(vi) If you did not use Equation Y–23, the tank-specific methane composition data and the annual gas generation volume (scf/yr) used to estimate the cumulative CH₄ emissions for storage tanks used to process unstabilized crude oil.

(5)–(7) [Reserved]

(p) For loading operations, the owner or operator shall report:

(1) The cumulative annual CH₄ emissions (in metric tons of each pollutant emitted) for loading operations.

(2) The quantity and types of materials loaded by vessel type (barge, tanker, marine vessel, etc.) that have an equilibrium vapor-phase concentration of methane of 0.5 volume percent or greater, and the type of vessels in which the material is loaded.

(3) The type of control system used to reduce emissions from the loading of material with an equilibrium vapor-phase concentration of methane of 0.5 volume percent or greater, if any (submerged loading, vapor balancing, etc.).

(q) Name of each method listed in §98.254 or a description of manufacturer’s recommended method used to determine a measured parameter.


§98.257 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records of all parameters monitored under §98.255. If you comply with the combustion methodology in §98.252(a), then you must retain under this subpart the records required for the Tier 3 and/or Tier 4 Calculation Methodologies in §98.37 and you must keep records of the annual average flow calculations.

[75 FR 79166, Dec. 17, 2010]

§98.258 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart Z—Phosphoric Acid Production

§98.260 Definition of the source category.

The phosphoric acid production source category consists of facilities with a wet-process phosphoric acid process line used to produce phosphoric acid. A wet-process phosphoric acid process line is the production unit or units identified by an individual identification number in an operating permit and/or any process unit or group of process units at a facility reacting phosphate rock from a common supply source with acid.

§98.261 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a phosphoric acid production process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§98.262 GHGs to report.

(a) You must report CO₂ process emissions from each wet-process phosphoric acid process line.

(b) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O from each stationary combustion unit following the requirements of subpart C of this part.

§98.263 Calculating GHG emissions.

You must calculate and report the annual process CO₂ emissions from each wet-process phosphoric acid process line using the procedures in either paragraph (a) or (b) of this section.

(a) Calculate and report under this subpart the process CO₂ emissions by operating and maintaining a CEMS according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart the process CO₂ emissions using the procedures in paragraphs (b)(1) and (b)(2) of this section.

(1) Calculate the annual CO₂ mass emissions from each wet-process phosphoric acid process line using the
methods in paragraphs (b)(1)(i) or (ii) of this section, as applicable.

(i) If your process measurement provides the inorganic carbon content of phosphate rock as an output, calculate and report the process CO₂ emissions from each wet-process phosphoric acid process line using Equation Z–1a of this section:

$$E_m = \sum_{i=1}^{b} \sum_{n=1}^{z} \left( IC_{n,i} \times P_{n,i} \right) \times \frac{2000}{2205} \times \frac{44}{12} \quad \text{(Eq. Z-1a)}$$

where:
- \(E_m\) = Annual CO₂ mass emissions from a wet-process phosphoric acid process line \(m\) according to this Equation Z–1a (metric tons).
- \(IC_{n,i}\) = Inorganic carbon content of a grab sample batch of phosphate rock by origin \(i\) obtained during month \(n\), from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(P_{n,i}\) = Mass of phosphate rock by origin \(i\) consumed in month \(n\) by wet-process phosphoric acid process line \(m\) (tons).
- \(z\) = Number of months during which the process line \(m\) operates.
- \(b\) = Number of different types of phosphate rock in month, by origin. If the grab sample is a composite sample of rock from more than one origin, \(b = 1\).
- \(\frac{2000}{2205}\) = Conversion factor to convert tons to metric tons.
- \(\frac{44}{12}\) = Ratio of molecular weights, CO₂ to carbon.

