ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 86 and 98

[EPA–HQ–OAR–2010–0109; FRL–9158–6]

RIN 2060–A079

Mandatory Reporting of Greenhouse Gases

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to amend specific provisions in the 2009 Final Mandatory Greenhouse Gas Reporting rule (2009 Final MRR) to correct certain technical and editorial errors that have been identified since promulgation and to clarify or propose minor updates to certain provisions that have been the subject of questions from reporting entities. These proposed changes include additional information to better or more fully understand compliance obligations, corrections to data reporting elements so they more closely conform to the information used to perform emission calculations and other corrections and amendments. EPA has received six petitions for reconsideration on the 2009 Final MRR. EPA is still considering these petitions, and the issues raised in the petitions are not discusssed or addressed in today's action.

DATES: *Comments.* Comments must be received on or before July 30, 2010.

Public Hearing. EPA does not plan to conduct a public hearing unless requested. To request a hearing, please contact the person listed in the following **FOR FURTHER INFORMATION CONTACT** section by June 22, 2010. If requested, the hearing will be conducted on June 30, 2010, in the Washington, DC area. EPA will provide further information about the hearing on its webpage if a hearing is requested.

ADDRESSES: You may submit your comments, identified by docket ID No. EPA–HQ–OAR–2010–0109 by any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the online instructions for submitting comments.
- *E-mail: MRR_Corrections@epa.gov.* Include docket ID No. EPA–HQ–OAR–2010–0109 [and/or RIN number] in the subject line of the message.
- *Fax:* (202) 566–1741.
- *Mail:* Environmental Protection Agency, EPA Docket Center (EPA/DC), Mailcode 2822T, Attention Docket ID No. OAR–2010–0109, 1200 Pennsylvania Avenue, NW., Washington, DC 20004.
- *Hand/Courier Delivery:* EPA Docket Center, Public Reading Room, EPA West Building, Room 3334, 1301 Constitution Avenue, NW., Washington, DC 20004. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–HQ–OAR–2010–0109, Technical Corrections, Clarifying and Other Amendments to Certain Provisions of the Mandatory Greenhouse Gas Reporting Rule. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov* or e-mail. The *http://www.regulations.gov* Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *http://www.regulations.gov* your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the Air Docket, EPA/DC, EPA West Building, Room 3334, 1301 Constitution Ave., NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: Carole Cook, Climate Change Division, Office of Atmospheric Programs (MC–6207J), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (202) 343–9263; fax number: (202) 343–2342; e-mail address: *GHGReportingRule@epa.gov.* For technical information contact the Greenhouse Gas Reporting Rule Hotline at telephone number: (877) 444–1188; or e-mail: *ghgmrr@epa.gov.* To obtain information about the public hearings or to register to speak at the hearings, please go to *http://www.epa.gov/climatechange/emissions/ghgrulemaking.html.* Alternatively, contact Carole Cook at 202–343–9263.

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of today's proposal will also be available through the WWW. Following the Administrator's signature, a copy of this action will be posted on EPA's greenhouse gas reporting rule Web site at *http://www.epa.gov/climatechange/emissions/ghgrulemaking.html.*

SUPPLEMENTARY INFORMATION:

Additional Information on Submitting Comments: To expedite review of your comments by Agency staff, you are encouraged to send a separate copy of your comments, in addition to the copy you submit to the official docket, to Carole Cook, U.S. EPA, Office of Atmospheric Programs, Climate Change Division, Mail Code 6207–J, Washington, DC 20460, telephone (202) 343–9263, e-mail address: *GHGReportingRule@epa.gov.*

Regulated Entities. The Administrator determined that this action is subject to the provisions of Clean Air Act (CAA) section 307(d). *See* CAA section 307(d)(1)(V) (the provisions of section 307(d) apply to "such other actions as the Administrator may determine"). These are proposed amendments to existing regulations. If finalized, these amended regulations would affect owners or operators of certain fossil fuel suppliers, direct emitters of GHGs, and manufacturers of highway heavy-duty vehicles. Regulated categories and entities include those listed in Table 1 of this preamble:

TABLE 1—EXAMPLES OF AFFECTED ENTITIES BY CATEGORY

Category	NAICS	Examples of affected facilities
Adipic Acid Production	325199	Adipic acid manufacturing facilities.
Cement Production	327310	Portland cement manufacturing plants.
Ferroalloy Production	331112	Ferroalloys manufacturing facilities.
Glass Production	327211	Flat glass manufacturing facilities.
	327213	Glass container manufacturing facilities.
	327212	Other pressed and blown glass and glassware manufacturing facilities.
HCFC–22 Production and HFC–23 Destruction.	325120	Chlorodifluoromethane manufacturing facilities.
Hydrogen Production	325120	Hydrogen manufacturing facilities.
Iron and Steel Production	331111	Integrated iron and steel mills, steel companies, sinter plants, blast furnaces, basic oxygen process furnace shops.
Lime Production	327410	Calcium oxide, calcium hydroxide, dolomitic hydrates manufacturing facilities.
Nitric Acid Production	325311	Nitric acid manufacturing facilities.
Phosphoric Acid Production	325312	Phosphoric acid manufacturing facilities.
Soda Ash Manufacturing	325181	Alkalies and chlorine manufacturing facilities.
	212391	Soda ash, natural, mining and/or beneficiation.
Titanium Dioxide Production	325188	Titanium dioxide manufacturing facilities.
Zinc Production	331419	Primary zinc refining facilities.
	331492	Zinc dust reclaiming facilities, recovering from scrap and/or alloying purchased metals.
Municipal Solid Waste Landfills	562212	Solid Waste Landfills.
	221320	Sewage Treatment Facilities.
Suppliers of Coal Based Liquids Fuels.	211111	Coal liquefaction at mine sites.
Suppliers of Natural Gas and NGLs.	221210	Natural gas distribution facilities.
	211112	Natural gas liquid extraction facilities.

Table 1 of this preamble is not intended to be exhaustive, but rather provides a guide for readers regarding facilities likely to be affected by this action. Table 1 of this preamble lists the types of facilities that EPA is now aware could be potentially affected by the reporting requirements. Other types of facilities than those listed in the table could also be subject to reporting requirements. To determine whether you are affected by this action, you should carefully examine the applicability criteria found in 40 CFR part 98, subpart A or the relevant criteria in the sections related to fossil fuel suppliers, direct emitters of GHGs, and manufacturers of highway heavy-duty vehicles. If you have questions regarding the applicability of this action to a particular facility, consult the person listed in the preceding **FOR FURTHER GENERAL INFORMATION CONTACT** section.

Acronyms and Abbreviations. The following acronyms and abbreviations are used in this document.

AFPC Association of Fertilizer and Phosphate Chemists
AOD argon-oxygen decarburization
API American Petroleum Institute
ASTM American Society for Testing and Materials
CAA Clean Air Act
CaO calcium oxide
CBI confidential business information
CEMS continuous emission monitoring system
CFR Code of Federal Regulations
CH_4 methane
CO_2 carbon dioxide
DE destruction efficiency
EAF electric arc furnace
EF emission factor
EIA Energy Information Administration
EO Executive Order
EPA U.S. Environmental Protection Agency
FR **Federal Register**
GHG greenhouse gas
HHV higher heating value
ID identification
kg kilograms
LNG liquefied natural gas
MgO magnesium oxide
Mscf thousand standard cubic feet
MRR mandatory GHG reporting rule
N_2O nitrous oxide
NAICS North American Industry Classification System
NGLs natural gas liquids
NO_X nitrogen oxides
OMB Office of Management and Budget
QA/QC quality assurance/quality control
RFA Regulatory Flexibility Act
U.S. United States
UMRA Unfunded Mandates Reform Act of 1995

Table of Contents

I. Background

A. How is this preamble organized?

The first section of this preamble contains the basic background information about the origin of these proposed rule amendments and request for public comment. This section also discusses EPA's use of our legal authority under the Clean Air Act to collect data under the mandatory GHG reporting rule.

The second section of this preamble describes in detail the changes that are being proposed to correct technical errors, to provide clarification, or propose amendments to address implementation issues identified by EPA and others. This section also presents EPA's rationale for the proposed changes and identifies issues on which EPA is particularly interested in receiving public comments.

Finally, the last (third) section of the preamble discusses the various statutory and executive order requirements applicable to this proposed rulemaking.

B. Background on Today's Action

The 2009 Final MRR was signed by EPA Administrator Lisa Jackson on September 22, 2009 and published in the **Federal Register** on October 30, 2009 (74 FR 56260–56519, October 30, 2009). The 2009 Final MRR, which became effective on December 29, 2009, included reporting of GHGs from various facilities and suppliers, consistent with the 2008 Consolidated Appropriations Act.[1] The source categories in the 2009 Final MRR cover approximately 85 percent of U.S. GHG emissions through reporting by direct emitters as well as suppliers of fossil fuels and industrial gases.

C. Legal Authority

EPA is proposing these rule amendments under its existing CAA authority, specifically authorities provided in section 114 and section 208 of the CAA.

As stated in the preamble to the 2009 Final MRR (74 FR 56260, October 30, 2009), CAA section 114 provides EPA broad authority to require the information proposed to be gathered by this rule because such data would inform and are relevant to EPA's carrying out a wide variety of CAA provisions. As discussed in the preamble to the initial proposed rule (74 FR 16448, April 10, 2009), section 114(a)(1) of the CAA authorizes the Administrator to require emissions sources, persons subject to the CAA, manufacturers of control or process equipment, or persons whom the Administrator believes may have necessary information to monitor and report emissions and provide such other information the Administrator requests for the purposes of carrying out any provision of the CAA. For further information about EPA's legal authority, *see* the preambles to the proposed and 2009 Final MRR.[2]

D. How would these amendments apply to 2011 reports?

EPA is planning to address the comments on these proposed amendments and publish the final amendments before the end of 2010. Therefore, reporters would be expected to calculate emissions and other relevant data for the reports that are submitted in 2011 using the 2009 Final MRR as amended. We have determined that it is feasible for the sources to implement these changes for the 2010 reporting year since the revisions primarily provide additional clarifications regarding the existing regulatory requirements, generally do not affect the type of information that must be collected and do not substantially affect how emissions are calculated.

For example, many proposed revisions simply provide additional information to provide additional clarity on existing requirements. For example, in subpart E (Adipic Acid Production) we are proposing to clarify that the location of the testing point for determining the emission factor can occur before or after N_2O abatement technology as long as the destruction efficiency of the N_2O abatement technology is properly accounted for. This proposed clarification is consistent with clarifications EPA has issued in response to industry questions and would not change how facilities collected data during 2010. In subpart K, clarifying text is proposed in § 98.112 to ensure that facilities calculate CH_4 emissions for all ferroalloys included in Table K–1. Again, this clarification does not change the rule requirements for facilities collecting data in 2010 as the requirement was already clear in § 98.113(d).

Some proposed amendments are to the data reporting requirements to provide additional clarity on the level of reporting for a specific parameter (*e.g.,* unit level or facility level). For example, in subpart CC (Soda Ash Manufacturing) we are proposing to clarify that reporting is by soda ash manufacturing line. While the data reporting requirements in the 2009 Final MRR could have been misinterpreted, the calculation methods in § 98.293 are very clear that emissions calculations are by manufacturing line. EPA has concluded that amendments such as these can be implemented for the reports submitted to EPA in 2011 because the proposed changes are consistent with the calculation methodologies in the 2009 Final MRR and the owners or operators are not required to actually report until March 2011, several months after we expect this proposal to be finalized.

For some subparts, we propose amendments to address issues identified as a result of working with the affected sources during rule implementation. These proposed revisions provide additional flexibility to the sources. Thus, while they would be free to use the amended regulations once final, facilities are not required to follow the amendments for 2010 data collection. For example, in subpart H, cement production, facilities are provided an additional approach for calculating the weight fraction of total calcium oxide and total magnesium oxide in clinker. Some facilities were already determining their weight fraction following this method. In some cases, these facilities may have been following both their current practice during 2010 data collection, as well as the method required by the 2009 Final MRR. With these proposed amendments, these facilities would have the option, but not be required, to use the newly proposed option for the reports submitted to EPA in 2011.

EPA is also proposing corrections to terms and definitions in certain equations. For example, in subpart NN, Suppliers of Natural Gas and Natural Gas Liquids, we are proposing to clarify in an equation that the fuel-specific emission factor should be developed for NGL product "g". It was clear from the rest of the equation that the mass emissions should be developed for each NGL product "g", but this phrase was omitted from the definition of EF_g. Other examples are found in similar clarifications made in subpart P (Hydrogen Production) and subpart S (Lime Production). These clarifications do not result in additional requirements therefore EPA has concluded that reporters can follow the 2009 Final MRR, as amended, in submitting their first reports in 2011.

Finally, EPA is proposing other technical corrections (example correcting cross references) that have no impact on facility's data collection efforts in 2010.

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[1] Consolidated Appropriations Act, 2008, Public Law 110–161, 121 Stat. 1844, 2128.

[2] 74 FR 16448 (April 10, 2009) and 74 FR 56260 (October 30, 2009).

In summary, these amendments would not require any additional monitoring or information collection above what was already included in the 2009 Final MRR. Therefore, we expect that sources can use the same information that they have been collecting under the 2009 Final MRR for each subpart to calculate and report GHG emissions for 2010 and submit reports in 2011 under the amended subparts.

EPA generally seeks comment on the conclusion that it is appropriate to implement these amendments and incorporate the requirements in the data reported to EPA by March 31, 2011. Further, we seek comment on whether there are specific subparts for example, subpart MM, where this timeline may not be feasible or appropriate due to the nature of the proposed changes or the way in which data have been collected thus far in 2010. We request that commenters provide specific examples of how the proposed implementation schedule would or would not work.

II. Technical Corrections and Other Amendments

Following promulgation of the 2009 Final MRR, EPA has identified errors in the regulatory language that we are now proposing to correct. These errors were identified as a result of working with affected industries to implement the various subparts of the 2009 Final MRR. We have also identified certain rule provisions that should be amended to provide greater clarity.

The amendments we are now proposing include the following types of changes:

- Changes to correct cross references within and between subparts.
- Additional information to better or more fully understand compliance obligations in a specific provision, such as the reference to a standardized method that must be followed.
- Amendments to certain equations to better reflect actual operating conditions.
- Corrections to terms and definitions in certain equations.
- Corrections to data reporting requirements so that they more closely conform to the information used to perform emission calculations.
- Other amendments related to certain issues identified as a result of working with the affected sources during rule implementation and outreach.

We are seeking public comment only on the issues specifically identified in this notice for the identified subparts. We will not respond to any comments addressing other aspects of the 2009 Final MRR or any other related rulemakings.

A. Mobile Sources

Manufacturers of highway heavy-duty vehicles, as well as manufacturers of highway heavy-duty engines, are subject to GHG reporting requirements as proposed (*see* Section V.QQ.3.d starting on page 16589 of the proposed rule preamble), and as stated in the preamble for the 2009 Final MRR (*see* Table IV–1 on page 56353 of the final rule preamble). EPA inadvertently omitted the regulatory text covering manufacturers of highway heavy-duty vehicles. We are proposing to amend 40 CFR part 86 to correct that error by incorporating the appropriate language into the regulations at 40 CFR 86.1844–01.

B. Subpart A—General Provisions

We are proposing to add or change several definitions to subpart A, to clarify terms used in other subparts of the 2009 Final MRR. Similarly, we are proposing to amend 40 CFR 98.7 (incorporation by reference) to accommodate changes in the standard methods that are allowed by other subparts of the rule.

We are proposing to amend the following definitions in 40 CFR 98.6:

- Carbonate-based mineral,
- Carbonate-based mineral mass fraction,
- Carbonate-based raw material,
- Crude oil, and
- Gas collection system or landfill gas collection system.

We are proposing to amend the definitions of “carbonate-based mineral”, “carbonate-based mineral mass fraction” and “carbonate-based raw material” in order to include barium carbonate and potassium carbonate. These carbonates were not included in the 2009 Final MRR; however, EPA has since learned that these are consumed in the glass industry subject to subpart N. Therefore, we are proposing emission factors for these carbonates in subpart N and, for consistency, we are proposing to concurrently amend these definitions in 40 CFR 98.6.

We are proposing to amend the definition of “crude oil” in 40 CFR 98.6 to be identical to the definition in the Energy Information Administration’s (EIA) *Definitions of Petroleum Products and Other Terms (Revised January 2010).*[3] As indicated by our definition of crude oil in the Notice of Proposed Rulemaking (74 FR 16448), our intention is to collect information under 40 CFR 98.396(a)(20) on certain hydrocarbons from sources that are not liquid while underground as well as those that are liquid underground. We changed the definition of crude oil after proposal in response to a comment suggesting that the proposed definition could be interpreted to include natural gas (*see* comment EPA–HQ–OAR–2008–0508–0631.1, excerpt 36 in Volume 13: Subpart A: Definitions, Incorporation by Reference, and Other Subpart A Comments). In making this change after proposal, we inadvertently limited the definition of crude oil in the 2009 Final MRR to hydrocarbons that exist in a liquid phase underground. We are proposing to correct this error in today’s action. We also expect to increase clarity and reduce administrative burden for reporters by proposing to use EIA’s definition of “crude oil,” which many reporters already use to track crude oil for EIA’s petroleum supply surveys.

