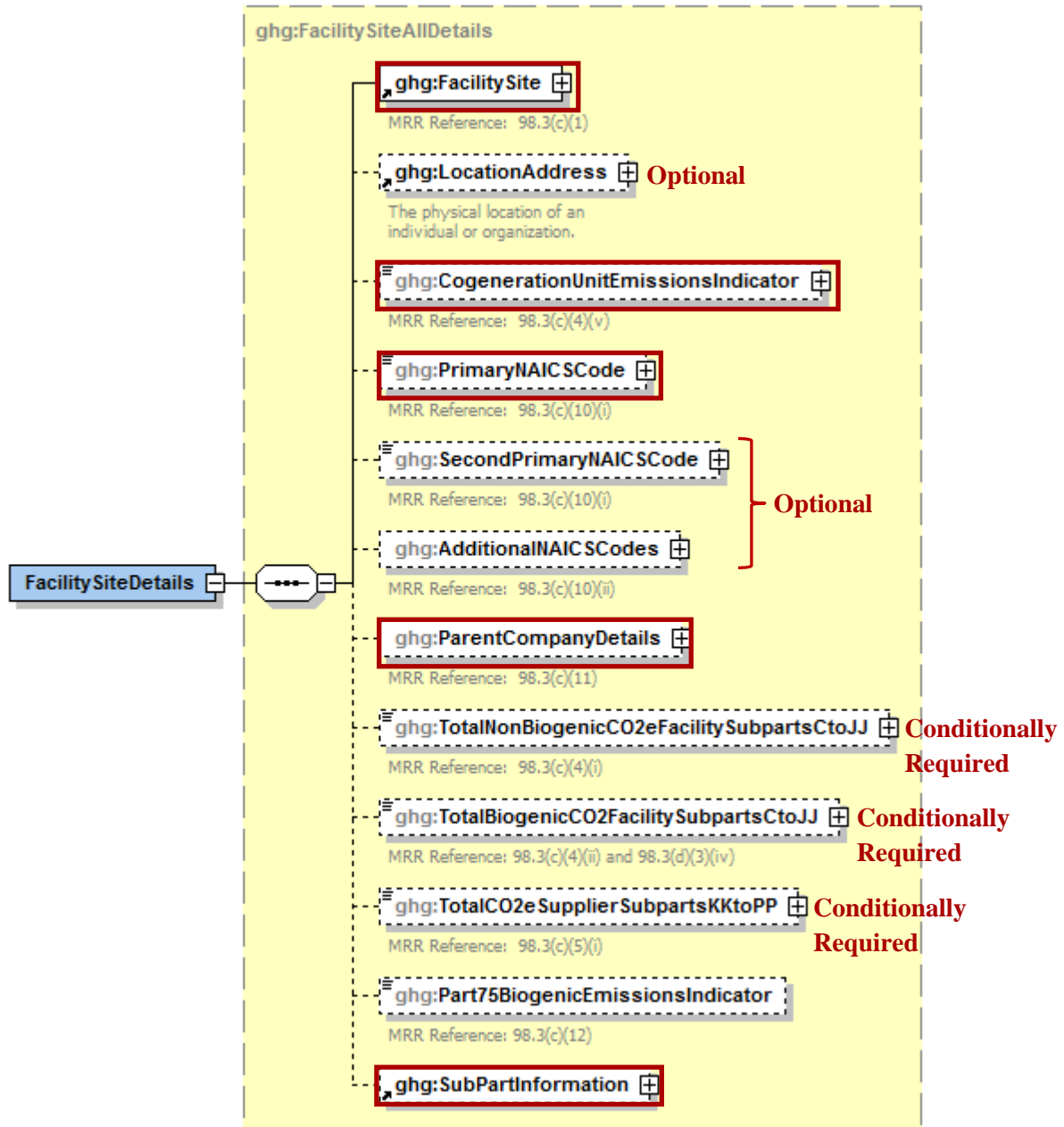
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting general information about the annual GHG report.

2.2 Facility Site Details

This section contains the summary information that must be reported regarding the details about your facility.

Figure 14
Facility Site Details Schema Diagram



Note: Data elements boxed in red are required. Please see page 4 of this document for more information on conditionally required elements.

You should report the following data:

- The unique identifier issued by EPA for your facility (or supplier) and the facility or supplier name. For more information, see [Section 2.3](#), Facility Site Identification.
- **Optional:** The facility or supplier's street address including the city, state and postal code. This information is not required but should be reported for confirmation purposes. Please note that changes to the street address must be manually entered into e-GGRT on the Facility Management page, not via XML. For more information, see [Section 2.4](#), Location Address Information.
- An indication (Y or N) that the reported emissions include emissions from a cogeneration unit. You would indicate NA (not applicable) if you are a supplier.
- The facility or supplier's primary North American Industry Classification System (NAICS) code representing the product/activity that is the principal source of revenue.
 - **Optional:** A second primary NAICS code if the entity has two distinct product/activities/services providing comparable revenue.
 - **Optional:** All other unique six-digit NAICS codes that describe the products/activities/services of the entity, but are not related to the principal source of revenue, if applicable.

Note: If you do not know the six-digit NAICS code, use the search feature at <http://www.census.gov/eos/www/naics/> to find the appropriate code. Please be sure to use the 2007 NAICS Search feature.

