

## Hydrogen Producer Reporting Guidance for California's Mandatory GHG Reporting Program

### Introduction

This document provides guidance to California hydrogen producers for the reporting required by the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (title 17, California Code of Regulations, section 95100 *et seq.*) (MRR), including information on changes to MRR for hydrogen producers and instructions on submitting production and emissions data in Subpart P of the California Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT). This guidance applies to 2017 data reported in 2018, and subsequent years, for both merchant hydrogen plants and refineries that produce hydrogen.

For additional information about product data reporting, including the requirement to exclude inaccurate product data, the use of financial transaction meters, how product data are evaluated during verification for accuracy and conformance with the regulation, and other topics, please refer to the [Covered Product Data General Reporting and Verification Guidance](#) document.

This guidance document describes the requirements of MRR. Unlike MRR, this guidance does not have the force of law, does not establish new mandatory requirements for greenhouse gas (GHG) reporting, and in no way supplants, replaces, or amends any of the legal requirements of the Regulation. Conversely, an omission or truncation of regulatory requirements in this guidance does not relieve operators of their legal obligation to fully comply with all requirements of MRR.

The current document contains revisions to clarify the following changes resulting from MRR amendments that go into effect for 2018 data reported in 2019:

- Operators must report hydrogen sold or transferred to individual petroleum refineries and hydrogen vehicle fueling stations (section 1.5); and
- Operators must report the annual quantity of gaseous hydrogen sold or transferred and annual quantity of liquid hydrogen sold or transferred to individual facilities (section 2.5).

## 1 Product Data Reporting

This section provides details for reporting product data and other facility-level data in the “Other Facility Reporting Information” section of Subpart P of Cal e-GGRT (depicted in Figure 1).

**Figure 1. Subpart P, “Other Facility Reporting Information” (top half)**

[Subpart Overview](#) » [Other Facility Reporting Info](#)

**SUBPART P OTHER INFORMATION**  
Please complete the required information included below.

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Is the hydrogen plant part of an integrated refinery operation?  Yes  No

Annual mass of on-purpose hydrogen gas produced (covered product data)\*  (metric tons)  
 \* On-purpose hydrogen means the total amount of molecular hydrogen (H<sub>2</sub>) contained in the product stream coming from a process or processes dedicated to producing hydrogen (e.g., steam methane reforming).

Annual mass of by-product hydrogen gas produced  (metric tons)

Annual mass of liquid hydrogen sold (covered product data)  (metric tons)

**Hydrogen Sold or Otherwise Transferred to Petroleum Refineries and Hydrogen Vehicle Fueling Stations [95114(j)]**

Purchaser or Receiver of Hydrogen	ARB ID (if available)	Annual Quantity of Total Gaseous and Liquid Hydrogen Sold or Transferred (MT)	Annual Quantity of Gaseous Hydrogen Sold or Transferred (MT)	Annual Quantity of Liquid Hydrogen Sold or Transferred (MT)	Delete
No records have been added.					

[+ Add a row](#)

### 1.1 Definitions for Reporting Product Data

Section 95102(b) of MRR defines by-product hydrogen gas, liquid hydrogen, and on-purpose hydrogen gas as follows:

- ‘By-product hydrogen gas’ means pure hydrogen gas produced as a result of a process or processes dedicated to producing other products (e.g. catalytic reforming).
- ‘Liquid Hydrogen’ means hydrogen in a liquid state.
- ‘On-purpose hydrogen gas’ means pure molecular hydrogen gas produced by a process or processes dedicated to producing hydrogen (e.g., steam methane reforming).

Because the reported annual masses of on-purpose hydrogen gas produced and liquid hydrogen sold are used to allocate allowances in the Cap-and-Trade Regulation, these values are covered product data and are subject to material misstatement assessment during the verification process. Reporting the annual mass of by-product hydrogen gas produced is required, but these data are not covered product data and are not subject to material misstatement assessment.