We received several questions as to whether passive vents or flares are considered part of a landfill gas collection system at a municipal solid waste landfill. To clarify that the passive vents/flares are not considered part of a landfill gas collection system for purposes of subpart HH, we are proposing to amend the definition of “gas collection system or landfill gas collection system,” in 40 CFR 98.6 to state that such a system collects gas by means of a fan or similar mechanical, versus passive, draft equipment.

We are also proposing to amend the definition of “Mscf” in 40 CFR 98.6 to indicate that “Mscf” means thousand standard cubic feet, and not, as incorrectly stated in the 2009 Final MRR, a million standard cubic feet.

We also are proposing to amend the definition of “non-crude feedstocks” in 40 CFR 98.6 to remove the phrase “as a feedstock” in order to avoid confusion with the definition of “feedstock.” Under subpart MM, refiners must calculate annual CO_2 emissions that would result from the complete combustion or oxidation of each non-crude feedstock. Our intention in subpart MM is to capture all petroleum products and natural gas liquids that enter a refinery to be further refined or otherwise used on site, including supplemental fuel burned to provide heat or thermal energy. The definition of “feedstock” in 40 CFR 98.6 excludes supplemental fuel burned to provide heat or thermal energy. By removing the term “as a feedstock” from the definition of “non-crude feedstock” and adding “including supplemental fuel burned to provide heat or thermal energy,” the proposed amendments align the

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[3] *http://www.eia.doe.gov/pub/oil_gas/petroleum/survey_forms/psmdefs_2010.pdf.*

definition to the original intent of the rule.

Additional amendments to definitions are proposed in the relevant subparts.

Today's proposal would also correct an error in the title of a method incorporated by reference in 40 CFR 98.7 for subpart Z, which would be updated to reflect the correct title, "Association of Fertilizer and Phosphate Chemists Analytical Methods Manual, 10th Edition." We are also proposing to incorporate by reference ASTM D6349–09, "Standard Test Method for Determination of Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma—Atomic Emission Spectrometry" for subpart N.

C. Subpart E—Adipic Acid Production

We are proposing to amend Equations E–1, Equation E–2 and Equation E–3 in 40 CFR 98.53. First, we are proposing to amend these equations so that the calculation equations are internally consistent. Currently, the equations do not correctly address situations in which a facility has more than one production unit or process line with separate N_2O control or abatement technology on the separate production units or process lines, and the technologies are not operated 100 percent of the time. In these circumstances, the current equations will not provide an accurate calculation of N_2O emissions. We are proposing to amend the equations so that emissions would be calculated separately for each production unit or process line (or groups of units or lines) that has a separate control or abatement technology, and then sum the emissions for all such units or lines to determine the overall N_2O emissions for the facility. For consistency with these amendments, we are also proposing amendments to 40 CFR 98.54(a), 98.56(j), and 98.57(c) for monitoring and QA/QC, reporting, and recordkeeping, respectively.

We are also proposing to amend equation E–3 to accommodate N_2O abatement technology located after the emission test (sampling) point, and re-designate it as equation E–3a. We are also proposing to add a new equation E–3b for facilities that do not have any N_2O abatement technology located after the test (sampling) point.

Second, we are proposing to amend the language in 40 CFR 98.54(a)(3) and 98.56(k) regarding the Administrator approved alternative method to clarify that this alternative method is for determining N_2O emissions rather than N_2O concentration. Also, we are proposing to amend the language in 40 CFR 98.54(a)(1), (e), and (f) concerning the location of the test (sampling) point used for the performance test and to clarify when the performance test should be conducted. As promulgated, the language can be misconstrued that EPA is requiring the facility to shut down any N_2O abatement technology during the performance testing. This was not intended because many, if not all, of the N_2O abatement technologies in use are mandatory according to the facility operating permit. The proposed amendments would clarify that testing can occur before or after N_2O abatement technology as long as the destruction efficiency of the N_2O abatement technology is properly accounted for. Finally, we are proposing to clarify under 98.57(f) that facilities should retain records of all data collected during performance tests, not just the calculated emission factor.

D. Subpart H—Cement Production

We are proposing to amend 40 CFR 98.84(b) to correct the most recent ASTM standard, to ASTM C114–09 rather than C114–07, for determining the weight fraction of magnesium oxide (MgO) and calcium oxide (CaO) in clinker. In addition we have learned through questions from reporters, that for some facilities it is more efficient to sample clinker for the weight fraction of total MgO and CaO as it exits the kiln rather than from bulk storage. Some facilities do perform this analysis on clinker on a daily basis. We are proposing to amend the rule to allow facilities the option to determine a monthly value based on the arithmetic average of the daily samples.

Through reporters we have also learned that facilities use direct measurement in conjunction with other factors (*e.g.* kiln feed) to determine clinker production. These procedures are verified periodically for accuracy. We are proposing to amend 40 CFR 98.84(d) to allow facilities to use these procedures already used for measuring clinker produced and verify those on a monthly basis. Facilities are already required to measure clinker on a monthly basis. Concurrent with this change, we are proposing to amend 40 CFR 98.86(b) so that facilities that do not estimate combined process and combustion emissions using continuous emission monitoring systems (CEMS) will be required to report the kiln specific feed-to-kiln ratios used to calculate clinker produced for EPA verification of emissions associated with clinker production.

Further, we understand from facilities' questions that an analysis of the organic carbon contents of raw materials could be determined from a composite sample of the kiln feed or from sampling each raw material in the kiln feed depending on the existing sampling methods and raw material storage procedures at the facility. We are proposing to amend the calculation and monitoring procedures in 40 CFR 98.83(d)(3) and 98.84(c) to allow facilities the option to use either sampling procedure for estimating carbon dioxide (CO_2) emissions from raw materials.

We are also proposing to correct and clarify the recordkeeping requirements under 40 CFR 98.87(a) and (b) for facilities with CEMS and for facilities without CEMS. In the 2009 Final MRR, the recordkeeping requirements listed under 40 CFR 98.87(a)(1) and (a)(2) should have been listed under 40 CFR 98.87(b). Facilities using CEMS to estimate combined process and combustion CO_2 emissions from kilns do not need to calculate process emissions using the clinker based emissions methodology provided in Subpart H and, therefore, would not have the relevant records requested in 40 CFR 98.87(a)(1) and (a)(2).

E. Subpart K—Ferroalloy Production

We are proposing to amend 40 CFR 98.112(a) to be consistent with the requirement described in 40 CFR 98.113(d) and in the preamble of the 2009 Final MRR to calculate methane (CH_4) emissions from an electric arc furnace (EAF) used for the production of all ferroalloys for which an applicable CH_4 emission factor is provided in the rule. These alloys and the associated CH_4 emission factors are listed in Table K–1. The 2009 Final MRR contained calculation and reporting procedures for quantifying process CH_4 emissions from all ferroalloys listed in Table K–1, but CH_4 was inadvertantly not included in the GHG's to Report section.

We are also proposing to amend the introductory language for 40 CFR 98.113 to clarify the applicability of the procedures for calculating CO_2 and CH_4 emissions in that section. Finally, we are proposing minor amendments to the language in 40 CFR 98.116 to clarify that the data reporting requirements in 40 CFR 98.116(b) are for each EAF and those in 40 CFR 98.116(d)(1) and (e)(1) are for any ferroalloy product identified in 40 CFR 98.110. We are also proposing to amend 40 CFR 98.116(d) to correct an incorrect cross-reference to 40 CFR 98.36.

F. Subpart N—Glass Production

We are proposing to amend subpart N to add CO_2 emission factors to Table N–

1 for barium carbonate and potassium carbonate. These raw materials were not included in the 2009 Final MRR, but EPA has since learned that they are also used by the glass industry. EPA is requesting comment on whether the proposed amendments to Table N–1 are sufficient or if other raw materials or carbonaceous materials are used in glass manufacturing that should be included in the rule in Table N–1 with their associated emission factors. EPA has also learned from reporters that there is another more commonly used method for determining the carbonate mineral mass fraction of raw materials used in glass production. EPA proposes to amend the rule in 40 CFR 98.144(b) to allow for another ASTM method. Specifically, in addition to ASTM D3682–01, reporters could also use ASTM D6349–09, "Standard Test Method for Determination of Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma—Atomic Emission Spectrometry." We are also proposing to amend the introductory language to 40 CFR 98.146(a) to correct an incorrect cross-reference to 40 CFR 98.36 and to clarify in 40 CFR 98.146(a)(2) that reporting of glass production is by furnace and from all furnaces combined, consistent with the calculation methods. We are proposing to amend 40 CFR 98.146(b)(7) and (9) to correct typographical errors.

G. Subpart O—HCFC–22 Production and HFC–23 Destruction

We are proposing to amend 40 CFR 98.154(k), the requirement to monitor HFC–23 emitted from process vents, to refer to Equation O–7 rather than the incorrect Equation O–6. In 40 CFR 98.154(k), (l), and (o) and in 40 CFR 98.156(b), we are proposing to amend the language so that the term "destruction device" is used rather than the narrower term "thermal oxidizer."

We are proposing to amend the reporting requirements in 40 CFR 98.156(c) and (d) to clarify that only facilities that are required to recalculate the destruction efficiency of their destruction device under 40 CFR 98.154(l) must report the flow rate of HFC–23 being fed into the destruction device, the flow rate at the outlet of the destruction device, and the emission rate of the device. In addition, such facilities would be required to report the newly calculated DE of the device, the HFC–23 concentration measurement used in the DE calculation, and whether 40 CFR 98.154(l)(1) or (l)(2) was used for the calculation. Under these two paragraphs, other HFC–23 destruction facilities would be required to report only the results of their annual measurement of the HFC–23 concentration at the outlet of the destruction device. Facilities that conduct the annual measurement of the HFC–23 concentration only at the outlet of the destruction device would be required to report the results of the annual measurement.

We are proposing to amend the reporting requirements in 40 CFR 98.156(e) to clarify that the one-time report for HFC–23 destruction facilities is due by March 31, 2011 or within 60 days of commencing HFC–23 destruction. The proposed amendment will make the due date in 40 CFR 98.156(e) consistent with the due date for a similar report required in Subpart OO.

In general, these proposed amendments to the reporting requirements for HFC–23 destruction facilities would make them consistent with the monitoring requirements for these facilities. The proposed due dates for the one-time report are consistent with those elsewhere in the 2009 Final MRR for the source categories that are required to begin monitoring in 2010.

H. Subpart P—Hydrogen Production

We are proposing amendments to clarify the definition of the source category in 40 CFR 98.160(c). The original language in the 2009 Final MRR indicated that the hydrogen production source category included hydrogen production processes located within petroleum refineries. The intent of the 2009 Final MRR was that hydrogen production facilities located within facilities that are not petroleum refineries were also included within the definition of the source category. We are proposing to amend 40 CFR 98.160(c) to clarify that hydrogen production facilities located within other facilities are also included in the source category if they are not owned by, or under the direct control of, the other facility's owner and operator. This clarification was necessary to correct a misunderstanding that the original rule text limited the source universe to hydrogen production facilities located within petroleum refineries.

Broadly, we are proposing to amend subpart P to remove several references to "process" CO_2 emissions. EPA received information from industry indicating that the use of the term "process" in the context of calculating and reporting CO_2 emissions resulted in confusion in differentiating between process and combustion emissions. We are proposing to clarify the text in the rule by removing references to the term "process" from the rule language.

We are proposing to remove the requirements in 40 CFR 98.162(b) for owners or operators to report CO_2, CH_4 and N_2O combustion emissions from each hydrogen production process unit using the emissions calculation methods in subpart C. This provision results in double counting of combustion-related emissions from hydrogen production process units, as these combustion emissions are already accounted for when following the calculation methods in 40 CFR 98.163(a) or (b). CO_2 emissions would still be reported under 98.162(a) using the procedures in 98.163(a) or 98.163(b).

We are also proposing to amend language describing the calculation of GHG emissions from gaseous, liquid and solid fuels and feedstocks in 40 CFR 98.163. The clarified language would specify that each gaseous, liquid or solid fuel and feedstock would need to be calculated based on its respective equations detailed in the rule language. This removes the concern that the current language was unclear as to which fuel and feedstock stream would be used to calculate CO_2 emissions.

Lastly, we are proposing to amend 40 CFR 98.166(c) to strike "quarterly" and "kg" (kilogram). Some facilities subject to subpart P may also be subject to subpart PP—Suppliers of Carbon Dioxide. Quarterly reporting of CO_2 quantities (in kilograms) was not consistent with subpart PP.

I. Subpart Q—Iron and Steel Production

We are proposing to amend the subpart Q requirements regarding emissions from flares to clarify the requirements and correct certain deficiencies in the rule pertaining to flares burning off-gases from argon-oxygen decarburization (AOD) and other decarburization processes. Section 98.172(b) of the 2009 Final MRR required reporting of CO_2 emissions from flares using procedures from subpart Y (Petroleum Refineries), without distinguishing flares burning off-gases from AOD or other decarburization processes from other types of flares.

The referenced equations in subpart Y and the further instructions in 40 CFR 98.172(b) in the 2009 Final MRR are applicable to estimating emissions from burning coke oven gas or blast furnace gas, but are not applicable for estimating emissions from flares burning the off-gases from AOD or other decarburization processes. We are, therefore, proposing to amend the language in 40 CFR 98.172(b) to clarify that for subpart Q facilities, flare emissions must be estimated only for flares burning blast furnace gas or coke oven gas. Similarly, we are proposing to amend the introductory text in 40 CFR 98.175 to specify that the missing data procedures in subpart Y (Petroleum Refineries) at 40 CFR 98.255(b) must be followed for flares burning coke oven gas or blast furnace gas. We are also proposing to amend the introductory text for the data reporting requirements in 40 CFR 98.176 to include flares burning coke oven gas or blast furnace gas.

Subpart Q in the 2009 Final MRR also referenced incorrect equations from subpart Y. We are proposing to amend and correct the references in 40 CFR 98.172(b) to the subpart Y flare equations. Equations Y–2 and Y–3 are the correct equations; the promulgated subpart Q incorrectly referenced Equation Y–1.

We are proposing to amend the reporting requirements in 40 CFR 98.176(e)(3) to clarify that fuel consumption needs to be reported separately for each type of fuel and other process input and output material. We are also proposing to add paragraphs (g) and (h) to 40 CFR 98.176. Paragraph (g) would require facilities to report the annual amount of coal charged to coke ovens because it is used to estimate CO_2 emissions from coke pushing. Paragraph (g) would incorporate the same reporting requirements specified in 40 CFR 98.256(e) of subpart Y (Petroleum Refineries) for flares burning coke oven gas or blast furnace gas.

We are proposing to amend the recordkeeping requirements in 40 CFR 98.177(d) to clarify the units and processes for which annual operating hours need to be recorded.

We are also proposing to amend the requirements in the promulgated rule to estimate GHG emissions from argon-oxygen decarburization vessels to clarify that they also apply to any other type of vessel used to remove carbon from molten steel (decarburization) and result in the venting of similar GHG. The promulgated rule would have required reporting of these alternative vessel emissions as part of flare emissions. Because of the proposed clarification noted above to limit the flare emission calculations to only those flares burning coke oven gas or blast furnace gas, we are proposing to replace the term “argon-oxygen decarburization vessels” with the term “decarburization vessels” throughout the rule and to replace the definition of “argon-oxygen decarburization vessels” with a definition for “decarburization vessels” in order to maintain reporting of the CO_2 emissions from these vessels.

J. Subpart S—Lime Manufacturing

We are proposing to amend the cross reference to 40 CFR 98.193(b)(1) in the introductory language to 40 CFR 98.195; it incorrectly referenced 40 CFR 98.193(b)(2).

We are also proposing to amend the terminology used throughout subpart S to clarify whether the calculation and reporting requirements are referring to calcined byproducts and waste materials by adding the word “calcined” to the lime byproduct and waste terminology, as needed. We are also proposing amendments to the terminology in the subpart to clarify when the calculation and reporting requirements apply to lime products that are produced at the facility.

K. Subpart V—Nitric Acid Production

We are proposing to amend 40 CFR 98.223 and 98.224 to clarify how N_2O emissions are to be measured if a facility has an N_2O abatement device. The first amendment concerns the language for the location of the test (sampling) point used for the performance test in several paragraphs in 40 CFR 98.223. As promulgated, the language could be misconstrued to require the nitric acid facility to shut down any N_2O abatement technology during the performance testing. This was not the intention as many, if not all, of the N_2O abatement technologies are mandatory according to the facility operating permit. The proposed amendments would clarify that testing can occur before or after N_2O abatement technology as long as the destruction efficiency is properly accounted for.