- The name and physical street address of every U.S. parent company and their respective percentages of ownership. For more information, see [Section 2.5](#), Parent Company Details.
- Total GHG emissions for the facility or quantities for the supplier.
 - **Conditionally Required:** For facilities only, report the total non-biogenic CO₂e (in metric tons) and the biogenic CO₂ (in metric tons).
 - **Conditionally Required:** For suppliers only, report the total quantities of CO₂e (in metric tons).
- **Note:** The "Part75BiogenicEmissionsIndicator" data element should not be included in your XML file upload if you are submitting an annual report for RY2011. The option to separately calculate biogenic CO₂ emissions from Part 75 units [i.e., units that are subject to Subpart D and/or units that use the methods in 40 CFR 75 to quantify mass emissions in accordance with 98.33(a)(5)] was only permitted for RY2010.
- Subpart information. For more information, refer to the applicable reporting instructions document.

Table 8
Facility Site Details Data Element Definitions

Data Element Name	Description
FacilitySiteDetails	Parent Element
FacilitySite	Parent Element: See Table 9 , Facility Site Identification.
LocationAddress	Parent Element: See Table 10 , Location Address Information.
CogenerationUnitEmissionsIndicator	Do reported emissions include emissions from a cogeneration unit? [98.3(c)(4)(v)] Below is a list of allowable values: Y N NA
PrimaryNAICSCode	The primary North American Industry Classification System (NAICS) code representing the product/activity/service that is the principal source of revenue for the entity as defined in “North American Industry Classification System Manual 2007” [98.3(c)(10)(i)].
SecondPrimaryNAICSCode	Optional: A second primary North American Industry Classification System (NAICS) code for the reporting year if the facility has two distinct products/activities/services providing comparable revenue [free text, validated against selection list of 2007 NAICS codes] [98.3(c)(10)(i)].
AdditionalNAICSCodes	Parent Element (Optional): A collection of data elements containing all additional NAICS codes, if applicable.
AdditionalNAICSCode	All additional unique NAICS codes that describe the reporter’s products/activities/services but that are not related to the principal source of revenue [98.3(c)(10)(ii)]. Repeat this data element for each additional NAICS code.
ParentCompanyDetails	Parent Element: See Table 11 , Parent Company Details.
TotalNonBiogenicCO2eFacilitySubpartsCtoJJ	Conditionally Required: For facilities only, report annual emissions (excluding biogenic CO ₂) aggregated for all GHG from all applicable facility source categories, expressed in metric tons of CO ₂ e calculated using Equation A-1 of this Subpart. Set the units of measure to “Metric Tons” in the attribute massUOM . [98.3(c)(4)(i)]. (Also see Table 13 , Facility Site Total Emissions.)

Data Element Name	Description
TotalBiogenicCO2FacilitySubpartsCtoJJ	Conditionally Required: For facilities only, report annual emissions of biogenic CO ₂ aggregated for all applicable facility source categories, expressed in metric tons. Set the units of measure to “Metric Tons” in the attribute massUOM . [98.3(c)(4)(ii)]. (Also see Table 13 , Facility Site Total Emissions.)
TotalCO2eSupplierSubpartsKKtoPP	Conditionally Required: For suppliers only, report annual GHG from all applicable supplier source categories, expressed in metric tons of CO ₂ e calculated using Equation A-1 of this Subpart. Set the units of measure to “Metric Tons” in the attribute massUOM . [98.3(c)(5)(i)]. (Also see Table 13 , Facility Site Total Emissions.)
SubPartInformation	Parent Element: Refer to the individual reporting instructions document related to applicable Subpart(s).

