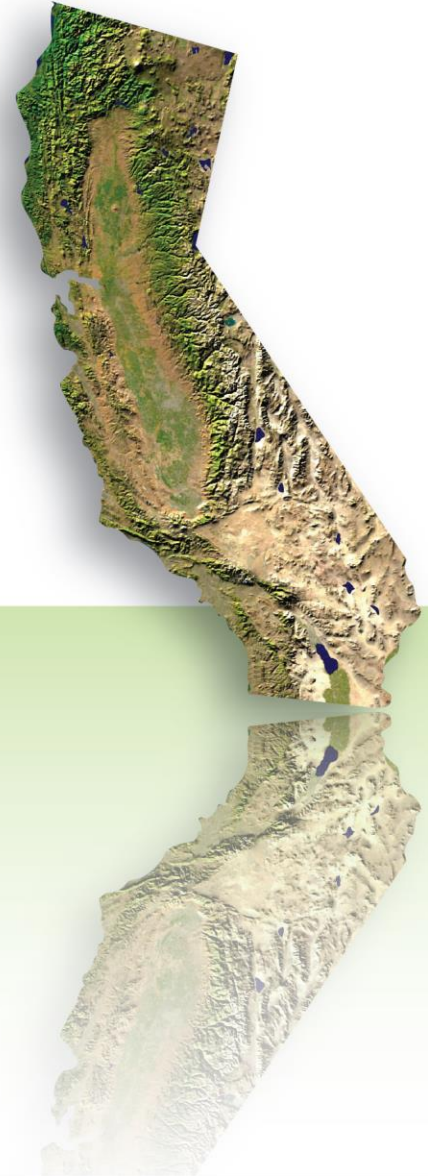


# Verifier Accreditation Training for Mandatory Greenhouse Gas Reporting



Process Emissions Specialty  
Course 4.7: Lead Production

California Environmental Protection Agency

 **Air Resources Board**

# Verifier Accreditation Training for Mandatory Greenhouse Gas Reporting

## Course 4: Process Emissions Specialty

4.1 Cement Production

4.2 Lime Manufacturing

4.3 Glass Manufacturing

4.4 Nitric Acid Production

4.5 Iron and Steel Production

4.6 Pulp and Paper Manufacturing

4.7 Lead Production

California Environmental Protection Agency

 **Air Resources Board**

# Course 4.7 Handouts

No handouts are used for this course.

# Course 4.7 Lead Production

1. Overview
2. Verifying Emissions
3. Verifying Product Data

# § 95124 Lead Production - Applicability

Any facility with a lead smelting furnace emitting  $\geq 25,000$  MTCO<sub>2</sub>e triggers

- Verification
- Cap-and-Trade covered entity



## § 95124 Relation to Subpart R

In addition to Subpart R, which provides the methods for calculating process emissions from lead smelting and missing emissions data substitution, § 95124 also includes

- Covered product data
  - Annual production of lead and lead alloy products
  - Any product that contains lead is a covered product, regardless of percent lead content

# Methods to Estimate CO<sub>2</sub> Process Emissions for Lead Production Facilities (Subpart R)

- Assumes all carbon in recycled batteries is emitted as CO<sub>2</sub>

$$E_{CO_2} = \frac{44}{12} \times \frac{2000}{2205} \times \left[ (Ore \times C_{Ore}) + (Scrap \times C_{Scrap}) + (Flux \times C_{Flux}) + (Carbon \times C_{Carbon}) + (Other \times C_{Other}) \right] \quad (\text{Eq. R-1})$$

- If an input category (i.e. Scrap) contributes <1% of total carbon mass, can be excluded from emissions reporting (40 CFR 98.184(b))

# Verifying Missing Emissions Data Substitution ( § 95124)

- Section 95124 refers to § 95129 for missing SFC data
- For missing quantities of carbon-containing inputs
  - If at least 80% data capture, use Subpart R
  - If <80% data capture, substitute each missing value with max. capacity of the system ( § 95116(c)(2)(B))

# Verifying Emissions (1 of 2)

## Evidence to request during verification

- Annual mass quantities of all inputs (sum of monthly mass values from plant instruments)
- Carbon content
  - Material supplier data, or collection and analysis, of three or more samples per year ( § 98.184(b)(2))
  - No missing data procedures provided, operator must retest carbon content for each input ( § 98.185(a))
- Cal e-GGRT inputs
- Any other data that can validate reported data
  - Hours of operation, average outputs, financial data, and any other monitored/measured data



# Verifying Emissions (2 of 2)

## How to evaluate evidence

- Evaluate material misstatement using data checks, then separately conduct data checks and measurement accuracy assessment to review conformance
- Confirm methods properly followed and no changes from previous year
- Confirm correct calculation



# Verify Emissions from Carbon-Containing Materials

- Evidence to request
  - Monthly quantity of carbon containing materials charged to smelter
- How to evaluate evidence
  - Confirm completeness of material quantities
  - Confirm correct emission factor used
  - Confirm correct calculation

$$E_{CO_2} = \frac{44}{12} \times \frac{2000}{2205} \times \left[ (Ore \times C_{Ore}) + (Scrap \times C_{Scrap}) + (Flux \times C_{Flux}) + (Carbon \times C_{Carbon}) + (Other \times C_{Other}) \right] \quad (\text{Eq. R-1})$$

$$CO_2 = \sum_1^k E_{CO_2k} \quad (\text{Eq. R-2})$$



# Verifying Other Emissions

- CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from stationary fuel combustion
  - Methods include Tier 1, 2, 3, and 4 methodologies from 40 CFR 98.33(a) by fuel type specified in § 95115
  - Verify according to stationary fuel combustion (SFC) procedures for the correct Tier
- For conformance, confirm other data required by Subpart R is reported properly



# Verifying Covered Product Data for Lead Production Plants

- Evidence to request
  - Monthly production data of lead and lead alloys
    - Compare with sales data as a cross-check
  - Direct measurement of production
  - Existing plant procedures used for accounting purposes
- How to evaluate evidence
  - Confirm measurement accuracy, and if covered data are excluded, confirm that an estimate is reported
  - Confirm that monthly data are summed correctly
  - Compare summed monthly data with reported production



# Group Participation Exercise 4.7.1 - Lead Covered Product Data

- A battery recycling facility purchases used batteries and produces lead at a specified purity.
- Lead is sold to California customers and lead alloy is sold overseas.
- There was a power failure on December 30, 2013, and 30 hours of production data is missing from the data acquisition and handling system, but that material was separated and re-measured using the same measurement system and entered into the data handling system the following week.
- What does the verifier do on the site visit to verify covered product data?



# Group Participation Exercise 4.7.1 - Lead Covered Product Data Solution (1 of 2)

- If production data during power failure is collected after the power failure and is verifiable, it is not considered “missing data”
- Mass of purchased batteries can be used to cross check reported mass of inputs and outputs
- Sales data can be used to cross check reported outputs and product data (in-state versus out-of-state sales not relevant)



# Group Participation Exercise 4.7.1 - Lead Covered Product Data Solution (2 of 2)

- Requested data should include daily input and output data (mass and carbon content by type), several days of hourly production data, lab analysis data, battery purchase data and product sales data.
  - Cross check data and summations to get annual totals
- Review data management system; how data are tracked, controlled, quality assured; and who has read access and editing access
- How are the data queried and compiled into Cal e-GGRT?
- Review lab sample acquisition and lab analysis procedures
- Review procedures for measurement of input and output mass, as well as meter and measurement QC system



# Questions and ARB Comments

## Course 4: Process Emissions Specialty

### *Complete:*

4.1 Cement Production

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