We are also proposing to include a new Equation V–3b for facilities that do not have N_2O abatement technology located after the test (sampling) point. Equation V–3 would be redesignated as Equation V–3a, and would also be corrected so that the term on the left-hand side of the equation would be changed from EF_{N_2Ot} to E_{N_2Ot}.

In addition we are proposing to clarify in 40 CFR 98.223 that the annual performance test must be conducted for each nitric acid train, consistent with the equations in 40 CFR 98.223. Additional changes are being proposed for the monitoring requirements in 40 CFR 98.224 to conform to the changes in the calculation methods being proposed in 40 CFR 98.223. We are proposing to amend 40 CFR 98.224(a)(1) to clarify when during a nitric acid production campaign facilities must conduct the performance test.

We are also proposing to amend the language concerning the Administrator-approved alternative method for determining N_2O emissions in 40 CFR 98.223(a)(2)(ii), 98.224(a)(3), and 98.226(n). The alternative method is for determining N_2O emissions rather than N_2O concentration or an N_2O emission factor. The language has been changed to correct this point.

We are proposing to amend the data reporting requirements in 40 CFR 98.226(g) and (m) to be consistent with the calculation methods which are for each nitric acid train, not the facility.

L. Subpart Z—Phosphoric Acid Production

We are proposing to amend subpart Z to correct the title of the reference to the standard bulk sampling and analysis method in 40 CFR 98.6, and 40 CFR 98.264(a) and (b). The reference in the 2009 Final MRR currently reads, “Phosphate Mining States Methods Used and Adopted by the Association of Fertilizer and Phosphate Chemists AFPC Manual 10th Edition 2009—Version 1.9.” This reference would be revised to read the “Association of Fertilizer and Phosphate Chemists Analytical Methods Manual 10th Edition,” which reflects the correct title of the document.

We have learned from facilities that the AFPC manual does not currently contain a procedure for obtaining a representative grab sample of rock for testing, but that it will in the future. We are proposing to amend 40 CFR 98.264(a) to allow facilities to use the appropriate industry consensus standards currently available, in addition to the AFPC manual. We are also proposing to amend 40 CFR 98.264(a) to clarify that the grab sample must be collected prior to entering the mill for accurate analysis of inorganic carbon contents.

We are proposing to amend 40 CFR 98.266 to correct a cross reference in the introductory text of that section, and to revise paragraph (c) to clarify that the annual arithmetic average percent inorganic carbon in phosphate rock is to be reported as the percent by weight, expressed as a decimal fraction. We are also proposing to add a new paragraph (f)(9) to 40 CFR 98.266 to specify that facilities need to report the total annual process CO_2 emissions from the phosphoric acid production facility, in metric tons. Facilities must calculate these emissions already in 40 CFR 98.263(b)(2) using Equation Z–2.

M. Subpart CC—Soda Ash Manufacturing

We are proposing to amend the data reporting requirements in 40 CFR 98.296(b)(3) to clarify that the annual soda ash production is reported for each line, and to make the reporting requirements consistent with the calculation requirements in 40 CFR 98.293(b)(1) through (b)(3). The units in 40 CFR 98.296(a)(1) and 40 CFR 98.296(b)(6) would be corrected from metric tons to short tons for consistency with other similar data reporting requirements. This change is also consistent with how facilities collect these data.

We are also proposing to amend 40 CFR 98.296(b)(10) to clarify that the information in that paragraph is reported for each manufacturing line or stack, when using a site specific emission factor, and to clarify that the elements required by 40 CFR 98.296(b)(10)(i), (ii), and (iv) are for the periods during the performance test. We are also proposing to delete 40 CFR 98.296(b)(11)(iv), (v), and (vi) because those paragraphs describe missing data procedures for elements during the site-specific emission factor performance test which are not allowed to be missing per 40 CFR 98.296(c).

N. Subpart EE—Titanium Dioxide Production

We are proposing to amend the monitoring and QA/QC reporting requirements in 40 CFR 98.314(e) to clarify that the quantity of carbon-containing waste generated from each titanium dioxide production line is determined on a monthly basis, consistent with the calculation procedures in 40 CFR 98.313(b)(3). In addition, we are proposing to amend the data reporting requirements under 40 CFR 98.316(b)(9) to be consistent with the calculation and monitoring alternative requirements of 40 CFR 98.313(b)(2) and 40 CFR 98.314(c) by removing the restriction that the carbon content factor for petroleum coke can only be from the supplier. We are also proposing to amend the data reporting requirements under 40 CFR 98.316(b)(11) to clarify that they apply to each process line, consistent with the calculation and monitoring alternative requirements of 40 CFR 98.313(b)(3) and 40 CFR 98.314(f).

O. Subpart GG—Zinc Production

We are proposing to amend the definitions of the terms for $(\mathrm{Electrode})_k$ and $(C_{\mathrm{Electrode}})_k$ in Equation GG–1 to remove the references to kilns because electrodes are only used in electrothermic furnaces and are not used in Waelz kilns. We are also proposing to amend 40 CFR 98.336(a) to correct a cross reference to subpart C, and to amend 40 CFR 98.336(b)(1) to clarify that identification numbers need to be reported for both Waelz kilns and electrothermic furnaces.

We are proposing to amend the data reporting requirements in 40 CFR 98.336(b)(7) and (10) to clarify that the carbon content of each input to a kiln or furnace should be reported as a calculation parameter regardless of whether the data are collected from the supplier or by self measurement. In 40 CFR 98.336, paragraphs (b)(8) and (11) already require facilities to report whether carbon contents were determined through self measurement or based on reports from the supplier.

P. Subpart HH—Municipal Solid Waste Landfills

We are proposing numerous clarifying amendments and technical corrections to subpart HH to address questions EPA has received about the rule's requirements and to correct known errors. Technical amendments to the rule are also proposed to address some of the more significant questions that were the result of insufficient detail being provided in the rule.

Source Category Definition. We are proposing to amend 40 CFR 98.340(b) to read, "This source category does not include Resource Conservation and Recovery Act (RCRA) Subtitle C or Toxic Substances Control Act (TSCA) hazardous waste landfills, dedicated construction and demolition waste landfills, or industrial waste landfills." This change would clarify the types of landfills that are not included in the MSW landfill source category. We are further proposing to add definitions within 40 CFR 98.348 for the terms "dedicated construction and demolition waste landfills" and "industrial waste landfills" to further clarify what is meant by these excluded landfill types. These definitions are from 40 CFR 257.2 (Criteria for Classification of Solid Waste Disposal Facilities and Practices).

Equation HH–1. We are proposing the following technical amendments to Equation HH–1 in 40 CFR 98.343:

- Replace the term L_0 (CH_4 generating potential) with the terms, "$MCF \times DOC \times DOC_F \times F \times 16/12$," (where MCF is the CH_4 correction factor; DOC is the degradable organic content; DOC_F is the fraction of DOC dissimilated; and F is the fraction by volume of CH_4 in landfill gas) and remove the definition of the term L_0 from the definitions for Equation HH–1 as it no longer appears in the equation. This change provide clarity of terms and does not affect the way in which the methane generation rate is calculated by equation HH–1 since the new terms were already contained in the definition of L_0.
- Revise the definition of "S" to read, "Start year of calculation. Use the year 1960 or the opening year of the landfill, whichever is more recent," for clarity.
- Revise the definition of W_x to include "measurement data" as follows: "Quantity of waste disposed of in the landfill in year x from measurement data, tipping fee receipts, or other company records (metric tons, as received (wet weight))" to include the use of measurement data with the other methods specified.
- Revise the definition of "MCF" to read "Methane correction factor (fraction). Use the default value of 1," to clarify that the default factor of 1 must be used.
- Revise the definition of "DOCf" to read, "Fraction of DOC dissimilated (fraction). Use the default value of 0.5," to clarify that the default factor of 0.5 must be used.
- Revise the definition of "F" to clarify that F is determined on a dry basis as follows: "Fraction by volume of CH4 in landfill gas from measurement data on a dry basis, if available (fraction); default is 0.5," for clarification.
- Revise the definition of "k" to read, "Rate constant from Table HH–1 of this subpart (yr-1). Select the most applicable k value for the majority of the past 10 years (or operating life, whichever is shorter)," to clarify that k is not a measured value and that the selection of k should be based on precipitation and leachate recirculation rates over the past 10 years.

We are also proposing to amend 40 CFR 98.343(a)(2) to replace "use the bulk waste parameter values for k and L0 in Table HH–1" with "use the bulk waste parameter values for k and DOC in Table HH–1," to be consistent with the proposed changes to Equation HH–1.

Measuring Waste Quantity. We are proposing to amend 40 CFR 98.343(a) by adding a new paragraph (a)(3) that serves to provide the necessary detail and clarification on the requirements for measuring the quantity of waste disposed in the landfill beginning with the first monitoring year (2010 or later, hereafter referred to as "monitoring years"), and re-designating the existing 40 CFR 98.343(a)(3) as (a)(4).

The proposed waste measurement requirements for the monitoring years would require the use of scales when scales are in-place for all vehicles or containers delivering waste, except passenger vehicles and light duty pick-up trucks. Passenger vehicles and light duty pick-up trucks contribute only a small fraction of the total waste landfilled, but they significantly contribute to the total number of vehicles entering and exiting the landfill. As such, most landfills do not weigh individual passenger vehicles or light duty pick-up trucks. Instead, they commonly charge these customers a flat tipping fee. Requiring each of these vehicles to be weighed both in and out of the landfill would create a significant time and recordkeeping burden on the landfill owner or operator which was not included in the cost and economic impact analysis for subpart HH. Furthermore, we find that such a requirement is not appropriate because the significant increase in labor costs will not significantly reduce the uncertainty in the mass of waste landfilled. This is, in part, due to the small contribution these loads make on the total quantity of waste landfilled and, in part, due to the fact that these vehicles often have small loads relative to the vehicle weight so the direct measurements have greater uncertainty for small loads than they do for larger loads.

When scales are present at the MSW landfill, they must be used, (except for passenger vehicles and light duty pick-up trucks). Two options for the use of scales are included in this proposal. One option is to directly weigh each vehicle/container load as it enters the landfill and weigh each vehicle/container after the waste has been off-loaded, and calculate the mass of waste disposed as the difference in the two measurements. The second option requires the landfill owner or operator to determine tare weights (empty vehicle weights) for representative vehicle types. In this option, the landfill owner or operator must weigh the incoming vehicles and containers and calculate the mass of waste disposed based on the difference of the incoming vehicle weight and the tare weight of that vehicle type.

When scales are not in place, the working capacity or the mass of waste per type of vehicle or container must be determined. These measurements may include determining the volumetric capacity of representative containers and the average density of the waste as received. Wheel-load scales or portable axle-load scales may be used for these density determinations or measures of the mass of waste received by type of load. The landfill owner or operator must record the number and type of vehicles that haul waste to the landfill and use the working capacity of the containers to calculate the quantity of waste landfilled.

While we originally assumed that scales would be present at all MSW landfills, some reporters indicated that this is not the case. After careful review of the 2009 Final MRR and its technical record, it appears the intended requirement to use scales is not clearly defined in the 2009 Final MRR and no details were provided as to how such measurements using scales were to be made. Furthermore, the definition of "W_X" in Equation HH–1 stated that "W_X = Quantity of waste disposed in the landfill in year x from tipping fee receipts or other company records." This definition does not suggest a need to perform direct mass measurements. This definition was intended to allow use of tipping fee receipts or company records for the years prior to the first reporting year, but can also be interpreted to allow these same records to be used in the reporting year. While 40 CFR 98.343(a)(3) in the 2009 Final MRR provided methods for "years prior to reporting for which waste disposal quantities are not readily available," there were no specific instructions for measurement methods for waste disposal quantities in the reporting year.

For the few landfills that do not have scales, the cost of installing scales was evaluated. According to one of the commenters, the capital cost of installing scales could be as much as $50,000 per scale, with operating and driver time resulting in an estimated annualized cost of over $23,000. We also considered the uncertainty associated with different waste quantity measuring methods and their resulting uncertainty in the overall modeled methane generation. Relative to the uncertainty of the other model parameters, requiring all landfills to have scales for mass measurements would not significantly reduce the overall uncertainty in the modeled methane generation. Given the significant additional costs for requiring the installation of scales at a landfill and the limited improvement in the uncertainty of the reported methane emissions, we are proposing to allow the use of "truck counts and capacities" as an acceptable method of determining waste quantity landfilled.

In addition, we are proposing to redesignate paragraph (a)(3) of 40 CFR 98.343 to (a)(4) and to amend that paragraph and the sub-paragraphs to clarify that measurement data can be used for historical years when the data are available. We are proposing to clarify that the "Historical waste disposal quantities should only be determined once, as part of the first annual report, and the same values should be used for all subsequent annual reports, supplemented by the next year's data on new waste disposal." We are also proposing to amend 40 CFR 98.343(a)(4)(i) to read, "Assume all prior year's waste disposal quantities are the same as the waste quantity in the first year for which waste quantities are available," to properly account for situations when waste quantity data are available for some, but not all, historic years. We are proposing to amend 40 CFR 98.343(a)(4)(iii) by revising the phrase, "*i.e.,* from first accepting waste," with "*i.e.,* from the first year accepting waste," to enhance the meaning of that sentence.

In related amendments, we are also proposing to amend 40 CFR 98.344(a) to clarify the requirements for measurement equipment by stating that "Mass measurement equipment used to determine the quantity of waste landfilled on or after January 1, 2010 must meet the requirements for weighing equipment as described in 'Specifications, Tolerances, and Other Technical Requirements For Weighing and Measuring Devices,' NIST Handbook 44 (2009) (incorporated by reference, *see* 40 CFR 98.7)." We are also proposing to amend 40 CFR 98.346(a) to require reporting of "* * * an indication of whether scales are present at the landfill," and to amend 40 CFR 98.346(b) to require reporting of the waste quantities that were determined using scales according to the proposed requirements in 40 CFR 98.343(a)(3)(i) and the waste quantities determined using vehicle counts and load capacities. We are also proposing to amend 40 CFR 98.347 to specifically require that records be maintained of all measurements used to determine vehicle tare weights or working capacities.

Equations HH–2, HH–3, and HH–4. We are proposing the following technical amendments to Equation HH–2 in 40 CFR 98.343:

- Replace the term "WGR_X" with "WDR_X" and remove the term "%SWDS" to simplify the equation since both terms were look-up values and the product can be expressed as a single value.
- Replace the definition of the term "WGR_X" with "WDR_X = Average per capita waste disposal rate for year x from Table HH–2 of this subpart (metric tons per capita per year, wet basis; tons/cap/yr)," for consistency with the revisions of Equation HH–2.
- Delete the definition of the term "%SWDS" for consistency with the revisions of Equation HH–2.
- Delete the word "of" from the definition of "POP_X" to correct a grammatical error.

We are proposing the following technical amendments to Equation HH–3 in 40 CFR 98.343:

- Replace the term “WDR_X” with “W_X” for consistency with the same term as expressed in Equation HH–1.
- Replace the definition of the term “WDR_X” with “W_X = quantity of waste place in the landfill in year x (metric tons/wet basis),” for consistency with the same term as expressed in Equation HH–1.
- Replace the definition of LFC with “Landfill capacity or, for operating landfills, capacity of the landfill used (or the total quantity of waste-in-place) at the end of the year prior to the year when waste disposal data are available from design drawings or engineering estimates (metric tons),” for clarity.

We are proposing the following technical amendments to Equation HH–4 and the related 40 CFR 98.343(b):

- Amend Equation HH–4 and the terms in that equation to more clearly allow for daily averages (365 or 366 per year) from a continuous CH_4 monitoring system, or from weekly sampling (with 52 measurement periods).
- In 40 CFR 98.343(b)(2), delete “* * * at least weekly * * * ” because the measurement frequency is specified in subsequent paragraphs.
- In 40 CFR 98.343(b)(2)(ii) and subparagraphs (A) and (B), replace “no less than weekly” with “once each calendar week, with at least three days between measurements,” to clarify what is meant by weekly sampling.
- In 40 CFR 98.343(c), replace “Calculate * * * ” with “For all landfills, calculate * * * ” to clarify and provide parallel sentence structure.

Moisture Content Measurement. In addition to the other amendments to Equation HH–4 discussed above, we are proposing to amend the moisture content measurement requirements in Equation HH–4. We intended that Equation HH–4 would be calculated on a daily or weekly average basis, but it was not properly codified in the 2009 Final MRR to allow for weekly measurements. Specifically, the instructions to use N=52 for weekly sampling is incorrect given the fixed unit conversion factor for minutes per day. To correct this error, we are proposing to revise the definition of $(V)_n$ to be the cumulative volume for the measurement period (rather than the volumetric flow rate), eliminate the 1,440 conversion factor for minutes per day, and revise the reference to “day” in the definition of equation terms with “measurement period.”