XML Excerpt 3 Example for Facility Site Details

```

<ghg:FacilitySiteDetails>
  <ghg:FacilitySite>
    <ghg:FacilitySiteIdentifier>522948</ghg:FacilitySiteIdentifier>
    <ghg:FacilitySiteName>Gemco Industries</ghg:FacilitySiteName>
  </ghg:FacilitySite>
  <ghg:LocationAddress>

    ... (See section "Location Address" of this document for more information.)

  </ghg:LocationAddress>
  <ghg:CogenerationUnitEmissionsIndicator>N</ghg:CogenerationUnitEmissionsIndicator>
  <ghg:PrimaryNAICSCode>111110</ghg:PrimaryNAICSCode>
  <ghg:SecondPrimaryNAICSCode>111130</ghg:SecondPrimaryNAICSCode>
  <ghg:AdditionalNAICSCode>
    <ghg:AdditionalNAICSCode>111411</ghg:AdditionalNAICSCode>
    <ghg:AdditionalNAICSCode>111920</ghg:AdditionalNAICSCode>
  </ghg:AdditionalNAICSCode>
  <ghg:ParentCompanyDetails>

    ... (See section "Parent Company Details" of this document for more information.)

  </ghg:ParentCompanyDetails >
  <ghg>TotalNonBiogenicCO2eFacilitySubpartsCtoJJ massUOM='MetricTons'>511099.2</ghg>TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>
  <ghg>TotalBiogenicCO2FacilitySubpartsCtoJJ massUOM='MetricTons'>6479.1</ghg>TotalBiogenicCO2FacilitySubpartsCtoJJ>
  <ghg:SubPartInformation>

    ... (See individual reporting instructions document associated with the applicable Subpart(s).)

  </ghg:SubPartInformation>
</ghg:FacilitySiteDetails>

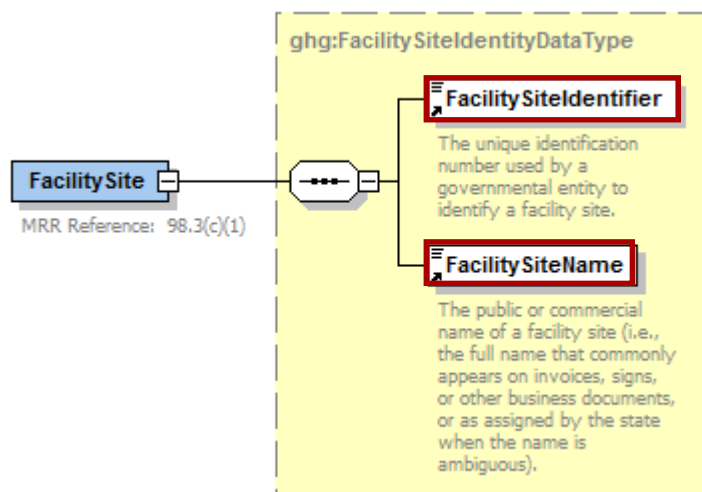
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting details about the facility site.

2.3 Facility Site Identification

This section contains the information that must be reported about the identity of your facility. Some of the data elements should not be reported for the 2011 data collection year.

Figure 15
Facility Site (Identification) Schema Diagram



Note: Data elements boxed in red are required.

Table 9
Facility Site (Identification) Data Element Definitions

Data Element Name	Description
FacilitySite	Parent Element
FacilitySiteIdentifier	The GHGRP ID identifier issued by EPA that uniquely describes the facility site or supplier.
FacilitySiteName	The facility site name or supplier name (as appropriate). It should match the name that is registered with e-GGRT.

XML Excerpt 4
Example for Facility Site (Identification)

```
<ghg:FacilitySite>
  <ghg:FacilitySiteIdentifier>524748</ghg:FacilitySiteIdentifier>
  <ghg:FacilitySiteName>Atlas Industries, Inc.</ghg:FacilitySiteName>
</ghg:FacilitySite>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting the facility identifier and name.

2.4 Location Address Information

This section contains the information that may be reported about the location of the facility or supplier. Please note that the location address information reported in your XML is for confirmation purposes only. The official address is stored in e-GGRT and all modifications to this information must be made in e-GGRT.