(ii) If your process measurement provides the CO₂ content directly as an output, calculate and report the process CO₂ emissions from each wet-process phosphoric acid process line using Equation Z–1b of this section:

$$E_m = \sum_{i=1}^{b} \sum_{n=1}^{z} \left( CO_{2,n,i} \times P_{n,i} \right) \times \frac{2000}{2205} \quad \text{(Eq. Z-1b)}$$

where:
- \(E_m\) = Annual CO₂ mass emissions from a wet-process phosphoric acid process line \(m\) according to this Equation Z–1b (metric tons).
- \(CO_{2,n,i}\) = Carbon dioxide content of a grab sample batch of phosphate rock by origin \(i\) obtained during month \(n\) (percent by weight, expressed as a decimal fraction).
- \(P_{n,i}\) = Mass of phosphate rock by origin \(i\) consumed in month \(n\) by wet-process phosphoric acid process line \(m\) (tons).
- \(z\) = Number of months during which the process line \(m\) operates.
- \(b\) = Number of different types of phosphate rock in month, by origin. If the grab sample is a composite sample of rock from more than one origin, \(b = 1\).
- \(\frac{2000}{2205}\) = Conversion factor to convert tons to metric tons.

(2) You must determine the total emissions from the facility using Equation Z–2 of this section:

$$CO_2 = \sum_{m=1}^{p} E_m \quad \text{(Eq. Z-2)}$$

Where:
- \(CO_2\) = Annual process CO₂ emissions from phosphoric acid production facility (metric tons/year).
- \(E_m\) = Annual process CO₂ emissions from wet-process phosphoric acid process line \(m\) (metric tons/year).
- \(p\) = Number of wet-process phosphoric acid process lines.

(c) If GHG emissions from a wet-process phosphoric acid process line are vented through the same stack as any combustion unit or process equipment that reports CO₂ emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of
§ 98.264 Monitoring and QA/QC requirements.

(a) You must obtain a monthly grab sample of phosphate rock directly from the rock being fed to the process line before it enters the mill using one of the following methods. You may conduct the representative bulk sampling using a method published by a consensus standards organization, or you may use industry consensus standard practice methods, including but not limited to the Phosphate Mining States Methods Used and Adopted by the Association of Fertilizer and Phosphate Chemists (AFPC). If phosphate rock is obtained from more than one origin in a month, you must obtain a sample from each origin of rock or obtain a composite representative sample.

(b) You must determine the carbon dioxide or inorganic carbon content of each monthly grab sample of phosphate rock (consumed in the production of phosphoric acid). You may use a method published by a consensus standards organization, or you may use industry consensus standard practice methods, including but not limited to the Phosphate Mining States Methods Used and Adopted by AFPC.

(c) You must determine the mass of phosphate rock consumed each month (by origin) in each wet-process phosphoric acid process line. You can use existing plant procedures that are used for accounting purposes (such as sales records) or you can use data from existing monitoring equipment that is used to measure total mass flow of phosphorus-bearing feed under 40 CFR part 60 or part 63.

§ 98.265 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter must be used in the calculations as specified in paragraphs (a) and (b) of this section.

(a) For each missing value of the inorganic carbon content or CO₂ content of phosphate rock (by origin), you must use the appropriate default factor provided in Table Z–1 of this subpart. Alternatively, you must determine a substitute data value by calculating the arithmetic average of the quality-assured values of inorganic carbon contents or CO₂ contents of phosphate rock of origin i (see Equation Z–1a or Z–1b of this subpart) from samples immediately preceding and immediately following the missing data incident. If no quality-assured data on inorganic carbon contents or CO₂ contents of phosphate rock of origin i are available prior to the missing data incident, the substitute data value shall be the first quality-assured value for inorganic carbon contents or CO₂ contents for phosphate rock of origin i obtained after the missing data period.

(b) For each missing value of monthly mass consumption of phosphate rock (by origin), you must use the best available estimate based on all available process data or data used for accounting purposes.

§ 98.266 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) through (f) of this section.

(a) Annual phosphoric acid production, by origin of the phosphate rock (tons).

(b) Annual phosphoric acid production capacity (tons).

(c) Annual arithmetic average percent inorganic carbon or carbon dioxide in phosphate rock from monthly records (percent by weight, expressed as a decimal fraction).