We also received numerous questions regarding the moisture correction term in Equation HH–4, suggesting that the instructions to replace this term with 1 within the definitions of $(V)_n$ and $(C)_n$ were confusing and incomplete.

We intended that moisture content would be determined, if necessary, through measurement data. To address this issue, we are also proposing to amend Equation HH–4 to replace the moisture correction term, $[1-(f_{H2O})_n]$, with a moisture correction factor, K_{MC}. K_{MC} would be defined as “Moisture correction term for the measurement period, volumetric basis,” for three different measurement scenarios:

K_{MC} = 1 if $(V)_n$ and $(C)_n$ are both measured on a dry basis or if both are measured on a wet basis.

KMC = $1 - (f_{H_2O})_n$ if $(V)_n$ is measured on a wet basis and $(C)_n$ is measured on a dry basis.

KMC = $1/[1 - (f_{H_2O})_n]$ if $(V)_n$ is measured on a dry basis and $(C)_n$ is measured on a wet basis.

Equation HH–4 in the 2009 Final MRR did not consider the third scenario for K_{MC}. While we do not anticipate that this scenario of measurements is likely, the proposed amendment is both clearer and more technically correct. We similarly propose to amend 40 CFR 98.343(b)(2)(iii)(B) to clarify that moisture content is needed “If the CH_4 concentration is determined on a dry basis and flow is determined on a wet basis or CH_4 concentration is determined on a wet basis and flow is determined on a dry basis, * * *”.

Additionally, we received numerous inquiries about how reporters are to measure for moisture content, and asking whether measurements were really necessary because no moisture content measurement requirements are in 40 CFR 98.344. To clarfiy how and when reporters are to measure for moisture content, we are proposing to amend 40 CFR 98.344(d) and (e) to include reference to moisture content monitors. Specifically, we are proposing to amend 40 CFR 98.344(d) to read: “All temperature, pressure, and if necessary, moisture content monitors must be calibrated using the procedures and frequencies specified by the manufacturer.” We are also proposing to amend the first sentence in 40 CFR 98.343(d) to read, “The owner or operator shall document the procedures used to ensure the accuracy of the estimates of disposal quantities and, if applicable, gas flow rate, gas composition, temperature, pressure, and moisture content measurements.” These proposed amendments clarify that the moisture content is to be based on measurement values and not assumed moisture content values. We do note that moisture content calculated from wet and dry bulb temperature measurements are a suitable measure of moisture content, but that measurement of dry bulb temperature alone, assuming the gas is saturated with water (*i.e.,* 100 percent relative humidity) is not a direct measure of moisture content, and is not a suitable measurement technique.

In related amendments, we are proposing to amend 40 CFR 98.346(i)(3) and (4) to clarify the reporting requirements for temperature, pressure, and moisture content measurements. Section 98.346(i)(4) in the 2009 Final MRR pertained to pressure measurements, but inadvertently referenced “* * * or indication that temperature is incorporated into internal calculations * * *” We are proposing to amend 40 CFR 98.346(i)(3) to require reporting of both temperature and pressure (not just temperature) and to amend 40 CFR 98.346(i)(4) to require reporting of the moisture content measurements. Together, the proposed amendments to Equation HH–4 and 40 CFR 98.344 and 98.346 would clarify that moisture content need only be determined when the concentration and flow measurements are made on different basis (one wet and one dry) and that, if needed, the moisture content must be measured.

“*Active*” *and* “*Passive*” *Gas Collection Systems.* We are proposing to clarify the difference between “active” gas collection systems and “passive” gas collection systems. Some landfills use “passive” vent flares to control odor. In these “passive” systems, landfill gas flows naturally to the surface of the landfill where an opening or pipe (vent) is installed to allow for natural gas flow. Because of the low and variable flow as well as the number of passive vents that are present at a single landfill, requiring flow meters for these systems is impractical. Furthermore, these systems do not meet the definition of gas collection system in 40 CFR 98.6 because the gas is not collected to a single location. However, to clarify our intent to only require monitoring of “active” gas collection systems, we are proposing to amend the definition of “gas collection system” in 40 CFR 98.6 as described in Section II.B. of this preamble. However, we are interested in understanding the number of landfills with passive vent controls, so we are also proposing to add a reporting requirement in 40 CFR 98.346(h) and (i)(7) for reporters to provide “* * * an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in 40 CFR 98.6) are present at this landfill.”

Other Technical Corrections. We are proposing other technical corrections for subpart HH to correct typographical errors, to correct equations, and to provide minor clarifications.

We are proposing the following technical corrections to 40 CFR 98.344(b):

- Delete the word “install” to clarify that the gas composition monitors do not need to be installed to meet this requirement and to allow use of portable monitoring devices.
- In 40 CFR 98.344(b)(6)(ii), add “at the routine sampling location” to clarify the sampling location.
- Revise 40 CFR 98.344(b)(6)(ii)(A) to read “Take a minimum of three grab samples of the landfill gas with a minimum of 20 minutes between samples and determine the methane composition of the landfill gas using one of the methods specified in paragraphs (b)(1) through (b)(5) of this section” because the sampling location is previously specified and to correct spelling error.
- In 40 CFR 98.344(b)(6)(ii)(B), delete “that is collected and routed to a destruction device (before and teatment equipment)” because the sampling location is previously specified.
- In 40 CFR 98.344(b)(6)(ii)(B), add “for use in Equation HH–4” to the definition of the term CCH4 as follows “Methane concentration in the landfill gas (volume %) for use in Equation HH–4,” for clarity.

In 40 CFR 98.344(c), we are proposing to revise the language to read, “Each gas flow meter shall be recalibrated either biennially (every 2 years) or at the minimum frequency specified by the manufacturer. Except as provided in 40 CFR 98.343(b)(2)(i), each gas flow meter must be capable of correcting for the temperature and pressure and, if necessary, moisture content.” The amended language would conform with the general provisions for calibration of gas flow meters and with other amendments indicating when moisture corrections are necessary.

We are proposing the following technical corrections to 40 CFR 98.346:

- Revise the language in 40 CFR 98.346(a) regarding leachate recirculation to read “an indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 years (*e.g.,* used several times a year for the past 10 years, used at least once a year for the past 10 years, used occasionally but not every year over the past 10 years, not used),” to clarify the reporting requirement.
- In 40 CFR 98.346(d)(1), replace the term, “Degradable organic carbon (DOC) value used in the calculations,” with “Degradable organic carbon (DOC), methane correction factor (MCF), and fraction of DOC dissimilated (DOC_F) values used in the calculations,” to comport with revisions of Equation HH–1.
- Revise 40 CFR 98.346(f)(1) to read, “The surface area of the landfill containing waste (in square meters), identification of the type of cover material used (as either organic cover, clay cover, sand cover, or other soil mixtures). If multiple cover types are used, the surface area associated with each cover type.” This change would clarify the reporting requirement and clarify that an average oxidation fraction does not need to be calculated because the default oxidation fraction must be used.
- Add “for the reporting year” to 40 CFR 98.346(i)(1) as follows: “Total volumetric flow of landfill gas collected for destruction for the reporting year (cubic feet at 520 °R or 60 °F and 1 atm),” to clarify the reporting requirement.
- Add “Annual average” to 40 CFR 98.346(i)(2)as follows: “Annual average CH4 concentration of landfill gas collected for destruction (percent by volume),” to clarify the reporting requirement.
- In 40 CFR 98.346(i)(7), replace the parenthetical “(manufacture, capacity, number of wells, etc.)” with “(manufacturer, capacity, and number of wells)” to correct the typographical error and to eliminate the open-ended reporting requirement implied by the etcetera.

We are also proposing to include additional definitions of terms used in the rule to help clarify the rule requirements. The following terms are proposed to be defined within 40 CFR 98.348 of subpart HH: “destruction device”; “solid waste”; and “working capacity.”

We are proposing to amend Table HH–1 of subpart HH to provide a more reasoned approach for determining the decay rate constant, k, when only a small quantity of leachate is recirculated and/or when leachate recirculation is used rarely (not every year). In these cases, reporters would be required to use the highest decay rate values, even though the small or infrequent use of recirculation would not significantly alter the landfill’s moisture content. Instead of an all or nothing approach, the proposed amendments require that recirculation be calculated in units of inches/year (effectively representing it as an “additional precipitation rate”). The leachate recirculation rate would be calculated as the total volume of leachate recirculated during the year divided by the area of the portion of the landfill containing waste. This leachate recirculation rate (in inches/year) would be added to the precipitation rate and the sum would be used to determine what decay rate constant is appropriate.

We are also proposing to amend Table HH–1 to delete the default value for L_O as the amended Equation HH–1 would no longer use that term. Finally, we are proposing to amend Table HH–1 to include default values for DOC and k (decay rate) for inert materials because this category of waste is needed to properly account for non-degradable wastes that are managed in MSW landfills.

We are proposing to amend Table HH–2 of subpart HH to provide directly the waste disposal factors rather than the waste generation rates and percent disposed of in solid waste disposal sites (% to SWDS). These revisions are commensurate with the proposed amendments to Equation HH–2. Additionally, we identified an inadvertent error in the waste generation rates included in Table HH–2 from 1989 to 2006, so we are correcting this error with the values for waste disposal rates in the proposed amendments to Table HH–2. Finally, we propose to add waste disposal rates for 2007, 2008, and 2009 so that Equation HH–2 can be used for projecting historical disposal quantities for these years.

We are proposing to amend Table HH–3 of subpart HH to delete the references to the average depth of waste within an area (H2, H3, H4, and H5) as these terms are not used in the calculation for landfill gas collection efficiency. We also propose to amend Table HH–3 to clarify what is considered a “final soil cover.” The description for A5 is proposed to read, “Area with a final soil cover of 3 feet or thicker of clay and/or geomembrane cover system and active gas collection.” In the 2009 Final MRR, A5 included areas with both a final soil AND a geomembrane cover system. The amendment is needed so the definition of area A5 matches the types of cover systems for which the efficiency value was assessed. The description for A4 is proposed to read, “Area with an intermediate soil cover, or a final soil cover not meeting the criteria for A5 below, and active gas collection.” This revision is needed to clarify what is considered an intermediate soil cover and to better describe the types of cover systems for which the efficiency value of 0.75 applies.

Q. Subpart LL—Suppliers of Coal-Based Liquid Fuels

We are proposing to amend 40 CFR 98.386(a)(5) and (6) to clarify that fossil-fuel products that enter the facility would not be reported when exiting the facility if they are not further refined or otherwise used on site (*e.g.* products stored in a tank). It was not EPA's intent that such products be reported.

R. Subpart MM—Suppliers of Petroleum Products

We are proposing to add a definition of "batch" in 40 CFR 98.398 to clarify the crude oil reporting requirements in 40 CFR 98.396(a)(20) and to minimize administrative burden. We are proposing to define a batch of crude oil as up to a calendar month of volume from a single country of origin or, if refiners do not know the country of origin, up to a total calendar month of volume. Our intention is to allow refiners to use sample data on crude oil American Petroleum Institute (API) gravity and sulfur content that they or a third party currently collect as part of normal business practices, including sample data refiners use to report monthly weighted average API gravity and sulfur content to EIA.

To better align the API gravity and sulfur content reporting requirements with normal business practices, we are also proposing to amend the recordkeeping requirements in 40 CFR 98.397 so that refiners would no longer be required to maintain laboratory reports, calculations and worksheets used in the measurement of API gravity and sulfur content of crude oil as long as they maintain sufficient records to support the information they report to EPA (as required by 40 CFR 98.397(a) and (b)).

We are also proposing to amend 40 CFR 98.394(d) and 40 CFR 98.396(a)(20) to clarify that we are seeking the weighted average API gravity and sulfur content from representative samples of each batch. We seek comment on our proposed definition of batch in 40 CFR 98.398 and the associated amendments in subpart MM.

We also seek comment on any additional changes to the monitoring and QA/QC requirements in 40 CFR 98.394, procedures for estimating missing data in 40 CFR 98.395, description of reporting requirements in 40 CFR 98.396(a)(20), or records that must be retained in 40 CFR 98.397 related to measuring API gravity and sulfur content of crude oil that would better align these provisions with normal business practices.

We also seek comment on defining a batch of crude oil, alternatively, as an annual volume of a specific type of crude oil where types of crude oil are characterized by EIA crude stream code categories[4] or other parameters (*e.g.,* ranges of API gravity and sulfur content, commonly-used industry names) that refiners use to differentiate between types of crude oil as part of normal business practices. We seek comment on whether this alternative definition would decrease burden for reporters compared to our proposed definition or provide better data for purposes of understanding upstream emissions associated with the production of crude oil and petroleum products. We also seek comment on the relative benefits of using EIA's crude stream categories, as opposed to other parameters that refiners use in the ordinary course of business, to distinguish between different types of crude.

We also seek comment on limiting the crude oil data reporting requirements under 40 CFR 98.396(a)(20) to just the annual volume of each EIA crude stream code category (*i.e.,* remove requirements to report API gravity, sulfur content, and country of origin of each batch), given that each category already reflects country of origin and the range of API gravity and sulfur content for each category may be sufficiently narrow.

We are proposing to amend the definition of Product_i (annual volume of product "i" produced, imported, or exported) in equation MM–1 in 40 CFR 98.393(a)(1) and (2) to make it clear that GHG emissions should not be calculated for products leaving the refinery if those products had entered the refinery but were not further refined or otherwise used on site (*e.g.* products stored in a tank). As a harmonizing change, we are proposing to amend 40 CFR 98.396(a)(5) and (6) to clarify that these products are not reported.

We are proposing to amend the procedure in 40 CFR 98.393(f)(1) for calculating emission factors for solid products when using Calculation Method 1. The amendments would clarify that reporters should multiply the default carbon share factor in column B of Table MM–1 by 44/12 (the ratio of the molecular weight of CO_2 to the atomic weight of carbon) to convert the amount of carbon in the product to CO_2. Due to an oversight, 44/12 was not included in the original formula. This proposed amendment is necessary because otherwise reporters would calculate the emissions of carbon instead of carbon dioxide.

We are proposing to amend Equation MM–9 in 40 CFR 98.393(h)(2) to correct a typographical error. The correct emission factor (EF) term in the equation is EF_j not EF_i.

We are proposing to add an optional method for reporters in 40 CFR 98.393(i) to calculate CO_2 emissions that would result from the complete oxidation or combustion of a blended product or blended non-crude feedstock. The procedures in the existing rule require reporters to calculate CO_2 emissions for blended products either by selecting the default emission factor for the product listed in Table MM–1 that resembles most closely the blended product (Calculation Method 1) or by sampling and testing the blended product (Calculation Method 2). If a reporter applies the former method, the CO_2 emissions calculation for the blended product will reflect the CO_2 content of only one blend component. In such a case, the CO_2 from the blended product will not be as accurately accounted for in equation MM–4. The optional method we are proposing today would allow reporters to account for the CO_2 emissions of a blended product or blended non-crude feedstock in the summary calculation of total facility CO_2 by calculating the emissions of the blend's individual components using appropriate default factors listed in Table MM–1. This amendment is being proposed in an attempt to increase flexibility for facilities that receive and supply blends, especially at refineries with co-located terminals. This amendment would also improve accuracy of the summary calculation of total refinery CO_2 because it would ensure that the same quantities and emission factors are used for blend components coming in to the refinery as for blended products going out. We are seeking comment on the value of adding this new optional method and on whether it would be worthwhile to finalize these proposed rule amendments with this method included. We are seeking comment on the occasions in which reporters would use this method so that we can ensure that we have fully accounted for such occasions in the text. Please be specific in your comments. We also seek comment on whether the list of products in Table MM–1 is comprehensive of all products contained in blends that petroleum product suppliers receive or supply. We seek comment on any other alternative methods that would allow reporters to calculate CO_2 emissions for product blends using information already collected by industry in the course of

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[4] EIA's foreign stream code categories are listed in Appendix A of Form EIA–856 available at *http://www.eia.doe.gov/pub/oil_gas/petroleum/survey_forms/eia856appa.pdf.* EIA's domestic stream code categories are listed in Form EIA–182 available at *http://www.eia.doe.gov/pub/oil_gas/petroleum/survey_forms/eia182f.pdf.*

normal business or as part of compliance with the mandatory reporting rule.

We are proposing that the optional method would not be available for a product that is biomass-based because such biomass-based products are subject to paragraph (h) of 40 CFR 98.393. We seek comment on whether there would be value in expanding the proposed method to include biomass-based blends, and if so how the proposed method could be amended to allow for biomass-based blends without contradicting or jeopardizing the procedures in paragraph (h) of 40 CFR 98.393. Please be specific in your comments.

To align the existing regulatory text with the proposed optional method for blends, we are proposing to amend paragraphs (a)(1) and (b)(1) of 40 CFR 98.393 and to add paragraph (d) of 40 CFR 98.396 to create new data reporting requirements for blends.