Figure 16
Location Address Schema Diagram

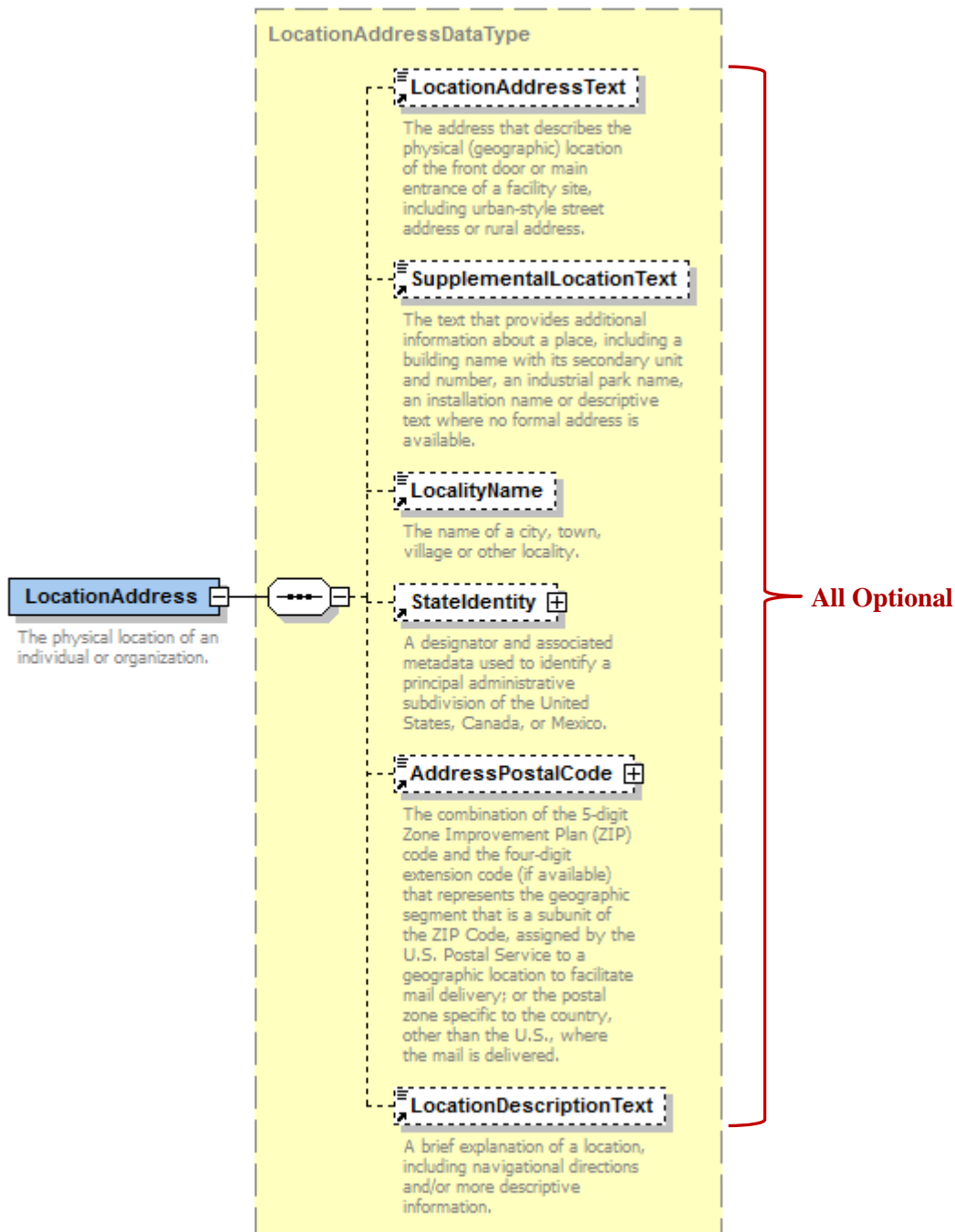


Table 10
Location Address Data Element Definitions

Data Element Name	Description																																																																														
LocationAddress	Parent Element (Optional)																																																																														
LocationAddressText	The address that describes the physical (geographic) location of the front door or main entrance of a facility site, including urban-style street address or rural address.																																																																														
SupplementalLocationText	Additional information about the place, including a building name with its secondary unit and number, an industrial park name and installation name or descriptive text where no formal address is available.																																																																														
LocalityName	The name of the city, town, village or other locality in which the facility is located.																																																																														
StateIdentity	The name of the U.S. state or territory in which the facility or supplier is located. Please report one of the following values. <table border="0"> <tr> <td>AB</td> <td>FL</td> <td>MB</td> <td>ND</td> <td>OH</td> <td>SK</td> </tr> <tr> <td>AK</td> <td>GA</td> <td>MD</td> <td>NE</td> <td>OK</td> <td>TN</td> </tr> <tr> <td>AL</td> <td>GU</td> <td>ME</td> <td>NF</td> <td>ON</td> <td>TX</td> </tr> <tr> <td>AR</td> <td>HI</td> <td>MH</td> <td>NH</td> <td>OR</td> <td>UT</td> </tr> <tr> <td>AS</td> <td>IA</td> <td>MI</td> <td>NJ</td> <td>PA</td> <td>VA</td> </tr> <tr> <td>AZ</td> <td>ID</td> <td>MN</td> <td>NM</td> <td>PE</td> <td>VI</td> </tr> <tr> <td>BC</td> <td>IL</td> <td>MO</td> <td>NN</td> <td>PR</td> <td>VT</td> </tr> <tr> <td>CA</td> <td>IN</td> <td>MP</td> <td>NS</td> <td>PW</td> <td>WA</td> </tr> <tr> <td>CO</td> <td>KS</td> <td>MS</td> <td>NT</td> <td>QC</td> <td>WI</td> </tr> <tr> <td>CT</td> <td>KY</td> <td>MT</td> <td>NU</td> <td>RI</td> <td>WV</td> </tr> <tr> <td>DC</td> <td>LA</td> <td>NB</td> <td>NV</td> <td>SC</td> <td>WY</td> </tr> <tr> <td>DE</td> <td>MA</td> <td>NC</td> <td>NY</td> <td>SD</td> <td>YT</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>XX</td> </tr> </table>	AB	FL	MB	ND	OH	SK	AK	GA	MD	NE	OK	TN	AL	GU	ME	NF	ON	TX	AR	HI	MH	NH	OR	UT	AS	IA	MI	NJ	PA	VA	AZ	ID	MN	NM	PE	VI	BC	IL	MO	NN	PR	VT	CA	IN	MP	NS	PW	WA	CO	KS	MS	NT	QC	WI	CT	KY	MT	NU	RI	WV	DC	LA	NB	NV	SC	WY	DE	MA	NC	NY	SD	YT						XX
AB	FL	MB	ND	OH	SK																																																																										
AK	GA	MD	NE	OK	TN																																																																										
AL	GU	ME	NF	ON	TX																																																																										
AR	HI	MH	NH	OR	UT																																																																										
AS	IA	MI	NJ	PA	VA																																																																										
AZ	ID	MN	NM	PE	VI																																																																										
BC	IL	MO	NN	PR	VT																																																																										
CA	IN	MP	NS	PW	WA																																																																										
CO	KS	MS	NT	QC	WI																																																																										
CT	KY	MT	NU	RI	WV																																																																										
DC	LA	NB	NV	SC	WY																																																																										
DE	MA	NC	NY	SD	YT																																																																										
					XX																																																																										
AddressPostalCode	The ZIP or postal code of the facility's physical street address.																																																																														
LocationDescriptionText	A brief explanation of the location, including navigational directions and/or more descriptive information.																																																																														