On-purpose hydrogen gas production and liquid hydrogen production are classified by the North American Industrial Classification System (NAICS) as Industrial Gas Manufacturing (NAICS code 325120). Facility operators must report this NAICS code in the general facility information reporting in Subpart A of Cal e-GGRT to qualify for allowance allocation for hydrogen production under the Cap-and-Trade Program. Petroleum refineries that also produce hydrogen must report the code for Industrial Gas Manufacturing as a secondary NAICS code in Subpart A.

### **1.2 Annual Mass of On-Purpose Hydrogen Gas Produced**

Section 95114(j) of MRR requires facility operators to report the annual mass (metric tons) of on-purpose hydrogen gas produced. This mass produced must be reported in the "Annual mass of on-purpose hydrogen gas produced (covered product data)" field in the "Other Facility Reporting Info" page of Subpart P in Cal e-GGRT, shown in Figure 1. The reported mass of on-purpose hydrogen gas must reflect actual on-site production, not sales.

Molecular hydrogen ( $H_2$ ) in the feedstock to the hydrogen production unit (e.g., steam methane reformer) that passed through the production unit should be included in the annual mass of on-purpose hydrogen gas produced, but any molecular hydrogen sent to the hydrogen purification unit after bypassing the hydrogen production unit must be excluded. Chemicals other than molecular hydrogen (i.e., impurities, such as  $CH_4$  or steam) also must be excluded from the reported annual mass of on-purpose hydrogen gas produced. Any produced hydrogen gas that is later used to make liquid hydrogen must also be excluded from the annual mass of on-purpose hydrogen gas produced.

### **1.3 Annual Mass of By-Product Hydrogen Gas Produced**

Section 95114(j) of MRR requires facility operators to report the annual mass (metric tons) of by-product hydrogen gas produced. This mass produced must be calculated and reported in the "Annual mass of by-product hydrogen gas produced" field in the "Other Facility Reporting Info" page of Subpart P in Cal e-GGRT, shown in Figure 1. The reported mass must be pure molecular hydrogen gas ( $H_2$ ), and chemicals other than molecular hydrogen (i.e., impurities, such as  $CH_4$  or steam) must be excluded.

#### **1.4 Annual Mass of Liquid Hydrogen Sold**

The annual mass of liquid hydrogen sold to other entities must be reported in the "Annual mass of liquid hydrogen sold (covered product data)" field in the "Other Facility Reporting Info" page of Subpart P in Cal e-GGRT. The reported mass of liquid hydrogen sold may be determined directly from annual sales records.

#### **1.5 All Hydrogen Sold or Transferred to Petroleum Refineries and Hydrogen Vehicle Fueling Stations**

Pursuant to section 95114(j), facility operators must report the annual mass (metric tons) of all gaseous and liquid hydrogen sold or otherwise transferred to petroleum refineries and hydrogen vehicle fueling stations in the "Other Facility Reporting Info" page of Subpart P in Cal e-GGRT. Beginning with 2018 data reported in 2019, facility operators must separately report the mass of gaseous hydrogen transferred and mass of liquid hydrogen transferred, as well as continue to report the combined total.

### **2 Emissions Data Reporting**

This section provides guidance on the emissions data reporting required for hydrogen producers pursuant to section 95114 of MRR. Operators report both facility-level and unit-level emissions data associated with hydrogen production in Subpart P of Cal e-GGRT. Only the unit-level emissions, flaring emissions, and de minimis emissions are used by Cal e-GGRT to calculate the facility's Subpart P covered emissions.