For additional discussion of the current approach to blends in subpart MM, please *see* the response to comment EPA–HQ–OAR–2008–0508–0712.1, excerpt 94 in Volume 38 of U.S. EPA's Response to Public Comments on the Mandatory Greenhouse Gas Reporting Rule: Subpart MM—Suppliers of Petroleum Products (EPA–HQ–OAR–2008–0508–2254).

We are proposing to amend the calculation procedures in 40 CFR 98.393(h) for blended biomass-based fuels. The 2009 Final MRR directed refineries that supply a petroleum product that was produced by blending a petroleum-based product with denatured ethanol to report emissions from the denaturant leaving the refinery but not the denaturant in the ethanol that enters the refinery as a feedstock. To address this fact for refineries using Calculation Method 1 for petroleum products or non-crude petroleum feedstocks that contain denatured ethanol, we are proposing to amend the definition of the term "%vol" to exclude denaturant in equations MM–8 and MM–9, respectively.

To address this fact for refineries using Calculation Method 2 for petroleum products that were produced by blending a petroleum-based product with denatured ethanol on site, we are proposing a new equation MM–10a. Proposed equation MM–10a would require refineries to sample the petroleum-based products prior to blending them with denatured ethanol and use the resulting emissions factor and the volume of the petroleum-based product to calculate emissions for the ultimate petroleum products that leave the refinery. Equation MM–10 requires reporters to subtract the CO_2 emissions that would result from the biomass portion of the blended product by multiplying the volume of the blended product by both the percent volume of the biomass portion (which for ethanol would now include the denaturant) and the default emission factor. This new equation is necessary because the default factor for ethanol does not account for denaturant. Using equation MM–10 for a blended product containing denatured ethanol would therefore result in inaccurate CO_2 emissions because the emission factors for 100% ethanol and for denaturant are different. We are proposing to split 40 CFR 98.393(h)(3) into paragraphs (i) and (ii) so that equation MM–10 remains in (i) for petroleum products blended with biomass other than denatured ethanol while the proposed equation MM–10a appears in (ii) for petroleum products blended with denatured ethanol. We are proposing to amend equation MM–10 so that the definition of the term "%vol" excludes denaturant.

Together, these proposed amendments would ensure that the denaturant present in ethanol is not accounted for in the calculation of CO_2 that would result from the complete combustion or oxidation of the biomass-blended product or feedstock. We have concluded that these amendments simplify reporting for reporters while maintaining the level of data quality and accuracy required by EPA for subpart MM because denatured ethanol that enters the refinery as a feedstock always leaves the refinery as a product and is never used on site. We are seeking comment on this conclusion.

We cannot identify a situation in which a refinery would want to use Calculation Method 2 for a non-crude feedstock that contains denatured ethanol or an importer or exporter would want to use Calculation Method 2 for products containing denatured ethanol. Therefore, we are proposing to split 40 CFR 98.393(h)(4) into paragraphs (i) and (ii) so that equation MM–11 remains in (i) for non-crude feedstocks blended with biomass other than denatured ethanol while directions to use Calculation Method 1 appear in (ii) for non-crude feedstocks blended with denatured ethanol by refineries. We are also proposing directions in 40 CFR 98.393(h)(3)(ii) for importers and exporters of petroleum products blended with denatured ethanol to use Calculation Method 1. We are proposing to amend equation MM–11 so that the definition of the term "%vol" excludes denaturant. We seek comment on our proposal to have refineries, importers, and exporters use Calculation Method 1 in these situations and on the assumption that no reporter would be adversely impacted by using Calculation Method 1 in these situations.

If a refinery, importer, or exporter would be adversely impacted by only using Calculation Method 1 in these situations, we seek comment on an alternative approach to correcting the issue of accounting for denaturant in products but not in denatured ethanol feedstock, that would allow all reporters to use Calculation Method 2 for products and non-crude feedstocks containing denatured ethanol. One alternative approach, which is not included in the proposed regulatory text, would be to amend the emission factor for ethanol to reflect a 2.5 percent volume of denaturant and directing reporters to use Equations MM–10 and MM–11, respectively. We seek comment on this alternative approach.

We are proposing amendments to 40 CFR 98.396(a)(3), (a)(7), (b)(3), and (c)(3) to align the reporting requirements with the proposed amendments to account for denaturant in ethanol.

We are also seeking comment on the value of editing Table MM–1 so that refiners must report on quantities of "fuel gas" rather than "still gas." We seek comment on whether this would increase clarity or decrease complexity for reporters as they determine how to categorize and report gas products received as non-crude feedstock or supplied to the economy.

S. Subpart NN—Suppliers of Natural Gas and Natural Gas Liquids

We are proposing to amend the definition of the term "$Fuel_h$" in Equation NN–1 to clarify that the abbreviation "Mscf" refers to "thousand standard cubic feet" in order to avoid confusion on whether this abbreviation means "million standard cubic feet". We are also proposing to add the subscript "h" to the terms for Fuel and HHV in Equation NN–1.

We are proposing to amend the definition of the term "EF" in Equation NN–7 to clarify that the emission factor is for each natural gas liquid (NGL) product "g" and to add the subscript "g" to the term "EF."

We are proposing to amend Equation NN–8 to correct the term for "Annual CO_2 mass emissions that would result from the combustion or oxidation of fractionated NGLs received from other fractionators" from "CO_{2j}" to "CO_{2m}". We are also proposing to amend Equation NN–8 to remove the summation signs that were unnecessary from this equation for clarification purposes. We are also proposing to amend the definition of the term CO_{2i} to clarify that this term includes NGLs delivered to customers or on behalf of customers, recognizing that some customers may not receive the NGLs directly.

We are proposing to amend 40 CFR 98.406(a)(6) to correct two cross references. The incorrect references referred the reader to 40 CFR 98.406(b)(1) and (b)(2), when they were supposed to refer to 40 CFR 98.406(a)(1) and (a)(2). Similarly, we are proposing to amend an incorrect reference in 40 CFR 98.407(d) to refer the reader to 40 CFR 98.406(b)(7) instead of 40 CFR 98.406(b)(6).

We are proposing to amend 40 CFR 98.406(a)(9) to correct the abbreviation of NGL (from LNG) and to specify that reporting under that paragraph is for each product type.

We are proposing to amend 40 CFR 98.407(a) to remove the word "daily" because daily meter readings are not specifically required under this subpart.

Finally, we are proposing to update the high heat values (HHVs) and default CO_2 emission factors in Tables NN–1 and NN–2 to be consistent with the emission factors in Tables C–1 and MM–1.

V. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

This action is not a "significant regulatory action" under the terms of Executive Order (EO)12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under the EO.

B. Paperwork Reduction Act

This action does not impose any new information collection burden. These proposed amendments do not make any substantive changes to the reporting requirements in any of the subparts for which amendments are being proposed. In many cases, the proposed amendments to the reporting requirements could potentially reduce the reporting burden by making the reporting requirements conform more closely to current industry practices. However, the OMB has previously approved the information collection requirements contained in the regulations promulgated on October 30, 2009, under 40 CFR Part 98 under the provisions of the *Paperwork Reduction Act,* 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2060–0629. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Further information on EPA's assessment on the impact on burden can be found in the Technical Corrections and Amendments Cost Memo (EPA–HQ–OAR–2010–0109).

C. Regulatory Flexibility Act (RFA)

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this proposed rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of these proposed rule amendments on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The proposed rule amendments will not impose any new requirement on small entities that are not currently required by the rules promulgated on October 30, 2009 (*i.e.,* calculating and reporting annual GHG emissions).

EPA took several steps to reduce the impact of the 2009 Final MRR on small entities. For example, EPA determined appropriate thresholds that reduced the number of small businesses reporting. In addition, EPA did not require facilities to install CEMS if they did not already have them. Facilities without CEMS can calculate emissions using readily available data or data that are less expensive to collect such as process data or material consumption data. For some source categories, EPA developed tiered methods that are simpler and less burdensome. Also, EPA required annual instead of more frequent reporting. Finally, EPA continues to conduct significant outreach on the mandatory GHG reporting rule and maintains an "open door" policy for stakeholders to help inform EPA's understanding of key issues for the industries.

We continue to be interested in the potential impacts of the proposed rule amendments on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act (UMRA)

The UMRA seeks to protect State, local, and Tribal governments from the imposition of unfunded Federal mandates. In addition, the Act seeks to strengthen the partnership between the Federal government and State, local, and Tribal governments and ensure that the Federal government covers the costs incurred during compliance with Federal mandates.

Title II of the UMRA of 1995, Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with Federal mandates that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to the private segment, of $100 million or more in any one year.

Before promulgating an EPA rule for which a written statement is needed, section 205 of UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that these proposed rule amendments do not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Thus, the proposed rule amendments are not subject to the requirements of section 202 and 205 of the UMRA. In addition, EPA determined that the proposed rule amendments contain no regulatory requirements that might significantly or uniquely affect small governments because the amendments will not impose any new requirements that are not currently required by the rules promulgated on October 30, 2009 (*i.e.,* calculating and reporting annual GHG emissions), and the rule amendments would not unfairly apply to small governments. Therefore, this action is not subject to the requirements of section 203 of the UMRA.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. However, for a more detailed discussion about how these proposed rule amendments would relate to existing State programs, please *see* Section II of the proposal preamble for the Mandatory GHG Reporting Rule (74 FR 16457 to 16461, April 10, 2009).

These amendments apply directly to facilities that supply fuel that when used emit greenhouse gases or facilities that directly emit greenhouses gases. They do not apply to governmental entities unless the government entity owns a facility that directly emits greenhouse gases above threshold levels (such as a landfill), so relatively few government facilities would be affected. This regulation also does not limit the power of States or localities to collect GHG data and/or regulate GHG emissions. Thus, EO 13132 does not apply to this action.

Although section 6 of Executive Order 13132 does not apply to this action, EPA did consult with State and local officials or representatives of State and local governments in developing the 2009 Final MRR. A summary of EPA's consultations with State and local governments is provided in Section VIII.E of the preamble to the 2009 Final MRR (74 FR 56260, October 30, 2009).

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed action from State and local officials.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). The proposed rule amendments would not result in any changes to the requirements of the 2009 Final MRR. Thus, Executive Order 13175 does not apply to this action.

Although Executive Order 13175 does not apply to this action, EPA sought opportunities to provide information to Tribal governments and representatives during the development of the rules promulgated on October 30, 2009. A summary of the EPA's consultations with Tribal officials is provided in Sections VIII.E and VIII.F of the preamble to the 2009 Final Mandatory GHG Reporting Rule (74 FR 56260, October 30, 2009).

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

EPA interprets EO 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104–113 (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking involves the use of one new voluntary consensus standard from ASTM. Specifically, EPA proposes to allow facilities in the glass industry to use ASTM D6349–09 Standard Test Method for Determination of Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma—Atomic Emission Spectrometry in addition to the methods incorporated by reference in the 2009 Final MRR. This additional voluntary concensus standard will provide an alternative method that owners or operators in the glass industry can use to monitor GHG emissions. No new test methods were developed for this proposed rule.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment because it is a rule addressing information collection and reporting procedures.

List of Subjects

40 CFR Part 86

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements, Motor vehicle pollution.

40 CFR Part 98

Environmental protection, Administrative practice and procedure, Greenhouse gases, Incorporation by reference, Suppliers, Reporting and recordkeeping requirements.

Dated: May 27, 2010.

Lisa P. Jackson,
Administrator.

For the reasons set out in the preamble, title 40, Chapter I, of the Code of Federal Regulations is proposed to be amended as follows:

PART 86—[AMENDED]

1. The authority citation for part 86 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

2. Section 86.1844–01 is amended by adding paragraph (j) to read as follows:

§ 86.1844–01 Information requirements: Application for certification and submittal of information upon request.

* * * * *

(j) For complete heavy-duty vehicles only, measure CO_2, N_2O, and CH_4 as described in this paragraph (j) with each certification test on an emission data vehicle. Do not apply deterioration factors to the results. Use the analytical equipment and procedures specified in 40 CFR part 1065 as needed to measure N_2O and CH_4. Report these values in your application for certification. The requirements of this paragraph (j) apply starting with model year 2011 for CO_2 and 2012 for CH_4. The requirements of this paragraph (j) related to N_2O emissions apply for test groups that depend on NO_X aftertreatment to meet emission standards starting with model year 2013. Businesses that are defined as a small business by the Small Business Administration size standards in 13 CFR 121.201 may omit measurement of N_2O and CH_4; other manufacturers may provide appropriate data and/or information and omit measurement of N_2O and CH_4 as described in 40 CFR 1065.5. Use the same measurement methods as for your other results to report a single value for CO_2, N_2O, and CH_4. Round the final values as follows:

(1) Round CO_2 to the nearest 1 g/mi.

(2) Round N_2O to the nearest 0.001 g/mi.

(3) Round CH_4 to the nearest 0.001 g/mi.

PART 98—[AMENDED]

3. The authority citation for part 98 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart A—[Amended]

4. Section 98.6 is amended by:

a. Removing the definition of "Argon-oxygen decarburization (AOD) vessel."

b. Adding a definition for "Decarburization vessel."

c. Revising the definitions of "Carbonate-based mineral," "Carbonate-based mineral mass fraction," "Carbonate-based raw material," "Crude oil," "Gas collection system or landfill gas collection system," "Mscf," and "Non-crude feedstocks."

§ 98.6 Definitions.

* * * * *

Carbonate-based mineral means any of the following minerals used in the manufacture of glass: calcium carbonate ($CaCO_3$), calcium magnesium carbonate ($CaMg(CO_3)_2$), sodium carbonate (Na_2CO_3), barium carbonate ($BaCO_3$), and potassium carbonate (K_2CO_3).

Carbonate-based mineral mass fraction means the following: for limestone, the mass fraction of $CaCO_3$ in the limestone; for dolomite, the mass fraction of $CaMg(CO_3)_2$ in the dolomite; for soda ash, the mass fraction of Na_2CO_3 in the soda ash; for barium carbonate, the mass fraction of $BaCO_3$ in the barium carbonate; and for potassium carbonate, the mass fraction of K_2CO_3 in the potassium carbonate.

Carbonate-based raw material means any of the following materials used in the manufacture of glass: limestone, dolomite, soda ash, barium carbonate, and potassium carbonate.

* * * * *

Crude oil means a mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include any of the following:

(1) Small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casinghead) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included.

(2) Small amounts of nonhydrocarbons produced from oil, such as sulfur and various metals.

(3) Drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale. Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

* * * * *

Decarburization vessel means any vessel used to further refine molten steel to reduce the carbon content of the steel. This definition includes vessels used for argon-oxygen decarburization, vacuum degassers, vacuum oxygen degassers, Rheinstahl-Heraus systems, and other decarburization vessels.

* * * * *

Gas collection system or landfill gas collection system means a system of pipes used to collect landfill gas from different locations in the landfill by means of a fan or similar mechanical draft equipment to a single location for treatment (thermal destruction) or use. Landfill gas collection systems may also include knock-out or separator drums and/or a compressor. Landfill gas collection systems do not include "passive" systems, whereby landfill gas flows naturally to the surface of the landfill where an opening or pipe (vent) is installed to allow for natural gas flow.

* * * * *

Mscf means thousand standard cubic feet.

* * * * *

Non-crude feedstocks means any petroleum product or natural gas liquid that enters the refinery to be further refined or otherwise used on site, including supplemental fuel burned to provide heat or thermal energy.

* * * * *

5. Section 98.7 is amended by revising paragraph (a)(1) and by adding paragraph (e)(43) to read as follows:

§ 98.7 What standardized methods are incorporated by reference into this part?

* * * * *

(a) * * *

(1) Association of Fertilizer and Phosphate Chemists Analytical Methods Manual 10th Edition, incorporation by reference (IBR) approved for § 98.264(a) and § 98.264(b).

* * * * *

(e) * * *

(43) ASTM D6349–09 Standard Test Method for Determination of Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma—Atomic Emission Spectrometry.

Subpart E—[Amended]

6. Section 98.53 is revised to read as follows:

§ 98.53 Calculating GHG emissions.

(a) You must determine annual N_2O emissions from adipic acid production according to paragraphs (a)(1) or (a)(2) of this section.

(1) Use a site-specific emission factor and production data according to paragraphs (b) through (h) of this section.

(2) Request Administrator approval for an alternative method of determining N_2O emissions according to paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) You must submit the request within 45 days following promulgation of this subpart or within the first 30 days of each subsequent reporting year.

(ii) If the Administrator does not approve your requested alternative method within 150 days of the end of the reporting year, you must determine the N_2O emissions for the current reporting period using the procedures specified in paragraphs (b) through (h) of this section.

(b) You must conduct an annual performance test according to paragraphs (b)(1) through (b)(3) of this section.

(1) You must conduct the test on the waste gas stream from the nitric acid oxidation step of the process, referred to as the test point, according to the methods specified in § 98.54(b) through (f).

(2) You must conduct the performance test under normal process operating conditions.

(3) You must measure the adipic acid production rate during the test and calculate the production rate for the test period in metric tons per hour.