XML Excerpt 5
Example for Location Address

```

<ghg:LocationAddress>
  <ghg:LocationAddressText>899 North Rancho Highway</ghg:LocationAddressText>
  <ghg:SupplementalLocationText>Plant # 2</ghg:SupplementalLocationText >
  <ghg:LocalityName>Houston</ghg:LocalityName>
  <ghg:StateIdentity>
    <ghg:StateCode>TX</ghg:StateCode>
  </ghg:StateIdentity>
  <ghg:AddressPostalCode>77004</ghg:AddressPostalCode>
  <ghg:LocationDescriptionText>The facility is located at the corner of Main and Wabash streets.</ghg: LocationDescriptionText>
</ghg:LocationAddress>

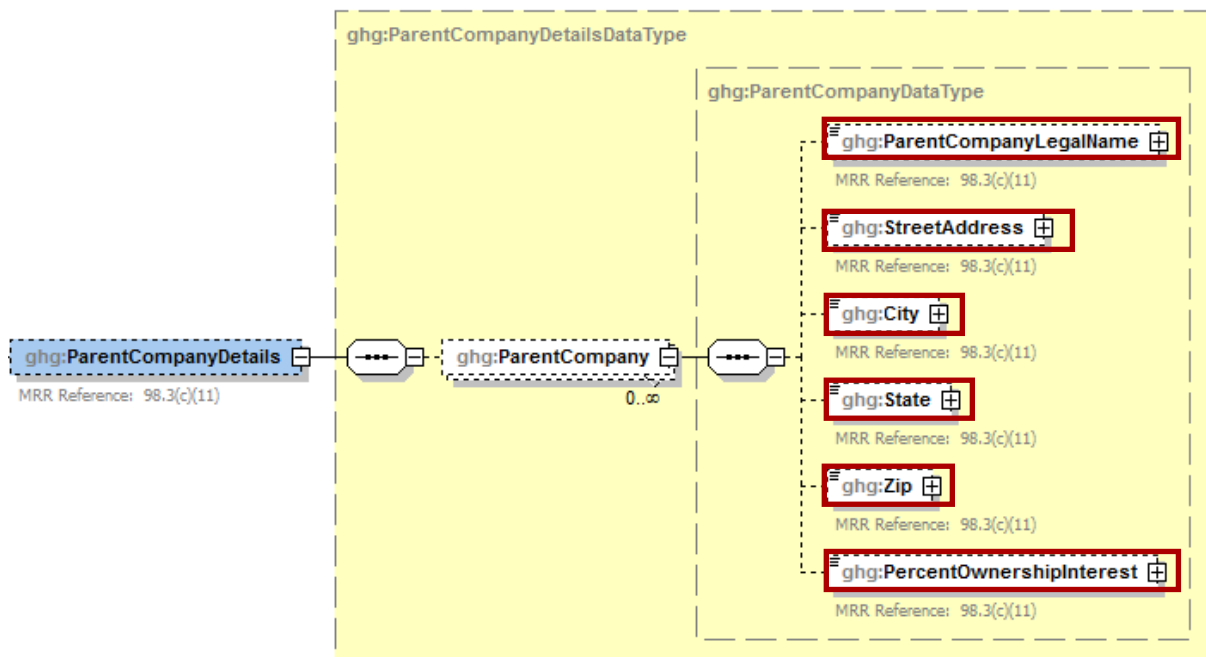
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting the facility or street address.

2.5 Parent Company Details

This section contains the information that must be reported regarding corporate parent companies. Every facility or supplier that is subject to the GHGRP must report the legal names and physical street addresses of all of their U.S. parent companies and their respective percentages of ownership. A U.S. parent company is defined as the highest-level U.S. company with an ownership interest in the reporting entity as of December 31 of the year for which data are being reported.

Figure 17
Parent Company Schema Diagram



Note: Data elements boxed in red are required.

Table 11
Parent Company Details Data Element Definitions

Data Element Name	Description
ParentCompanyDetails	Parent Element
ParentCompany	Parent Element: A collection of data elements describing a single parent company. Repeat this set of data elements for each U.S. parent company.
ParentCompanyLegalName	Legal name of the U.S. parent company. (Also see the new parent company name reporting guidelines listed in the table, “Summary of Changes”.)
StreetAddress	Physical street address of the U.S. parent company (report the main corporate office location).

Data Element Name	Description																																																																														
City	City in which the U.S. parent company resides.																																																																														
State	State or territory in which the U.S. parent company resides. Below is a list of allowable values. <table border="0" data-bbox="678 421 1305 779"> <tr><td>AB</td><td>FL</td><td>MB</td><td>ND</td><td>OH</td><td>SK</td></tr> <tr><td>AK</td><td>GA</td><td>MD</td><td>NE</td><td>OK</td><td>TN</td></tr> <tr><td>AL</td><td>GU</td><td>ME</td><td>NF</td><td>ON</td><td>TX</td></tr> <tr><td>AR</td><td>HI</td><td>MH</td><td>NH</td><td>OR</td><td>UT</td></tr> <tr><td>AS</td><td>IA</td><td>MI</td><td>NJ</td><td>PA</td><td>VA</td></tr> <tr><td>AZ</td><td>ID</td><td>MN</td><td>NM</td><td>PE</td><td>VI</td></tr> <tr><td>BC</td><td>IL</td><td>MO</td><td>NN</td><td>PR</td><td>VT</td></tr> <tr><td>CA</td><td>IN</td><td>MP</td><td>NS</td><td>PW</td><td>WA</td></tr> <tr><td>CO</td><td>KS</td><td>MS</td><td>NT</td><td>QC</td><td>WI</td></tr> <tr><td>CT</td><td>KY</td><td>MT</td><td>NU</td><td>RI</td><td>WV</td></tr> <tr><td>DC</td><td>LA</td><td>NB</td><td>NV</td><td>SC</td><td>WY</td></tr> <tr><td>DE</td><td>MA</td><td>NC</td><td>NY</td><td>SD</td><td>YT</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>XX</td></tr> </table>	AB	FL	MB	ND	OH	SK	AK	GA	MD	NE	OK	TN	AL	GU	ME	NF	ON	TX	AR	HI	MH	NH	OR	UT	AS	IA	MI	NJ	PA	VA	AZ	ID	MN	NM	PE	VI	BC	IL	MO	NN	PR	VT	CA	IN	MP	NS	PW	WA	CO	KS	MS	NT	QC	WI	CT	KY	MT	NU	RI	WV	DC	LA	NB	NV	SC	WY	DE	MA	NC	NY	SD	YT						XX
AB	FL	MB	ND	OH	SK																																																																										
AK	GA	MD	NE	OK	TN																																																																										
AL	GU	ME	NF	ON	TX																																																																										
AR	HI	MH	NH	OR	UT																																																																										
AS	IA	MI	NJ	PA	VA																																																																										
AZ	ID	MN	NM	PE	VI																																																																										
BC	IL	MO	NN	PR	VT																																																																										
CA	IN	MP	NS	PW	WA																																																																										
CO	KS	MS	NT	QC	WI																																																																										
CT	KY	MT	NU	RI	WV																																																																										
DC	LA	NB	NV	SC	WY																																																																										
DE	MA	NC	NY	SD	YT																																																																										
					XX																																																																										
Zip	ZIP code for the U.S. parent company.																																																																														
PercentOwnershipInterest	Percentage of ownership interest for the listed parent company. The value must be between 0.1 and 100.0.																																																																														

XML Excerpt 6 Example for Parent Company Details