#### **2.1 CO<sub>2</sub> Captured and Transferred Off-Site**

Hydrogen production facilities that capture CO<sub>2</sub> and transfer it off-site must report these emissions in Subpart PP of Cal e-GGRT, as specified in section 95123, as well as in Subpart P of Cal e-GGRT, as specified in section 95114(i). This data is reported in Subpart P at both the facility level and unit level. At the facility level, the annual mass of CO<sub>2</sub> transferred off-site must be reported in the "Annual mass of all CO<sub>2</sub> captured, transferred off-site, and reported by the hydrogen production facility as a supplier of CO<sub>2</sub> as described in section 95114(i)" field in the "Other Facility Reporting Info" page of Subpart P in Cal e-GGRT, shown in Figure 2.

At the unit level, CO<sub>2</sub> captured and transferred off-site is reported in the Equation P-1 calculation spreadsheet as part of the S Factor. The value entered for the S Factor is calculated by the reporter and entered into the Equation P-1 spreadsheet under "S Factor." CO<sub>2</sub> emissions reported under the S Factor are subtracted from unit-level CO<sub>2</sub> emissions in the Equation P spreadsheet. Cal e-GGRT uses the adjusted unit-level CO<sub>2</sub> emissions to calculate total Subpart P covered emissions. Thus, although CO<sub>2</sub>

transferred off-site is also reported in Subpart PP, double counting does not occur because these emissions are subtracted out of Subpart P emissions via the S Factor. The Equation P-1 calculation spreadsheet and S factor are discussed further in sections 2.5 and 2.6, respectively. Note that the facility-level mass of CO<sub>2</sub> captured and transferred off-site that is reported in the Other Facility Reporting Info page should equal the total mass of CO<sub>2</sub> that is reported at the unit level as part of an S Factor. This internal data check may be part of the verification process.

### **2.2 Transferred Carbon other than CO<sub>2</sub>**

The annual mass of carbon other than CO<sub>2</sub> that is transferred off-site in gas, liquid, or solid form must be reported in the data field "Annual quantity of carbon, other than CO<sub>2</sub>, collected and transferred off site in either gas, liquid or solid forms," in the Other Facility Reporting Info page of Subpart P in Cal e-GGRT, shown in Figure 2. This requirement is included in Title 40, Code of Federal Regulation, section 98.166(d) of the U.S. EPA reporting rule, which is incorporated by MRR in the initial paragraph of section 95114.

### **2.3 Emissions Reported Elsewhere**

Pursuant to section 95114(g), operators are required to report in Subpart P the masses of CO<sub>2</sub> and CH<sub>4</sub> reported both in the Equation P spreadsheet and elsewhere in Cal e-GGRT (i.e., "emissions reported elsewhere").

Operators report "emissions reported elsewhere" in Subpart P at both the facility level and unit level. At the facility level, the annual mass of CO<sub>2</sub> and CH<sub>4</sub> reported outside of the Equation P spreadsheet in Cal e-GGRT must be reported in the data fields "Amount of carbon dioxide calculated and reported using other methods in the regulation [95114(g)]" and "Amount of methane calculated and reported using other methods in the regulation [95114(g)]", respectively, as shown in Figure 2.

At the unit level, emissions reported elsewhere are reported in the Equation P calculation spreadsheet as part of the S factor. As described in section 2.1 above, emissions reported as part of the S factor are subtracted from the unit-level CO<sub>2</sub> emissions calculated in the Equation P spreadsheet, which are then used by Cal e-GGRT to calculate total Subpart P covered emissions. Thus, the S factor is used to avoid double counting of any emissions that may be reported both in the Equation P spreadsheet and elsewhere in Cal e-GGRT.

An example of when emissions may be reported elsewhere is if CO<sub>2</sub> and CH<sub>4</sub> is emitted in a waste stream from a hydrogen production unit (e.g., an off-gas stream from a pressure swing absorption [PSA] unit). The CO<sub>2</sub> and CH<sub>4</sub> emissions are calculated as emissions from the hydrogen production unit by Equation P-1, but the CO<sub>2</sub> and CH<sub>4</sub>

may also be calculated and reported as flaring or other combustion emissions within Subpart C of Cal e-GGRT, or as flaring emissions under Subpart P or Y. Because these emissions actually occur through flaring or other combustion, they must be reported as such in the appropriate subpart and subtracted from unit-level emissions calculated in the Equation P-1 spreadsheet by reporting them as part of the S Factor.