(c) Using the results of the performance test in paragraph (b) of this section, you must calculate an emission factor for each adipic acid unit according to Equation E–1 of this section:

$$EF_{N2O,N} = \frac{\sum_{1}^{n} \frac{C_{N2O} * 1.14 \times 10^{-7} * Q}{P}}{n} \qquad \text{(Eq. E-1)}$$

Where:

$EF_{N2O,N}$ = Average facility-specific N_2O emission factor for each adipic acid production unit (lb N_2O generated/ton adipic acid produced).

C_{N2O} = N_2O concentration per test run during the performance test (ppm N_2O).

1.14×10^{-7} = Conversion factor (lb/dscf-ppm N_2O).

Q = Volumetric flow rate of effluent gas per test run during the performance test (dscf/hr).

P = Production rate per test run during the performance test (tons adipic acid produced/hr).

n = Number of test runs.

(d) If any N_2O abatement technology "N" is located after your test point, you must determine the destruction efficiency according to paragraphs (d)(1), (d)(2), or (d)(3) of this section.

(1) Use the manufacturer's specified destruction efficiency.

(2) Estimate the destruction efficiency through process knowledge. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current vent stream conditions. You must document how process knowledge was used to determine the destruction efficiency.

(3) Calculate the destruction efficiency by conducting an additional performance test on the emissions stream following the N_2O abatement technology.

(e) If any N_2O abatement technology "N" is located after your test point, you must determine the annual amount of adipic acid produced while N_2O abatement technology "N" is operating according to § 98.54(f). Then you must calculate the abatement factor for N_2O abatement technology "N" according to Equation E–2 of this section.

$$AF_N = \frac{P_{a,N}}{P_a} \qquad \text{(Eq. E-2)}$$

Where:

AF_N = Abatement utilization factor of N_2O abatement technology "N" (fraction of annual production that abatement technology is operating).

$P_{a,N}$ = Annual adipic acid production during which N_2O abatement technology "N" was used (ton adipic acid produced).

P_a = Total annual adipic acid production (ton acid produced).

(f) You must determine the annual amount of adipic acid produced according to § 98.54(f).

(g) You must calculate N_2O emissions according to paragraph (g)(1) or (g)(2) of this section for each adipic acid production unit and sum the unit level emissions to determine the emissions for the facility.

(1) If any N_2O abatement technology "N" is located after your test point, you must use the emissions factor (determined in Equation E–1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual adipic acid production (determined in paragraph (f) of this section), and the abatement utilization factor (determined in paragraph (e) of this section), according to Equation E–3a of this section:

$$N_2O = \sum_{1}^{N} \frac{EF_{N20\mathrm{N}} * P_{aN} * \left(1 - \left(DF_N * AF_N\right)\right)}{2205} \qquad \text{(Eq. E-3a)}$$

Where:

N_2O = Annual N_2O mass emissions from adipic acid production (metric tons).

EF_{N_2ON} = N_2O emissions factor for unit(s) on which N_2O abatement technology "N" is operating (lb N_2O generated/ton adipic acid produced).

P_{aN} = Annual adipic acid produced by unit(s) for which N_2O abatement technology "N" is operating (tons).

DF_N = Destruction efficiency of N_2O abatement technology "N" (percent of N_2O removed from air stream).

AF_N = Abatement utilization factor of N_2O abatement technology "N" (fraction of annual production for which N_2O abatement technology "N" is operating).

2205 = Conversion factor (lb/metric ton).

N = Number of different N_2O abatement technologies.

(2) If no N_2O abatement technologies are located after your test point, you must use the emissions factor (determined using Equation E–1 of this section) and the annual adipic acid production (determined in paragraph (f) of this section) according to Equation E–3b of this section for each adipic acid production unit.

$$N_2O = \frac{EF_{N20} * P_a}{2205} \qquad \text{(Eq. E-3b)}$$

Where:

N_2O = Annual N_2O mass emissions from adipic acid production (metric tons).

EF_{N2O} = N_2O emissions factor (lb N_2O generated/ton adipic acid produced).
P_a = Annual adipic acid produced (tons).
2205 = Conversion factor (lb/metric ton).

(h) You must determine the amount of process N_2O emissions that is sold or transferred off site (if applicable). You can determine the amount using existing process flow meters and N_2O analyzers.

7. Section 98.54 is amended by:

a. Revising paragraph (a) introductory text.

b. Adding second and third sentences to paragraph (a)(1).

c. Revising paragraph (a)(3).

d. Revising paragraph (c) introductory text.

e. Revising the first sentence of paragraph (d) introductory text.

f. Revising paragraphs (e) and (f).

§ 98.54 Monitoring and QA/QC requirements.

(a) You must conduct a new performance test and calculate a new emissions factor for each adipic acid production unit according to the frequency specified in paragraphs (a)(1) through (a)(3) of this section.

(1) * * * The test must be conducted at a point during production that is representative of the average emissions from your process. You must document the methods used to determine the representative point.

* * * * *

(3) If you requested Administrator approval for an alternative method of determining N_2O emissions under § 98.53(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.

* * * * *

(c) You must determine the adipic acid production rate during the performance test according to paragraph (c)(1) or (c)(2) of this section.

* * * * *

(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. * * *

* * * * *

(e) You must determine the monthly amount of adipic acid produced and the monthly amount of adipic acid produced during which N_2O abatement technology, located after the test point, is operating according to the methods in paragraphs (c)(1) or (c)(2) of this section.

(f) You must determine the annual amount of adipic acid produced and the annual amount of adipic produced during which N_2O abatement technology located after the test point is operating by summing the respective monthly adipic acid production quantities determined in paragraph (e) of this section.

8. Section 98.56 is amended by:

a. Revising paragraph (c).

b. Revising paragraph (j) introductory text.

c. Revising paragraph (j)(1).

d. Revising paragraph (k) introductory text.

§ 98.56 Data reporting requirements.

* * * * *

(c) Annual adipic acid production during which N_2O abatement technology (located after the test point) is operating (tons).

* * * * *

(j) If you conducted a performance test and calculated a site-specific emissions factor according to § 98.53(a)(1), each annual report must also contain the information specified in paragraphs (j)(1) through (j)(7) of this section for each adipic acid production unit.

(1) Emission factor (lb N_2O/ton adipic acid).

* * * * *

(k) If you requested Administrator approval for an alternative method of determining N_2O emissions under § 98.53(a)(2), each annual report must also contain the information specified in paragraphs (k)(1) through (k)(4) of this section for each adipic acid production facility.

* * * * *

9. Section 98.57 is amended by:

a. Revising paragraph (c).

b. Revising paragraph (f).

§ 98.57 Records that must be retained.

* * * * *

(c) Number of facility and unit operating hours in calendar year.

* * * * *

(f) Performance test reports.

* * * * *

Subpart H—[Amended]

10. Section 98.83 is amended by revising the introductory text of paragraph (d)(3); and by revising the definitions of “rm”, “TOCrm”, and “M” in Equation H–5 of paragraph (d)(3) to read as follows:

§ 98.83 Calculating GHG emissions.

* * * * *

(d) * * *

(3) CO_2 emissions from raw materials. Calculate CO_2 emissions from raw materials using Equation H–5 of this section:

* * * * *

rm = The amount of raw material i consumed annually, tons/yr (dry basis) or the amount of raw kiln feed consumed annually, tons/yr (dry basis).

* * * * *

TOCrm = Organic carbon content of raw material i or organic carbon content of combined raw kiln feed(dry basis), as determined in § 98.84(c) or using a default factor of 0.2 percent of total raw material weight.

M = Number of raw materials or 1 if calculating emissions based on combined raw kiln feed.

* * * * *

11. Section 98.84 is amended by revising paragraphs (b), (c), (d), and (f) to read as follows:

§ 98.84 Monitoring and QA/QC requirements.

* * * * *

(b) You must determine the weight fraction of total CaO and total MgO in clinker from each kiln using ASTM C114–09 Standard Test Methods for Chemical Analysis of Hydraulic Cement (incorporated by reference, *see* § 98.7). The monitoring must be conducted monthly for each kiln from a monthly clinker sample drawn from bulk clinker storage if storage is dedicated to the specific kiln, or from a monthly arithmetic average of daily clinker samples drawn from the clinker conveying systems exiting each kiln.

(c) The total organic carbon content (dry basis) of raw materials must be determined annually using ASTM C114–09 Standard Test Methods for Chemical Analysis of Hydraulic Cement (incorporated by reference, *see* § 98.7) or a similar industry standard practice or method approved for total organic carbon determination in raw mineral materials. The analysis must be conducted either on sample material drawn from bulk raw kiln feed storage or on sample material drawn from bulk raw material storage for each category of raw material (*i.e.,* limestone, sand, shale, iron oxide, and alumina). Facilities that opt to use the default total organic carbon factor provided in § 98.83(d)(3), are not required to monitor for TOC.

(d) The quantity of clinker produced monthly by each kiln must be determined by direct weight measurement of clinker using the same plant techniques used for accounting purposes, such as reconciling weigh hopper or belt weigh feeder measurements against inventory measurements. As an alternative, facilities may also determine clinker production by direct measurement of raw kiln feed and application of a kiln-specific feed-to-clinker factor. Facilities that opt to use a feed-to-clinker factor must verify the accuracy of this factor on a monthly basis.

* * * * *

(f) The annual quantity of raw kiln feed or annual quantity of each category of raw materials consumed by the facility (*e.g.,* limestone, sand, shale, iron oxide, and alumina) must be determined monthly by direct weight measurement using the same plant instruments used for accounting purposes, such as weigh hoppers, truck weigh scales, or belt weigh feeders.

* * * * *

12. Section 98.86 is amended by revising paragraphs (b)(12) and (b)(13); and by adding paragraph (b)(15) to read as follows:

§ 98.86 Data reporting requirements.

(b) * * *

(12) Annual organic carbon content of raw kiln feed or annual organic carbon content of each raw material (wt-fraction, dry basis).

(13) Annual consumption of raw kiln feed or annual consumption of each raw material (dry basis).

* * * * *

(15) Method used to determine the monthly clinker production from each kiln reported under (b)(2) of this section, including monthly kiln-specific clinker factors, if used.

13. Section 98.87 is amended by:

a. Revising paragraph (a) introductory text.

b. Removing and reserving paragraphs (a)(1) and (a)(2).

c. Adding paragraphs (b)(1), (b)(2), and (b)(3).

§ 98.87 Records that must be retained.

(a) If a CEMS is used to measure CO_2 emissions, then in addition to the records required by § 98.3(g), you must retain under this subpart the records required for the Tier 4 Calculation Methodology in § 98.37.

* * * * *

(b) * * *

(1) Documentation of monthly calculated kiln-specific clinker CO_2 emission factor.

(2) Documentation of quarterly calculated kiln-specific CKD CO_2 emission factor.

(3) Measurements, records and calculations used to determine reported parameters.

Subpart K—[Amended]

14. Section 98.112 is amended by revising paragraph (a) to read as follows:

§ 98.112 GHGs to report.

* * * * *

(a) Process CO_2 emissions from each electric arc furnace (EAF) used for the production of any ferroalloy listed in § 98.110, and process CH_4 emissions from each EAF that is used for the production of any ferroalloy listed in Table K–1 of this section.

* * * * *

15. Section 98.113 is amended by revising the introductory text to read as follows:

§ 98.113 Calculating GHG emissions.

You must calculate and report the annual process CO_2 emissions from each EAF not subject to paragraph (c) of this section using the procedures in either paragraph (a) or (b) of this section. For each EAF also subject to annual process CH_4 emissions reporting, you must also calculate and report the annual process CH_4 emissions from the EAF using the procedures in paragraph (d) of this section.

* * * * *

16. Section 98.116 is amended by revising paragraphs (b), (c), (d) introductory text, (d)(1), and (e)(1) to read as follows:

§ 98.116 Data reporting requirements.

* * * * *

(b) Annual production for each ferroalloy product identified in § 98.110, from each EAF (tons).

(c) Total number of EAFs at facility used for production of ferroalloy products.

(d) If a CEMS is used to measure CO_2 emissions, then you must report under this subpart the relevant information required by § 98.36 for the Tier 4 Calculation Methodology and the following information specified in paragraphs (d)(1) through (d)(3) of this section.

(1) Annual process CO_2 emissions (in metric tons) from each EAF used for the production of any ferroalloy product identified in § 98.110.

* * * * *

(e) * * *

(1) Annual process CO_2 emissions (in metric tons) from each EAF used for the production of any ferroalloy identified in § 98.110 (metric tons).

* * * * *

Subpart N—[Amended]

17. Section 98.144 is amended by revising paragraph (b) to read as follows:

§ 98.144 Monitoring and QA/QC requirements.

* * * * *

(b) You must measure carbonate-based mineral mass fractions at least annually to verify the mass fraction data provided by the supplier of the raw material; such measurements shall be based on sampling and chemical analysis conducted by a certified laboratory using ASTM D3682–01 (Reapproved 2006) Standard Test Method for Major and Minor Elements in Combustion Residues from Coal Utilization Processes (incorporated by reference, *see* § 98.7) or ASTM D6349–09 Standard Test Method for Determination of Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma—Atomic Emission Spectrometry (incorporated by reference, *see* § 98.7).

* * * * *

18. Section 98.146 is amended by revising paragraphs (a) introductory text, (a)(2), (b)(7), and (b)(9) to read as follows:

§ 98.146 Data reporting requirements.

* * * * *

(a) If a CEMS is used to measure CO_2 emissions, then you must report under this subpart the relevant information required under § 98.36 for the Tier 4 Calculation Methodology and the following information specified in paragraphs (a)(1) and (a)(2) of this section:

* * * * *

(2) Annual quantity of glass produced by each glass melting furnace and by all furnaces combined (tons).

(b) * * *

(7) Method used to determine fraction of calcination.

* * * * *

(9) The number of times in the reporting year that missing data procedures were followed to measure monthly quantities of carbonate-based raw materials or mass fraction of the carbonate-based minerals for any continuous glass melting furnace (months).

19. Table N–1 to subpart N is amended by adding entries for "Barium carbonate" and "Potassium carbonate" to read as follows:

TABLE N–1—TO SUBPART N—CO_2 EMISSION FACTORS FOR CARBONATE-BASED RAW MATERIALS

Carbonate-Based raw material—mineral	CO_2 emission factor[a]
* * * *	*
Barium carbonate—$BaCO_3$	0.223

TABLE N–1—TO SUBPART N—CO_2 EMISSION FACTORS FOR CARBONATE-BASED RAW MATERIALS—Continued

Carbonate-Based raw material—mineral	CO_2 emission factor[a]
Potassium carbonate—K_2CO_3	0.318

[a] Emission factors in units of metric tons of CO_2 emitted per metric ton of carbonate-based raw material charged to the furnace.

Subpart O—[Amended]

20. Section 98.154 is amended by revising the first and second sentences of paragraph (k), revising the second sentence of paragraph (l) introductory text, and revising paragraph (o) to read as follows:

§ 98.154 Monitoring and QA/QC requirements.

* * * * *

(k) The mass of HFC–23 emitted from process vents shall be estimated at least monthly by incorporating the results of the most recent emissions test into Equation O–7 of this subpart. HCFC–22 production facilities that use a destruction device connected to the HCFC–22 production equipment shall conduct emissions tests at process vents at least once every five years or after significant changes to the process. * * *

(l) * * * HFC–23 destruction facilities shall conduct annual measurements of HFC–23 concentrations at the outlet of the destruction device in accordance with EPA Method 18 at 40 CFR part 60, appendix A–6. * * *

* * * * *

(o) In their estimates of the mass of HFC–23 destroyed, HFC–23 destruction facilities shall account for any temporary reductions in the destruction efficiency that result from any startups, shutdowns, or malfunctions of the destruction device, including departures from the operating conditions defined in state or local permitting requirements and/or destruction device manufacturer specifications.

* * * * *

21. Section 98.156 is amended by revising paragraphs (b)(1), (b)(3), (c), and (d); and revising paragraph (e) introductory text to read as follows:

§ 98.156 Data reporting requirements.

* * * * *

(b) * * *

(1) Annual mass of HFC–23 fed into the destruction device.

* * * * *

(3) Annual mass of HFC–23 emitted from the destruction device.

(c) Each HFC–23 destruction facility shall report the concentration (mass fraction) of HFC–23 measured at the outlet of the destruction device during the facility's annual HFC–23 concentration measurements at the outlet of the device.

(d) If the HFC–23 concentration measured pursuant to § 98.154(l) is greater than that measured during the performance test that is the basis for the destruction efficiency (DE), the facility shall report the revised destruction efficiency calculated under § 98.154(l) and the values used to calculate it, specifying whether § 98.154(l)(1) or § 98.154(l)(2) has been used for the calculation. Specifically, the facility shall report the following:

(1) Flow rate of HFC–23 being fed into the destruction device in kg/hr.

(2) Concentration (mass fraction) of HFC–23 at the outlet of the destruction device.

(3) Flow rate at the outlet of the destruction device in kg/hr.