```

<ghg:ParentCompanyDetails>
  <ghg:ParentCompany>
    <ghg:ParentCompanyLegalName>CO A</ghg:ParentCompanyLegalName>
    <ghg:StreetAddress>301 S Maryland Avenue</ghg:StreetAddress>
    <ghg:City>Wilmington</ghg:City>
    <ghg:State>DE</ghg:State>
    <ghg:Zip>19803</ghg:Zip>
    <ghg:PercentOwnershipIntrest>40</ghg:PercentOwnershipIntrest>
  </ghg:ParentCompany>
  <ghg:ParentCompany>
    <ghg:ParentCompanyLegalName> CO B</ghg:ParentCompanyLegalName>
    <ghg:StreetAddress>9233 Durango Point</ghg:StreetAddress>
    <ghg:City>Houston</ghg:City>
    <ghg:State>TX</ghg:State>
    <ghg:Zip>77070</ghg:Zip>
    <ghg:PercentOwnershipIntrest>35</ghg:PercentOwnershipIntrest>
  </ghg:ParentCompany>
  <ghg:ParentCompany>
    <ghg:ParentCompanyLegalName> CO C</ghg:ParentCompanyLegalName>
    <ghg:StreetAddress>839 E Olive Street</ghg:StreetAddress>
    <ghg:City>Seattle</ghg:City>
    <ghg:State>WA</ghg:State>
    <ghg:Zip>98122</ghg:Zip>
    <ghg:PercentOwnershipIntrest>25</ghg:PercentOwnershipIntrest>
  </ghg:ParentCompany>
</ghg:ParentCompanyDetails>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting parent company data. In the example above, there are three U.S. parent companies – the combined sum of their percentage of ownership must total 100%. Extra lines were added for demonstration purposes only.

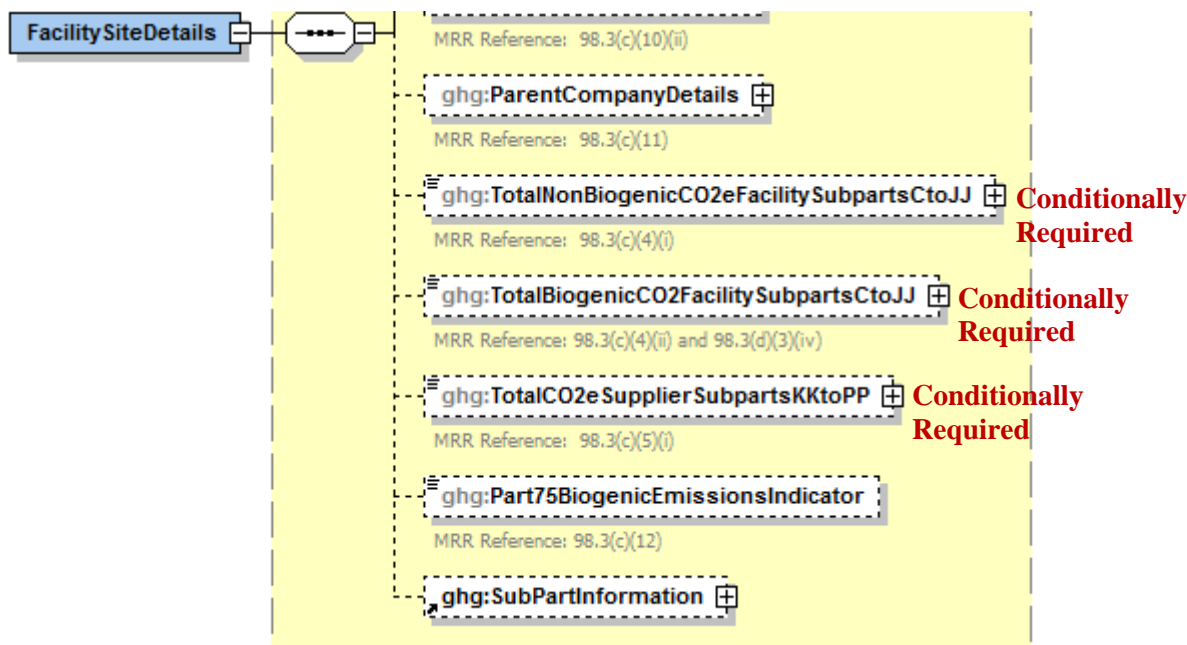
Table 12
Examples for Reporting Parent Company Information