Note that the facility-level mass of CO<sub>2</sub> and CH<sub>4</sub> emissions reported elsewhere that are reported in the "Other Facility Reporting Info" page should equal the total mass of emissions reported elsewhere that are reported at the unit level as part of an S Factor. This internal data check may be part of the verification process.

### **2.4 CO<sub>2</sub>e Emissions from Refinery Fuel Gas for the Cost of Implementation (COI) Fee Regulation**

For merchant hydrogen facilities that are not operated by refineries, the total CO<sub>2</sub>e emissions (in metric tons) from the combustion and/or consumption of refinery fuel gas as a fuel or a feedstock must be reported as shown in the last data entry box in Figure 2. Emissions from the combustion/consumption of purchased pipeline natural gas should be excluded from the total CO<sub>2</sub>e emissions reported in this field. The emissions reported in this field are used for the COI Fee Regulation only and do not affect the calculation of the facility's covered emissions.

### **2.5 Atomic Carbon Content, Atomic Hydrogen Content, Molecular Hydrogen Content, and Molecular Weight of Feedstocks and Fuels**

The atomic carbon content, atomic hydrogen content, and molecular hydrogen content of all feedstocks to a hydrogen production unit must be reported pursuant to sections 95114(e)(1) and 95114(e)(2). For units not monitored by a CEMS, the operator must additionally report the carbon content of all fuels and the molecular weight of all gaseous fuels and feedstocks. Fuel and feedstock data are reported in Equation P spreadsheets. Data for each gaseous feedstock or fuel utilized by a hydrogen production unit are reported in an Equation P-1 spreadsheet; data for each liquid feedstock or fuel are reported in an Equation P-2 spreadsheet; and data for each solid feedstock or fuel are reported in an Equation P-3 spreadsheet. All of the spreadsheets are available at the [Cal e-GGRT Calculation Spreadsheet Instructions](#) website.

**Figure 2. Subpart P, “Other Facility Reporting Information” (bottom half)**

Hydrogen Sold or Otherwise Transferred to Petroleum Refineries and Hydrogen Vehicle Fueling Stations [95114(j)]					
Purchaser or Receiver of Hydrogen	ARB ID (if available)	Annual Quantity of Total Gaseous and Liquid Hydrogen Sold or Transferred (MT)	Annual Quantity of Gaseous Hydrogen Sold or Transferred (MT)	Annual Quantity of Liquid Hydrogen Sold or Transferred (MT)	Delete
No records have been added.					
+ Add a row					
Annual mass of all CO <sub>2</sub> captured, transferred off-site, and reported by the hydrogen production facility as a supplier of CO <sub>2</sub> as described in section 95114(i)		<input type="text"/> (metric tons)			
Annual quantity of carbon, other than CO <sub>2</sub> , collected and transferred off site in either gas, liquid or solid forms		<input type="text"/> (kg carbon)			
Amount of carbon dioxide calculated and reported using other methods in the regulation [95114(g)]		<input type="text"/> (metric tons)			
Amount of methane calculated and reported using other methods in the regulation [95114(g)]		<input type="text"/> (metric tons)			

**COST OF IMPLEMENTATION (COI) FEES DATA: REFINERY FUEL GAS [SECTION 95204(F)(5) - COI REGULATION]**

For Merchant Hydrogen facilities only, enter the CO<sub>2</sub>e emissions for all refinery fuel gas combusted or consumed at the facility. Do not include emissions from pipeline quality natural gas combustion (see section 95204(f)(5) for removing the natural gas). The emissions entered in this field are not included in any facility total emissions and are only used for fees calculations. Therefore, all combustion emissions must also be reported in Subpart C.