(4) Emission rate (in kg/hr) calculated from paragraphs (d)(2) and (d)(3) of this section.

(5) Destruction efficiency (DE) calculated from paragraphs (d)(1) and (d)(4) of this section.

(e) By March 31, 2011 or within 60 days of commencing HFC–23 destruction, HFC–23 destruction facilities shall submit a one-time report including the following information for each destruction process:

* * * * *

22. Section 98.157 is amended by revising paragraph (b)(1) to read as follows:

§ 98.157 Records that must be retained.

* * * * *

(b) * * *

(1) Records documenting their one-time and annual reports in § 98.156(b) through (e).

* * * * *

Subpart P—[Amended]

23. Section 98.160 is amended by revising paragraph (c) to read as follows:

§ 98.160 Definition of the source category.

* * * * *

(c) This source category includes merchant hydrogen production facilities located within another facility if they are not owned by, or under the direct control of, the other facility's owner and operator.

24. Section 98.162 is amended by revising paragraph (a); and by removing and reserving paragraph (b) to read as follows:

§ 98.162 GHGs to report.

* * * * *

(a) CO_2 emissions from each hydrogen production process unit.

* * * * *

25. Section 98.163 is amended by:

a. Revising the introductory text.

b. Revising paragraph (a) and paragraph (b) introductory text.

c. In paragraph (b)(1), revising the only sentence, and revising the definition of "CO_2" in Equation P–1.

d. Revising the only sentence of paragraphs (b)(2) and (b)(3).

§ 98.163 Calculating GHG emissions.

You must calculate and report the annual CO_2 emissions from each hydrogen production process unit using the procedures specified in either paragraph (a) or (b) of this section.

(a) *Continuous Emissions Montoring Systems (CEMS).* Calculate and report under this subpart the CO_2 emissions by operating and maintaining 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) *Fuel and feedstock material balance approach.* Calculate and report CO_2 emissions as the sum of the annual emissions associated with each fuel and feedstock used for hydrogen production by following paragraphs (b)(1) through (b)(3) of this section.

(1) *Gaseous fuel and feedstock.* You must calculate the annual CO_2 emissions from each gaseous fuel and feedstock according to Equation P–1 of this section:

* * * * *

CO_2 = Annual CO_2 emissions arising from fuel and feedstock consumption (metric tons/yr).

* * * * *

(2) *Liquid fuel and feedstock.* You must calculate the annual CO_2 emissions from each liquid fuel and feedstock according to Equation P–2 of this section:

* * * * *

(3) *Solid fuel and feedstock.* You must calculate the annual CO_2 emissions from each solid fuel and feedstock according to Equation P–3 of this section:

* * * * *

26. Section 98.166 is amended by revising the introductory text and paragraphs (a)(1), (b)(1), and (c) to read as follows:

§ 98.166 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as appropriate, and (c) and (d):

(a) * * *

(1) Unit identification number and annual CO_2 emissions.

* * * * *

(b) * * *

(1) Unit identification number and annual CO_2 emissions.

* * * * *

(c) Quantity of CO_2 collected and transferred off site in either gas, liquid, or solid forms, following the requirements of subpart PP of this part.

* * * * *

Subpart Q—[Amended]

27. Section 98.172 is amended by revising paragraphs (b) and (c) to read as follows:

§ 98.172 GHGs to report.

* * * * *

(b) You must report CO_2 emissions from flares that burn blast furnace gas or coke oven gas according to the procedures in § 98.253(b)(1) of subpart Y (Petroleum Refineries) of this part. When using the alternatives set forth in § 98.253(b)(1)(ii)(B) and § 98.253(b)(1)(iii)(C), you must use the default CO_2 emission factors for coke oven gas and blast furnace gas from Table C–1 of subpart C in Equations Y–2 and Y–3 of subpart Y of this part. You must report CH_4 and N_2O emissions from flares according to the requirements in § 98.33(c)(2) using the emission factors for coke oven gas and blast furnace gas in Table C–2 of subpart C of this part.

(c) You must report process CO_2 emissions from each taconite indurating furnace; basic oxygen furnace; non-recovery coke oven battery combustion stack; coke pushing process; sinter process; EAF; decarburization vessel; and direct reduction furnace by following the procedures in this subpart.

28. Section 98.173 is amended by:

a. Revising the first sentence of the introductory text.

b. In paragraph (b)(1)(vi), revising the introductory text and the definition of "CO_2" in Equation Q–6.

c. Revising the first sentence of paragraph (d).

§ 98.173 Calculating GHG emissions.

You must calculate and report the annual process CO_2 emissions from each taconite indurating furnace, basic oxygen furnace, non-recovery coke oven battery, sinter process, EAF, decarburization vessel, and direct reduction furnace using the procedures in either paragraph (a) or (b) of this section. * * *

(b) * * *

(1) * * *

(vi) For decarburization vessels, estimate CO_2 emissions using Equation Q–6 of this section.

* * * * *

CO_2 = Annual CO_2 mass emissions from the decarburization vessel (metric tons).

* * * * *

(d) If GHG emissions from a taconite indurating furnace, basic oxygen furnace, non-recovery coke oven battery, sinter process, EAF, decarburization vessel, or direct reduction furnace are vented through the same stack as any combustion unit or process equipment that reports CO_2 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 this section shall not be used to calculate process emissions.* * *

29. Section 98.174 is amended by revising first sentence of paragraph (c)(2) and revising paragraph (c)(7) to read as follows:

§ 98.174 Monitoring and QA/QC requirements.

* * * * *

(c) * * *

(2) For the furnace exhaust from basic oxygen furnaces, EAFs, decarburization vessels, and direct reduction furnaces, sample the furnace exhaust for at least three complete production cycles that start when the furnace is being charged and end after steel or iron and slag have been tapped. * * *

* * * * *

(7) If your EAF and decarburization vessel exhaust to a common emission control device and stack, you must sample each process in the ducts before the emissions are combined, sample each process when only one process is operating, or sample the combined emissions when both processes are operating and base the site-specific emission factor on the steel production rate of the EAF.

* * * * *

30. Section 98.175 is amended by revising the introductory text to read as follows:

§ 98.175 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations in § 98.173 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 the paragraphs (a) and (b) of this section. You must follow the missing data procedures in § 98.255(b) of subpart Y (Petroleum Refineries) of this part for flares burning coke oven gas or blast furnace gas. You must document and keep records of the procedures used for all such estimates.

* * * * *

31. Section 98.176 is amended by revising the introductory text and paragraphs (c) and (e)(3); and by adding paragraphs (g) and (h) to read as follows:

§ 98.176 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the information required in paragraphs (a) through (h) of this section for each coke pushing operation; taconite indurating furnace; basic oxygen furnace; non-recovery coke oven battery; sinter process; EAF; decarburization vessel; direct reduction furnace; and flare burning coke oven gas or blast furnace gas:

* * * * *

(c) If a CEMS is used to measure CO_2 emissions, then you must report the relevant information required under § 98.36 for the Tier 4 Calculation Methodology.

* * * * *

(e) * * *

(3) The annual volume of each type of gaseous fuel (reported separately for each type in standard cubic feet), the annual volume of each type of liquid fuel (reported separately for each type in gallons), and the annual mass (in metric tons) of each other process inputs and outputs used to determine CO_2 emissions.

* * * * *

(g) The annual amount of coal charged to the coke ovens (in metric tons).

(h) For flares burning coke oven gas or blast furnace gas, the information specified in § 98.256(e) of subpart Y (Petroleum Refineries) of this part.

32. Section 98.177 is amended by revising paragraph (d) to read as follows:

§ 98.177 Records that must be retained.

* * * * *

(d) Annual operating hours for each taconite indurating furnace, basic oxygen furnace, non-recovery coke oven battery, sinter process, electric arc furnace, decarburization vessel, and direct reduction furnace.

* * * * *

Subpart S—[Amended]

33. Section 98.190 is amended by revising paragraph (a) to read as follows:

§ 98.190 Definition of the source category.

(a) Lime manufacturing plants (LMPs) engage in the manufacture of a lime product (*e.g.,* calcium oxide, high-calcium quicklime, calcium hydroxide, hydrated lime, dolomitic quicklime, dolomitic hydrate, or other lime products) by calcination of limestone, dolomite, shells or other calcareous substances as defined in 40 CFR 63.7081(a)(1).

* * * * *

34. Section 98.193 is amended by:

a. In paragraph (b)(2)(i), revising the second sentence and the definition of "2000/2205" in Equation S–1.

b. In paragraph (b)(2)(ii), revising the only sentence and the definitions of "$EF_{LKD,i,n}$", "$CaO_{LKD,i,n}$", "$MgO_{LKD,i,n}$", and "2000/2205" in Equation S–2.

c. In paragraph (b)(2)(iii), revising the only sentence and the definitions of "$E_{waste,i}$", "$CaO_{waste,i}$", "$MgO_{waste,i}$", "$M_{waste,i}$", and "2000/2205" in Equation S–3.

d. In Paragraph (b)(2)(iv), revising the definitions of "$EF_{LIME,i,n}$", "$M_{LIME,i,n}$", "$EF_{LKD,i,n}$", "$M_{LKD,i,n}$", "$E_{waste,i}$", "t", "b", and "z" in Equation S–4.

§ 98.193 Calculating GHG emissions.

* * * * *

(b) * * *

(2) * * *

(i) * * * Calcium oxide and magnesium oxide content must be analyzed monthly for each lime product type that is produced:

* * * * *

2000/2205 = Conversion factor for tons to metric tons.

(ii) You must calculate a monthly emission factor for each type of calcined byproduct/waste sold (including lime kiln dust) using Equation S–2 of this section:

* * * * *

$EF_{LKD,i,n}$ = Emission factor for calcined lime byproduct/waste type i sold, for month n (metric tons CO_2/ton lime byproduct).

* * * * *

$CaO_{LKD,i,n}$ = Calcium oxide content for calcined lime byproduct/waste type i sold, for month n (metric tons CaO/metric ton lime).
$MgO_{LKD,i,n}$ = Magnesium oxide content for calcined lime byproduct/waste type i sold, for month n (metric tons MgO/metric ton lime).
2000/2205 = Conversion factor for tons to metric tons.

(iii) You must calculate the annual CO_2 emissions from each type of calcined byproduct/waste that is not sold (including lime kiln dust and scrubber sludge) using Equation S–3 of this section:

* * * * *

$E_{waste,i}$ = Annual CO_2 emissions for calcined lime byproduct/waste type i that is not sold (metric tons CO_2).

* * * * *

$CaO_{waste,i}$ = Calcium oxide content for calcined lime byproduct/waste type i that is not sold (metric tons CaO/metric ton lime).
$MgO_{waste,i}$ = Magnesium oxide content for calcined lime byproduct/waste type i that is not sold (metric tons MgO/metric ton lime).
$M_{waste,i}$ = Annual weight or mass of calcined byproducts/wastes for lime type i that is not sold (tons).
2000/2205 = Conversion factor for tons to metric tons.

(iv) * * *

$EF_{LIME,i,n}$ = Emission factor for lime type i produced, in calendar month n (metric tons CO_2/ton lime) from Equation S–1 of this section.
$M_{LIME,i,n}$ = Weight or mass of lime type i produced in calendar month n (tons).
$EF_{LKD,i,n}$ = Emission factor of calcined byproducts/wastes sold for lime type i in calendar month n, (metric tons CO_2/ton byproduct/waste) from Equation S–2 of this section.
$M_{LKD,i,n}$ = Monthly weight or mass of calcined byproducts/waste sold (such as lime kiln dust, LKD) for lime type i in calendar month n (tons).
$E_{waste,i}$ = Annual CO_2 emissions for calcined lime byproduct/waste type i that is not sold (metric tons CO_2) from Equation S–3 of this section.
t = Number of lime types produced
b = Number of calcined byproducts/wastes that are sold.
z = Number of calcined byproducts/wastes that are not sold.

* * * * *

35. Section 98.194 is amended by:

a. Revising the first sentence of paragraph (a).

b. Revising paragraph (c) introductory text.

c. Revising paragraph (d).

§ 98.194 Monitoring and QA/QC requirements.

(a) You must determine the total quantity of each type of lime product that is produced and each calcined byproduct/waste (such as lime kiln dust) that is sold. * * *

* * * * *

(c) You must determine the chemical composition (percent total CaO and percent total MgO) of each type of lime product that is produced and each type of calcined byproduct/waste sold according to paragraph (c)(1) or (c)(2) of this section. You must determine the chemical composition of each type of lime product that is produced and each type of calcined byproduct/waste sold on a monthly basis. You must determine the chemical composition for each type of calcined byproduct/waste that is not sold on an annual basis.

* * * * *

(d) You must use the analysis of calcium oxide and magnesium oxide content of each lime product that is produced and that is collected during the same month as the production data in monthly calculations.

* * * * *

36. Section 98.195 is amended by revising the first sentence of the introductory text; and by revising paragraph (a) to read as follows:

§ 98.195 Procedures for estimating missing data.

For the procedure in § 98.193(b)(1), a complete record of all measured parameters used in the GHG emissions calculations is required (*e.g.,* oxide content, quantity of lime products, etc.). * * *

(a) For each missing value of the quantity of lime produced (by lime type), and quantity of calcined byproduct/waste produced and sold, the substitute data value shall be the best available estimate based on all available process data or data used for accounting purposes.

* * * * *

37. Section 98.196 is revised to read as follows:

§ 98.196 Data reporting requirements.

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

(a) If a CEMS is used to measure CO_2 emissions, then you must report under this subpart the relevant information required by § 98.36 and the information listed in paragraphs (a)(1) through (a)(8) of this section.

(1) Method used to determine the quantity of lime that is produced and sold.

(2) Method used to determine the quantity of calcined lime byproduct/waste sold.

(3) Beginning and end of year inventories for each lime product that is produced, by type.

(4) Beginning and end of year inventories for calcined lime byproducts/wastes sold, by type.

(5) Annual amount of calcined lime byproduct/waste sold, by type (tons).

(6) Annual amount of lime product sold, by type (tons).

(7) Annual amount of calcined lime byproduct/waste that is not sold, by type (tons).

(8) Annual amount of lime product not sold, by type (tons).

(b) If a CEMS is not used to measure CO_2 emissions, then you must report the information listed in paragraphs (b)(1) through (b)(17) of this section.

(1) Annual CO_2 process emissions from all kilns combined (metric tons).

(2) Monthly emission factors for each lime type produced.

(3) Monthly emission factors for each calcined byproduct/waste by lime type that is sold.

(4) Standard method used (ASTM or NLA testing method) to determine chemical compositions of each lime type produced and each calcined lime byproduct/waste type.

(5) Monthly results of chemical composition analysis of each type of lime product produced and calcined byproduct/waste sold.

(6) Annual results of chemical composition analysis of each type of lime byproduct/waste that is not sold.

(7) Method used to determine the quantity of lime produced and/or lime sold.

(8) Monthly amount of lime product sold, by type (tons).

(9) Method used to determine the quantity of calcined lime byproduct/waste sold.

(10) Monthly amount of calcined lime byproduct/waste sold, by type (tons).

(11) Annual amount of calcined lime byproduct/waste that is not sold, by type (tons).

(12) Monthly weight or mass of each lime type produced (tons).

(13) Beginning and end of year inventories for each lime product that is produced.

(14) Beginning and end of year inventories for calcined lime byproducts/wastes sold.

(15) Annual lime production capacity (tons) per facility.

(16) Number of times in the reporting year that missing data procedures were followed to measure lime production (months) or the chemical composition of lime products sold (months).

(17) Indicate whether CO_2 was used on-site (*i.e.* for use in a purification process). If CO_2 was used on-site, provide the information in paragraphs (b)(17)(i) and (b)(17)(ii) of this section.

(i) The annual amount of CO_2 captured for use in the on-site process.

(ii) The method used to determine the amount of CO_2 captured.

Subpart V—[Amended]

38. Section 98.223 is amended by:

a. Revising paragraphs (a)(1), (a)(2)(ii), (b) introductory text, (b)(1), (b)(2), (c), (d) introductory text, and (e).

b. Removing and reserving paragraph (f).

c. Revising paragraph (g).

d. Adding paragraph (i).

§ 98.223 Calculating GHG emissions.

(a) * * *

(1) Use a site-specific emission factor and production data according to paragraphs (b) through (i) of this section.

(2) * * *

(ii) If the Administrator does not approve your requested alternative method within 150 days of the end of the reporting year, you must determine the N_2O emissions for the current reporting period using the procedures specified in paragraph (a)(1) of this section.

(b) You must conduct an annual performance test for each nitric acid train according to paragraphs (b)(1) through (b)(3) of this section.

(1) You must conduct the performance test at the absorber tail gas vent, referred to as the test point, for each nitric acid train according to § 98.224(b) through (f).

(2) You must conduct the performance test under normal process operating conditions.