Reporting scenario	How to report U.S. parent company
The reporting entity is entirely owned by a single U.S. company that is not owned by any other company (e.g., it is not a subsidiary or division of another company).	Provide that company's legal name and physical address as the U.S. parent company and report 100 percent ownership.
The reporting entity is entirely owned by a single U.S. company which is, itself, owned by another company (e.g., it is a division or subsidiary of a higher-level company).	Provide the legal name and physical address of the highest-level company in the ownership hierarchy as the U.S. parent company and report 100 percent ownership.
The reporting entity is owned by more than one U.S. company (e.g., company A owns 40 percent, company B owns 35 percent and company C owns 25 percent). Note: The XML excerpt depicted above was based on this scenario.	Provide the legal names and physical addresses of all of the highest level companies with an ownership interest as U.S. parent companies and report the percent ownership of each company.
The reporting entity is entirely owned by a foreign company.	Provide the legal name and physical address of the foreign company's highest-level company based in the U.S. as the U.S. parent company and report 100 percent ownership.
The reporting entity is partially owned by a foreign company and partially owned by one or more U.S. companies.	Provide the legal name and physical address of the foreign entity's highest-level company based in the U.S., along with the legal names and physical addresses of the other U.S. parent companies, and report the percent ownership of each company.
The reporting entity is owned by a joint venture or cooperative.	The joint venture or cooperative is its own U.S. parent company. Provide the joint venture or cooperative's legal name and physical address as the U.S. parent company and report 100 percent ownership.
The reporting entity is a federally owned facility.	Report U.S. Government as the parent company's name, and do not report physical address or percent ownership.

2.6 Facility Site Total Emissions

This section contains instructions for reporting the facility or supplier's total CO₂ emissions (or quantities).

Figure 18
Facility-Level Roll-up Emissions Schema Diagram



Note: Data elements boxed in red are required. Please see page 4 of this document for more information on conditionally required elements.

Conditionally Required: Each reporting facility must report the following:

- **Total non-biogenic CO₂e emissions for facility sources.**
These are the fossil fuel related CO₂ emissions aggregated across all facility source category Subparts associated with the reporting entity.
- **Total biogenic CO₂ emissions for facility sources.**
These are the biogenic CO₂ emissions aggregated across all facility source category Subparts associated with the reporting entity.

Conditionally Required: Each reporting supplier must report the following:

- **Total CO₂e quantity for supplier sources.**
These are the sum total of CO₂e quantities aggregated across all supplier source categories associated with the reporting entity. **Note:** Do not include Subpart LL and MM totals in this data element; these values are not being collected in e-GGRT.

The calculations for CO₂e must be performed by applying the Global Warming Potential (GWP) factors as presented in Table A-1 of the Mandatory Greenhouse Reporting Rule and in conformance with Equation A-1 of the final rule.

For each source category Subpart applicable to the reporting entity, calculate the total metric tons of each greenhouse gas (GHG) aggregated across all units, products or other reporting divisions within the facility or supplier.

- 1) For facility source category Subparts, the list of individual GHGs that must be totaled for each Subpart is limited to:
 - a. Biogenic CO₂
 - b. CO₂ (excluding biogenic CO₂)
 - c. CH₄
 - d. N₂O
 - e. perfluoromethane (CF₄)
 - f. perfluoroethane (C₂F₆)
 - g. HFC-23

- 2) For supplier source category Subparts, the list of individual GHGs that must be totaled for each Subpart is limited to:
 - a. CO₂
 - b. CH₄
 - c. N₂O
 - d. Each fluorinated GHG identified under Subpart OO (including those not listed in Table A–1 of this Subpart).

Note: You must follow the rounding rules found in [Table 1](#).