Refineries with integrated hydrogen production do not complete this section and should leave it blank. For refineries, the COI refinery fuel gas facility emissions are entered in the Subpart Y Additional Production Data and Solomon energy Intensity Index workbook.

Emissions from Refinery Fuel Gas Combusted or Consumed On-Site for Merchant Hydrogen Facility (excluding natural gas) \*  (metric tons CO<sub>2</sub>e) \*\*

\*Merchant hydrogen facilities only; not to be completed by refineries  
 \*\* Emissions value is NOT included in emissions totals for GHG report; COI use only

Figure 3 shows a screenshot of the Equation P-1 spreadsheet. For each gaseous fuel or feedstock supplied to a hydrogen production unit, the atomic carbon content, atomic hydrogen content, molecular hydrogen content, and/or molecular weight must be reported in the appropriate column of the Equation P-1 spreadsheet for each month of the year. Pipeline quality natural gas from a utility may be assumed to have a molecular hydrogen content equal to zero.

**Figure 3. Equation P-1 Spreadsheet**

Subpart P - Hydrogen Production - Calculating CO <sub>2</sub> Emissions Using Equation P-1					
See the DATAEXPORT GUIDANCE tab for instructions on exporting your data in XML format.					
Version		Cal e-GGRT RY2014.R.0			
Today's date		1/13/2015			
<b>Equation P-1</b>		$CO_2 = \left( \sum_{n=1}^k \frac{44}{12} * Fdstk_n * CC_n * \frac{MW_n}{MVC} \right) * 0.001$			
<b>General Information</b>					
Facility Name:					
Reporter Name:					
Unit Name/ ID:					
Reporting Period:					
Comments:					
Unit Type:		Hydrogen Production Process Unit			
<b>Input Data</b>					
Month	Fdstk <sub>n</sub> Volume of gaseous fuel or feedstock used in month n (scf *)	CC <sub>n</sub> Average carbon content of gaseous fuel or feedstock during month n # (kg C / kg of fuel or feedstock)	MW <sub>n</sub> Average molecular weight of the gaseous fuel or feedstock during month n # (kg / kg-mole)	Average atomic hydrogen content of the gaseous feedstock, excluding hydrogen atoms in steam, during month n # (kg H / kg of feedstock)	Average molecular hydrogen content of the gaseous feedstock during month n # (kg H <sub>2</sub> / kg of feedstock)
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
* Standard conditions are 68 °F and one atmosphere.					
# Determined from the results of one or more analyses for each month.					
<b>Constants</b>					
[MVC] = Molar volume conversion factor at standard conditions (scf/kg-mole)	849.5				
[44/12] = Ratio of CO <sub>2</sub> molecular weight to carbon molecular weight (kg CO <sub>2</sub> /kg C)	44/12				
[0.001] = Conversion factor (metric tons/kg)	0.001				
<b>S Factor</b>					
S Factor: Mass of CO <sub>2</sub> emissions reported elsewhere and/or mass of CO <sub>2</sub> captured and transferred off-site (metric tons)					
<b>Annual CO<sub>2</sub> Emissions (metric tons) from Equation P-1</b>					
[CO <sub>2</sub> ] = Annual CO <sub>2</sub> emissions from fuel and feedstock consumption (metric tons)	0.00000				

The atomic carbon content of the hydrogen production unit feedstock means the monthly weighted average mass fraction of carbon atoms in the total feedstock introduced to the hydrogen production unit. This includes carbon atoms that are part of molecules such as CH<sub>4</sub> or CO<sub>2</sub> contained in the feedstock. Similarly, the atomic hydrogen content of a feedstock means the monthly average mass fraction of hydrogen atoms in the total feedstock introduced to the hydrogen production unit. This includes hydrogen atoms that are part of molecular hydrogen (H<sub>2</sub>) contained in the feedstock, but it excludes hydrogen atoms in steam (H<sub>2</sub>O). Steam is not considered to be a hydrogen production unit feedstock in these calculations.

