where:

\[ E_{N_2Ot} = \text{Annual } N_2O \text{ mass emissions from nitric acid train } "t" \text{ according to this Equation V–3c (metric tons).} \]

\[ E_{EFN_2O,t} = \text{ } N_2O \text{ emissions factor for nitric acid train } "t" \text{ (lb } N_2O/\text{ton nitric acid produced).} \]

\[ P_t = \text{Annual nitric acid produced from nitric acid train } "t" \text{ (ton acid produced, 100 percent acid basis).} \]

\[ DF_N = \text{Destruction efficiency of } N_2O \text{ abatement technology } "N" \text{ (decimal fraction of } N_2O \text{ removed from vent stream).} \]

\[ AF_N = \text{Abatement utilization factor of } N_2O \text{ abatement technology } "N" \text{ (decimal fraction of time that abatement technology } "N" \text{ is operating).} \]

\[ FC_N = \text{Fraction control factor of } N_2O \text{ abatement technology } "N" \text{ (decimal fraction of total emissions from nitric acid train } "t" \text{ that are sent to abatement technology } "N"). \]

\[ 2205 = \text{Conversion factor (lb/metric ton).} \]

(4) If nitric acid train "t" does not exhaust to any } N_2O \text{ abatement technology after the test point, you must use the emissions factor (determined in Equation V–1 of this section), and the annual nitric acid production (determined in paragraph (i) of this section) according to Equation V–3b of this section:

\[ E_{N_2Ot} = \frac{E_{EFN_2O,t} \times P_t}{2205} \quad \text{(Eq. V-3d)} \]

where:

\[ E_{N_2Ot} = \text{Annual } N_2O \text{ mass emissions from nitric acid train } "t" \text{ according to this Equation V–3d (metric tons).} \]

\[ E_{EFN_2O,t} = \text{Average site-specific } N_2O \text{ emissions factor for nitric acid train } "t" \text{ (lb } N_2O/\text{ton acid produced, 100 percent acid basis).} \]

\[ P_t = \text{Annual nitric acid production from nitric acid train } "t" \text{ (ton acid produced, 100 percent acid basis).} \]

\[ 2205 = \text{Conversion factor (lb/metric ton).} \]

(h) You must determine the annual nitric acid production emissions combined from all nitric acid trains at your facility using Equation V–4 of this section:

\[ N_2O = \sum_{t=1}^{m} E_{N_2Ot} \quad \text{(Eq. V-4)} \]

Where:

\[ N_2O = \text{Annual process } N_2O \text{ emissions from nitric acid production facility (metric tons).} \]

\[ E_{N_2Ot} = \text{N}_2\text{O mass emissions per year for nitric acid train } "t" \text{ (metric tons).} \]

\[ m = \text{Number of nitric acid trains.} \]

(i) You must determine the total annual amount of nitric acid produced on each nitric acid train "t" (ton acid produced, 100 percent acid basis), according to §98.224(f).


§98.224 Monitoring and QA/QC requirements.

(a) You must conduct a new performance test according to a test plan as specified in paragraphs (a)(1) through (3) of this section.

(1) Conduct the performance test annually. The test should be conducted at a point during the campaign which is representative of the average emissions rate from the nitric acid campaigns. Facilities must document the methods used to determine the representative point of the campaign when the performance test is conducted.

(2) Conduct the performance test when your nitric acid production process is changed, specifically when abatement equipment is installed.

(3) If you requested Administrator approval for an alternative method of determining } N_2O \text{ emissions under §98.223(a)(2), you must conduct the performance test if your request has not been approved by the Administrator within 150 days of the end of the reporting year in which it was submitted.}

(b) You must measure the } N_2O \text{ concentration during the performance test using one of the methods in paragraphs (b)(1) through (b)(3) of this section.


(3) An equivalent method, with Administrator approval.

(c) You must determine the production rate(s) (100 percent acid basis) from each nitric acid train during the performance test according to paragraphs (c)(1) or (2) of this section.

(1) Direct measurement of production and concentration (such as using flow meters, weigh scales, for production and concentration measurements).

(2) Existing plant procedures used for accounting purposes (i.e. dedicated tank-level and acid concentration measurements).

(d) You must determine the volumetric flow rate during the performance test in conjunction with the applicable EPA methods in 40 CFR part 60, appendices A–1 through A–4. Conduct three emissions test runs of 1 hour each. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. For each test, the facility must prepare an emission factor determination report that must include the items in paragraphs (d)(1) through (d)(3) of this section.

(1) Analysis of samples, determination of emissions, and raw data.

(2) All information and data used to derive the emissions factor(s).

(3) The production rate during each test and how it was determined.

(e) You must determine the total monthly amount of nitric acid produced. You must also determine the monthly amount of nitric acid produced while N₂O abatement technology is operating from each nitric acid train. These monthly amounts are determined according to the methods in paragraphs (c)(1) or (2) of this section.

(f) You must determine the annual amount of nitric acid produced. You must also determine the annual amount of nitric acid produced while N₂O abatement technology is operating for each nitric acid train. These annual amounts are determined by summing the respective monthly nitric acid quantities determined in paragraph (e) of this section.


§ 98.225 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 shall be used in the calculations as specified in paragraphs (a) and (b) of this section.

(a) For each missing value of nitric acid production, the substitute data value shall be the best available estimate based on all available process data or data used for accounting purposes (such as sales records).

(b) For missing values related to the performance test, including emission factors, production rate, and N₂O concentration, you must conduct a new performance test according to the procedures in §98.224 (a) through (d).

§ 98.226 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 (p) of this section.

(a) Nitric Acid train identification number.

(b) Annual process N₂O emissions from each nitric acid train (metric tons).

(c) [Reserved]

(d) Annual nitric acid production from each nitric acid train during which N₂O abatement technology is operating (ton acid produced, 100 percent acid basis).

(e) Annual nitric acid production from the nitric acid facility (tons, 100 percent acid basis).

(f) Number of nitric acid trains.

(g) Number of different N₂O abatement technologies per nitric acid train "t".