**Table 13
Facility Site Total Emissions (Rollup) Data Element Definitions**

Data Element Name	Description
TotalNonBiogenicCO2eFacilitySubpartsCtoJJ	Conditionally Required: For facilities only, report the total CO ₂ e emissions (excluding biogenic CO ₂) aggregated across all facility source category Subparts associated with the reporting entity. Set the units of measure to “Metric Tons” in the attribute massUOM .
TotalBiogenicCO2FacilitySubpartsCtoJJ	Conditionally Required: For facilities only, report the total biogenic CO ₂ e emissions aggregated across all facility source category Subparts associated with the reporting entity. Set the units of measure to “Metric Tons” in the attribute massUOM .
TotalCO2eSupplierSubpartsKKtoPP	Conditionally Required: For suppliers only, report the total CO ₂ e quantity aggregated across all supplier categories Subparts associated with the reporting entity. Set the units of measure to “Metric Tons” in the attribute massUOM .

XML Excerpt 7 Example for Facility Site Total Emissions (Rollup)

```
<ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ massUOM="Metric Tons">23457.8</ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>  
<ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ massUOM="Metric Tons">77765.4</ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data for a facility.

XML Excerpt 8 Example for Supplier Site Total Emissions (Rollup)

```
<ghg:TotalCO2eSupplierSubpartsKKtoPP massUOM="Metric Tons">872563.2</ghg:TotalCO2eSupplierSubpartsKKtoPP>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data for a supplier.

IV. Appendix A – Sample XML Document

Sample XML Document for Subpart A

(Note: Data values do not reflect an actual facility's emissions.)

```
<?xml version="1.0" encoding="UTF-8"?>
<ghg:GHG xsi:schemaLocation="http://www.exchangenetwork.net/schema/ghg/1">
  <ghg:FacilitySiteInformation>
    <ghg:ReportingYear>2011</ghg:ReportingYear>
    <ghg:FacilitySiteDetails>
      <ghg:FacilitySite>
        <ghg:FacilitySiteIdentifier>509316</ghg:FacilitySiteIdentifier>
        <ghg:FacilitySiteName>Acme Farming Supplies Inc.</ghg:FacilitySiteName>
      </ghg:FacilitySite>
      <ghg:LocationAddress/>
      <ghg:CogenerationUnitEmissionsIndicator>N</ghg:CogenerationUnitEmissionsIndicator>
      <ghg:PrimaryNAICSCode>111110</ghg:PrimaryNAICSCode>
      <ghg:SecondPrimaryNAICSCode>115112</ghg:SecondPrimaryNAICSCode>
      <ghg:AdditionalNAICSCodes>
        <ghg:AdditionalNAICSCode>115115</ghg:AdditionalNAICSCode>
      </ghg:AdditionalNAICSCodes>
      <ghg:ParentCompanyDetails>
        <ghg:ParentCompany>
          <ghg:ParentCompanyLegalName>Soybean Growers of America</ghg:ParentCompanyLegalName>
          <ghg:StreetAddress>89 N. Michigan Avenue</ghg:StreetAddress>
          <ghg:City>Chicago</ghg:City>
          <ghg:State>IL</ghg:State>
          <ghg:Zip>60601</ghg:Zip>
          <ghg:PercentOwnershipIntrest>25</ghg:PercentOwnershipIntrest>
        </ghg:ParentCompany>
        <ghg:ParentCompany>
          <ghg:ParentCompanyLegalName>USA Farming, Inc.</ghg:ParentCompanyLegalName>
          <ghg:StreetAddress>1208 Marble Creek Parkway, Suite 200</ghg:StreetAddress>
          <ghg:City>Washington</ghg:City>
          <ghg:State>IA</ghg:State>
          <ghg:Zip>52353</ghg:Zip>
          <ghg:PercentOwnershipIntrest>75</ghg:PercentOwnershipIntrest>
        </ghg:ParentCompany>
      </ghg:ParentCompanyDetails>
      <ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>42431.2</ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>
      <ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ>38434.1</ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ>
      <ghg:SubPartInformation>
        <ghg:SubPartC/>
      </ghg:SubPartInformation>
    </ghg:FacilitySiteDetails>
    <ghg:CalculationMethodologyChangesDescription>Started using CEMS on 6/2/2011.</ghg:Calculation
MethodologyChangesDescription>
    <ghg:BestAvailableMonitoringMethodsUsed>Gas well venting during well completion.</ghg:BestAvailable
MonitoringMethodsUsed>
    <ghg:StartDate>2011-01-01</ghg:StartDate>
    <ghg:EndDate>2011-12-31</ghg:EndDate>
    <ghg:BAMMUseStartDate>2011-01-01</ghg:BAMMUseStartDate>
    <ghg:BAMMUseEndDate>2011-12-31</ghg:BAMMUseEndDate>
  </ghg:FacilitySiteInformation>
</ghg:GHG>
```

← See XML reporting instructions for your specific Subpart(s).

V. Appendix B – Additional Resources

- [e-GGRT Rollup Specifications](#)
- [Electronic Code of Federal Regulations \(e-CFR\) for Part 98](#)
- [Known Issues for e-GGRT XML Reporting](#)
- EPA published a final rule that delineates which data submitted in e-GGRT will be treated as CBI and which data can be released to the public (76 FR 30782). This final rule made CBI determinations for the source categories required to report by April 2, 2012. EPA will handle data submitted in e-GGRT based on these determinations. Reporters cannot make additional claims in their XML file. More information on CBI is available at <http://www.epa.gov/climatechange/emissions/CBI.html>.