The monthly average molecular hydrogen content of the total feedstock to the hydrogen production unit must also be reported for each month. The molecular hydrogen content of a feedstock means the monthly average mass fraction of hydrogen molecules ( $H_2$ ) in the total feedstock introduced to the hydrogen production unit.

For operators with CEMS on the hydrogen production unit, the Equation P-1, P-2, or P-3 spreadsheets are not required for estimating  $CO_2$  emissions. However, the appropriate Equation P-1, P-2, or P-3 spreadsheet(s) must be uploaded to Subpart A of Cal e-GGRT under "Additional Attachments" to report the monthly average atomic carbon content, atomic hydrogen content, and molecular hydrogen content of each feedstock.

### **2.6 Unit-Level Emissions**

For hydrogen production units not monitored by a CEMS, operators use the Equation P spreadsheets to calculate and report  $CO_2$  process and fuel combustion emissions.  $CO_2$  emissions are calculated using Equations P-1, 2, or 3 for gaseous, liquid, and solid fuels and feedstocks, respectively. The equations utilize monthly fuel volume and carbon content, as well as molecular weight for gaseous fuels or feedstocks, to estimate  $CO_2$  emissions. The equations assume that all carbon content in the fuel or feedstock is converted to  $CO_2$ . Multiple Equation P spreadsheets may be completed for each hydrogen production unit, as a separate spreadsheet is required for each fuel or feedstock.

### **2.7 S Factor for $CO_2$ Emissions Reported Elsewhere and $CO_2$ Captured and Transferred Off-site**

As discussed in sections 2.1 and 2.3 above, the S Factor in the Equation P spreadsheets is equal to the mass of  $CO_2$  that is captured and transferred off-site and/or the mass of  $CO_2$  emissions reported elsewhere. It is used to avoid double-counting of  $CO_2$  emissions that are captured and transferred off-site, which are also reported under Subpart PP, and to avoid double-counting of emissions that are reported both in the Equation P spreadsheet and elsewhere in Cal e-GGRT. The S Factor is deducted from the total  $CO_2$  emissions calculated for the unit in the Equation P spreadsheet. The emissions calculated in the Equation P spreadsheets are used to calculate total Subpart P emissions, which in turn are used to calculate total facility emissions. So if the S Factor is used as intended, no further adjustments in Cal e-GGRT are needed to avoid double counting of emissions that are captured and transferred off-site or that are reported elsewhere in Cal e-GGRT.

In cases where  $CO_2$  transferred off-site or reported elsewhere cannot be attributed to a single hydrogen unit, those emissions must still be subtracted from the facility total by

including them in an S Factor. The reporter may either attribute all of the CO<sub>2</sub> transferred or CO<sub>2</sub> emissions reported elsewhere to a single designated hydrogen unit (or even a specific fuel or feedstock), in which case it would all be in one S factor, or the reporter may distribute the mass among the multiple units and fuels or feedstocks. The sum of all S factors equals the total amount of double-counted emissions that should be subtracted from facility-level emissions.

Note that the sum of all reported S Factors should equal the sum of the facility-level mass of CO<sub>2</sub> captured and transferred off-site (section 3.1) and the facility-level mass of CO<sub>2</sub> emissions reported elsewhere as reported in the "Other Facility Reporting Info" page of Subpart P. This internal data check may be part of the verification process.

The S Factor can only be used to correct Subpart P emissions for double counting when emissions from a hydrogen production unit are calculated using an Equation P calculation spreadsheet. If a CEMS and/or mass balance approach is used to calculate emissions from a hydrogen production unit, operators must use another method to ensure that emissions are not reported twice in Cal e-GGRT.

### **2.8 Stationary Combustion CH<sub>4</sub> and N<sub>2</sub>O Emissions**

Operators must report CH<sub>4</sub> and N<sub>2</sub>O combustion emissions associated with hydrogen production pursuant to section 95114(k). If not included as part of reporting for a CEMS unit within Subpart P of Cal e-GGRT, these CH<sub>4</sub> and N<sub>2</sub>O emissions must be reported as stationary source combustion emissions in Subpart C of Cal e-GGRT. The operator may add a new unit configuration to Subpart C to include the CH<sub>4</sub> and N<sub>2</sub>O combustion emissions associated with hydrogen production activities. The CH<sub>4</sub> emissions reported under Subpart C are partially accounted for in the Equation P spreadsheet, which assumes all carbon entering the unit as fuel or feedstock is converted to CO<sub>2</sub>. Therefore, the small amount of CH<sub>4</sub> from stationary combustion associated with hydrogen production that is reported under Subpart C may be accounted for in the S Factor in units of CO<sub>2</sub>e.

The mass of CH<sub>4</sub> emissions that are included in the S Factor should equal the mass of CH<sub>4</sub> emissions reported elsewhere in the "Other Facility Reporting Info" page (see section 3.3 and Figure 2).

### **2.9 Flaring Emissions Associated with Hydrogen Production**

Section 95114(l) of MRR requires hydrogen producers to report annual mass of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions from flaring. Merchant hydrogen production facilities must report these emissions under the flaring section of Subpart P within Cal e-GGRT. Refineries must report flaring emissions associated with hydrogen production under

Subpart P if these emissions can be disaggregated from flaring emissions associated with other refinery activities. If these emissions cannot be separated from flaring emissions associated with other refinery activities, then operators may report flaring emissions associated with hydrogen production in Subpart Y. Figure 4 shows the initial data entry screen to add a flare in Subpart P of Cal e-GGRT. Subsequent screens are displayed in Cal e-GGRT depending on the emissions calculation method that is selected for the flare.

**Figure 4. Subpart P, Flare Emissions**

**Section 95114 (Subpart P): Hydrogen Production (2018)**

[Subpart Overview](#) » [Add a Flare](#)

**FLARE INFORMATION**

Subpart P requires a facility to uniquely identify each flare and provide the information described below for each. Also use this page to enter the method used to calculate carbon dioxide (CO<sub>2</sub>) emissions for this flare. For additional information about adding and editing a flare unit, please use the Cal e-GGRT Help link(s) provided.

\* denotes a required field

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**UNIT INFORMATION**

Name or ID \*  (40 characters maximum)

Description (optional)

Type **Flare**

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**FLARE DETAILS**

**Type of flare**

- Steam assisted
- Air-assisted
- Unassisted
- Other

**Flare service type**

- General facility flare
- Unit flare
- Emergency only flare
- Back-up flare
- Other (specify)

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**EMISSIONS CALCULATION METHOD**

**Method used to calculate the CO<sub>2</sub> emissions. Note that certain methods must be used if certain criteria are met. See the help section for details.**

- 98.253(b)(1)(ii)(A) - Equation Y-1a Gas Composition Monitored
- 98.253(b)(1)(ii)(A) - Equation Y-1b Gas Composition Monitored
- 98.253(b)(1)(ii)(B) - Equation Y-2 Heat Content Monitored
- ARB 95113(d) - Start-up, Shutdown, Malfunction Equation

### **3 Additional Information**

Detailed training materials for reporting using Cal e-GGRT:

<https://ww2.arb.ca.gov/mrr-tool>

The GHG Mandatory Reporting Regulation, with full requirements:

<https://ww2.arb.ca.gov/mrr-regulation>

Contact the MRR reporting helpdesk: [ghgreport@arb.ca.gov](mailto:ghgreport@arb.ca.gov).

Contact the MRR verification helpdesk: [ghgverify@arb.ca.gov](mailto:ghgverify@arb.ca.gov).

For help with reporting or verification, please contact the appropriate staff member:

<https://ww2.arb.ca.gov/mrr-contacts>