* * * * *

(c) Using the results of the performance test in paragraph (b) of this section, you must calculate an average site-specific emission factor for each nitric acid train "t" according to Equation V–1 of this section:

$$EF_{N2Ot} = \frac{\sum_{1}^{n} \frac{C_{N2O} * 1.14 \times 10^{-7} * Q}{P}}{n} \qquad \text{(Eq. V-1)}$$

Where:

EF_{N2Ot} = Average site-specific N_2O emissions factor for nitric acid train "t" (lb N_2O generated/ton nitric acid produced, 100 percent acid basis).

C_{N2O} = N_2O concentration for each test run during the performance test (ppm N_2O).

1.14×10^{-7}= Conversion factor (lb/dscf-ppm N_2O).

Q = Volumetric flow rate of effluent gas for each test run during the performance test (dscf/hr).

P = Production rate for each test run during the performance test (tons nitric acid produced per hour, 100 percent acid basis).

n = Number of test runs.

(d) If nitric acid train "t" exhausts to any N_2O abatement technology "N" after the test point, you must determine the destruction efficiency for each N_2O abatement technology "N" according to paragraphs (d)(1), (d)(2), or (d)(3) of this section.

* * * * *

(e) If nitric acid train "t" exhausts to any N_2O abatement technology "N" after the test point, you must determine the annual amount of nitric acid produced on train "t" while N_2O abatement technology "N" is operating according to § 98.224(f). Then you must calculate the abatement utilization factor for each N_2O abatement technology "N" for each nitric acid train "t" according to Equation V–2 of this section.

$$AF_{t,N} = \frac{P_{a,t,N}}{P_{a,t}} \qquad \text{(Eq. V-2)}$$

Where:

$AF_{t,N}$ = Abatement utilization factor of N_2O abatement technology "N" at nitric acid train "t" (fraction of annual production that abatement technology is operating).

$P_{a\ t}$ = Total annual nitric acid production from nitric acid train "t" (ton acid produced, 100 percent acid basis).

$P_{a,t,N}$ = Annual nitric acid production from nitric acid train "t" during which N_2O abatement technology "N" was operational (ton acid produced, 100 percent acid basis).

(f) [Reserved]

(g) You must calculate N_2O emissions for each nitric acid train "t" according to paragraph (g)(1) or (g)(2) of this section.

(1) If nitric acid train "t" exhausts to any N_2O abatement technology "N" after the test point, you must use the emissions factor (determined in Equation V–1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual nitric acid production (determined in paragraph (i) of this section), and the abatement utilization factor (determined in paragraph (e) of this section) according to Equation V–3a of this section:

$$E_{N_2Ot} = \sum_{N=1}^{z} \frac{EF_{N20t} * P_{a,t} * \left(1 - \left(DF_{t,N} * AF_{t,N}\right)\right)}{2205} \qquad \text{(Eq. V-3a)}$$

Where:

E_{N2Ot} = N_2O mass emissions per year for nitric acid train “t” (metric tons).

EF_{N2Ot} = Average site-specific N_2O emissions factor for nitric acid train ”t” (lb N_2O generated/ton acid produced, 100 percent acid basis).

$P_{a\ t}$ = Annual nitric acid production from the train “t” (ton acid produced, 100 percent acid basis).

$DF_{t,N}$ = Destruction efficiency of N_2O abatement technology N that is used on nitric acid train “t” (percent of N_2O removed from air stream).

$AF_{t,N}$ = Abatement utilization factor of N_2O abatement technology “N” for nitric acid train “t” (fraction of annual production that N_2O abatement technology is operating).

2204.63 = Conversion factor (lb/metric ton).

z = Number of N_2O abatement technologies on nitric acid train “t”.

(2) If nitric acid train “t” does not exhaust to any N_2O 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:

$$E_{N_2Ot} = \frac{EF_{N20t} * P_{a,t}}{2205} \qquad \text{(Eq. V-3b)}$$

Where:

E_{N2Ot} = N_2O mass emissions per year for nitric acid train “t” (metric tons).

EF_{N2Ot} = Average site-specific N_2O emissions factor for nitric acid train ”t” (lb N_2O generated/ton acid produced, 100 percent acid basis).

$P_{a,\ t}$ = Annual nitric acid production from nitric acid train “t” (ton acid produced, 100 percent acid basis).

2205 = Conversion factor (lb/metric ton).

* * * * *

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

39. Section 98.224 is amended by:

a. Revising paragraph (a).

b. Revising the first sentence in paragraph (d) introductory text.

c. Revising paragraphs (e) and (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 (a)(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 over the entire campaign. 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 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.

* * * * *

(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. * * *

* * * * *

(e) You must determine the total monthly amount of nitric acid produced and the monthly amount of nitric acid produced while N_2O abatement technology (located after the test point) is operating from each nitric acid train according to the methods in paragraphs (c)(1) or (c)(2) of this section.

(f) You must determine the annual amount of nitric acid produced and the annual amount of nitric acid produced while N_2O abatement technology (located after the test point) is operating for each train by summing the respective monthly nitric acid quantities determined in paragraph (e) of this section.

40. Section 98.226 is amended by revising the introductory text, paragraph (g), and paragraphs (m) and (n) introductory text to read as follows:

§ 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 (o) of this section.

* * * * *

(g) Number of different N_2O abatement technologies per nitric acid train “t”.

* * * * *

(m) If you conducted a performance test and calculated a site-specific emissions factor according to § 98.223(a)(1), each annual report must also contain the information specified in paragraphs (m)(1) through (m)(7) of this section.

* * * * *

(n) If you requested Administrator approval for an alternative method of determining N_2O emissions under § 98.223(a)(2), each annual report must also contain the information specified in paragraphs (n)(1) through (n)(4) of this section for each nitric acid production facility.

* * * * *

Subpart Z—[Amended]

41. Section 98.264 is amended by revising paragraphs (a) and (b) to read as follows:

§ 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. Conduct the representative bulk sampling using the appropriate industry consensus standard or applicable standard method in the Association of Fertilizer and Phosphate Chemists Analytical Methods Manual 10th Edition (incorporated by reference, *see* § 98.7). 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 inorganic carbon content of each monthly grab sample of phosphate rock (consumed in the production of phosphoric acid) using the applicable standard method in the Association of Fertilizer and Phosphate Chemists Analytical Methods Manual 10th Edition (incorporated by reference, *see* § 98.7).

* * * * *

42. Section 98.265 is amended by revising the second sentence of paragraph (a) to read as follows:

§ 98.265 Procedures for estimating missing data.

* * * * *

(a) * * * Alternatively, you must determine substitute data value by calculating the arithmetic average of the quality-assured values of inorganic carbon contents of phosphate rock of origin i from samples immediately preceding and immediately following the missing data incident. * * *

* * * * *

43. Section 98.266 is amended by revising the introductory text, paragraph (c), and paragraph (f) introductory text; and by adding paragraph (f)(9) to read as follows:

§ 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.

* * * * *

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

* * * * *

(f) If you do not use a CEMS to measure emissions, then you must report the information in paragraphs (f)(1) through (f)(9) of this section.

* * * * *

(9) Annual process CO_2 emissions from phosphoric acid production facility (metric tons).

Subpart CC—[Amended]

44. Section 98.294 is amended by revising the third sentence of paragraph (a)(1) to read as follows:

§ 98.294 Monitoring and QA/QC requirements.

* * * * *

(a) * * *

(1) * * * The modified method referred to above adjusts the regular ASTM method to express the results in terms of trona.* * *

* * * * *

45. Section 98.296 is amended by revising paragraphs (a)(1), (b)(3), (b)(6), and (b)(10); and by removing paragraphs (11)(iv) through (11)(vi) to read as follows:

§ 98.296 Data reporting requirements.

* * * * *

(a) * * *

(1) Annual consumption of trona or liquid alkaline feedstock for each manufacturing line (tons).

* * * * *

(b) * * *

(3) Annual production of soda ash for each manufacturing line (tons).

* * * * *

(6) Monthly production of soda ash for each manufacturing line (tons).

* * * * *

(10) If you produce soda ash using the liquid alkaline feedstock process and use the site-specific emission factor method (§ 98.293(b)(3)) to estimate emissions then you must report the following relevant information for each manufacturing line or stack:

(i) Stack gas volumetric flow rate during performance test (dscfm).

(ii) Hourly CO_2 concentration during performance test (percent CO_2).

(iii) CO_2 emission factor (metric tons CO_2/metric tons of process vent flow from mine water stripper/evaporator).

(iv) CO_2 mass emission rate during performance test (metric tons/hour).

* * * * *

Subpart EE—[Amended]

46. Section 98.314 is amended by revising paragraph (e) to read as follows:

§ 98.314 Monitoring and QA/QC requirements.

* * * * *

(e) You must determine the quantity of carbon-containing waste generated from each titanium dioxide production line on a monthly basis using plant instruments used for accounting purposes including direct measurement weighing the carbon-containing waste not used during the process (by belt scales or a similar device) or through the use of sales records.

* * * * *

47. Section 98.316 is amended by revising paragraphs (b)(9) and (b)(11) to read as follows:

§ 98.316 Data reporting requirements.

* * * * *

(b) * * *

(9) Monthly carbon content factor of petroleum coke (percent by weight expressed as a decimal fraction).

* * * * *

(11) Carbon content for carbon-containing waste for each process line (percent by weight expressed as a decimal fraction).

* * * * *

Subpart GG—[Amended]

48. Section 98.333 is amended by revising the definitions of "$(\text{Electrode})_k$" and "$(C_{\text{Electrode}})_k$" in Equation GG–1 of paragraph (b)(1) to read as follows:

§ 98.333 Calculating GHG emissions.

* * * * *

(b) * * *

(1) * * *

$(\text{Electrode})_k$ = Annual mass of carbon electrode consumed in furnace "k" (tons).

$(C_{\text{Electrode}})_k$ = Carbon content of the carbon electrode consumed in furnace "k", from the annual carbon analysis (percent by weight, expressed as a decimal fraction).

* * * * *

49. Section 98.336 is amended by revising paragraph (a) introductory text; and by revising paragraphs (b)(1), (b)(7), and (b)(10) to read as follows:

§ 98.336 Data reporting requirements.

* * * * *

(a) If a CEMS is used to measure CO_2 emissions, then you must report under this subpart the relevant information required for the Tier 4 Calculation Methodology in § 98.36 and the information listed in this paragraph (a):

* * * * *

(b) * * *

(1) Identification number and annual process CO_2 emissions from each individual Waelz kiln or electrothermic furnace (metric tons).

* * * * *

(7) Carbon content of each carbon-containing input material charged to each kiln or furnace (including zinc bearing material, flux materials, and other carbonaceous materials) from the annual carbon analysis or from information provided by the material supplier for each kiln or furnace (percent by weight, expressed as a decimal fraction).

* * * * *

(10) Carbon content of the carbon electrode used in each furnace from the annual carbon analysis or from information provided by the material supplier (percent by weight, expressed as a decimal fraction).

* * * * *

Subpart HH—[Amended]

50. Section 98.340 is amended by revising paragraph (b) to read as follows:

§ 98.340 Definition of the source category.

* * * * *

(b) This source category does not include Resource Conservation and Recovery Act (RCRA) Subtitle C or Toxic Substances Control Act (TSCA) hazardous waste landfills, dedicated construction and demolition waste landfills, or industrial waste landfills.

* * * * *

51. Section 98.343 is amended by:

a. In paragraph (a)(1), revising Equation HH–1 and the definitions of "x," "S," "W_X," "MCF," "DOC_F," "F," and "k" in Equation HH–1; and removing the definition of "L_0" in Equation HH–1.

b. Revising the last sentence of paragraph (a)(2).

c. Redesignating paragraph (a)(3) as (a)(4) and revising new paragraph (a)(4).

d. Adding a new paragraph (a)(3).

e. Revising paragraph (b)(1), and revising paragraph (b)(2) introductory text.

f. Revising paragraphs (b)(2)(ii), (b)(2)(iii)(A), and (b)(2)(iii)(B); and revising paragraph (c) introductory text.

§ 98.343 Calculating GHG emissions.

(a) * * *

(1) * * *

$$G_{CH4} = \sum_{x=S}^{T-1} \left\{ W_x \times MCF \times DOC \times DOC_F \times F \times \frac{16}{12} \times \left(e^{-k(T-x-1)} - e^{-k(T-x)} \right) \right\} \qquad \text{(Eq. HH-1)}$$

* * * * *

x = Year in which waste was disposed.

S = Start year of calculation. Use the year 1960 or the opening year of the landfill, whichever is more recent.

* * * * *

W_X = Quantity of waste disposed in the landfill in year x from measurement data, tipping fee receipts, or other company records (metric tons, as received (wet weight)).

MCF = Methane correction factor (fraction). Use the default value of 1

* * * * *

DOC_F = Fraction of DOC dissimilated (fraction). Use the default value of 0.5.

F = Fraction by volume of CH_4 in landfill gas from measurement data on a dry basis, if available (fraction); default is 0.5.

k = Rate constant from Table HH–1 of this subpart (yr^{-1}). Select the most applicable k value for the majority of the past 10 years (or operating life, whichever is shorter).

(2) * * * For years when waste composition data are not available, use the bulk waste parameter values for k and DOC in Table HH–1 of this subpart for the total quantity of waste disposed in those years.

(3) Beginning in the first emissions monitoring year (2010 or later) and for each year thereafter, if scales are in place, you must determine the annual quantity of waste (in metric tons as received, *i.e.,* wet weight) disposed of in the landfill using paragraph (a)(3)(i) of this section for all containers and for all vehicles, other than passenger cars or light duty pickup trucks, used to haul waste to the landfill. If scales are not in place, you must use paragraph (a)(3)(ii) of this section to determine the annual quantity of waste disposed. For waste hauled to the landfill in passenger cars or light duty pickup trucks, you may use either paragraph (a)(3)(i) or paragraph (a)(3)(ii) of this section to determine the annual quantity of waste disposed. The approach used to determine the annual quantity of waste disposed of must be documented in the monitoring plan.

(i) Use direct mass measurements of each individual load received at the landfill using either of the following methods:

(A) Weigh using mass scales each vehicle or container used to haul waste as it enters the landfill or disposal area; weigh using mass scales each vehicle or container after it has off-loaded the waste; determine the quantity of waste received from the individual load as the difference in the two mass measurements; and determine the annual quantity of waste received as the sum of all waste loads received during the year. Alternatively, you may determine annual quantity of waste by summing the weights of all vehicles and containers entering the landfill and subtracting from it the sum of all the weights of vehicles and containers after they have off-loaded the waste in the landfill.

(B) Weigh using mass scales each vehicle or container used to haul waste as it enters the landfill or disposal area; determine a representative tare weight by vehicle or container type by weighing no less than 5 of each type of vehicle or container after it has off-loaded the waste; determine the quantity of waste received from the individual load as the difference between the measured weight in and the tare weight determined for that container/vehicle type; and determine the annual quantity of waste received as the sum of all waste loads received during the year.

(ii) Determine the working capacity in units of mass for each type of container or vehicle used to haul waste to the landfill (*e.g.,* using volumetric capacity and waste density measurements; direct measurement of a selected number of passenger vehicles and light duty pick-up trucks; or similar methods); record the number of loads received at the landfill by vehicle/container type; calculate the annual mass per vehicle/container type as the mass product of the number of loads of that vehicle/container multiplied by its working capacity; and calculate the annual quantity of waste received as the sum of the annual mass per vehicle/container type across all of the vehicle/container types used to haul waste to the landfill.

(4) For years prior to the first emissions monitoring year, use methods in paragraph (a)(3) of this section when waste disposal quantity data are readily available. When waste disposal quantity data are not readily available, W_x shall be estimated using one of the applicable methods in paragraphs (a)(4)(i) through (a)(4)(iii) of this section. You must determine which method is most applicable to the conditions and disposal history of your facility. Historical waste disposal quantities should only be determined once, as part of the first annual report, and the same values should be used for all subsequent annual reports, supplemented by the next year's data on new waste disposal.

(i) Assume all prior years waste disposal quantities are the same as the waste quantity in the first year for which waste quantities are available.

(ii) Use the estimated population served by the landfill in each year, the values for national average per capita waste generation, and fraction of generated waste disposed of in solid waste disposal sites found in Table HH–2 of this subpart, and calculate the waste quantity landfilled using Equation HH–2 of this section.

$$W_x = POP_x \times WDR_x \qquad \text{(Eq. HH-2)}$$

Where:

W_x = Quantity of waste placed in the landfill in year x (metric tons, wet basis).

POP_x = Population served by the landfill in year x from city population, census data, or other estimates (capita).

WDR_x = Average per capita waste disposal rate for year x from Table HH–2 of this subpart (metric tons per capita per year, wet basis; tons/cap/yr).

(iii) Use a constant average waste disposal quantity calculated using Equation HH–3 of this section for each year the landfill was in operation (*i.e.,* from the first year accepting waste until the last year for which waste disposal data is unavailable, inclusive).

$$W_x = \frac{LFC}{(YrData - YrOpen + 1)} \qquad \text{(Eq. HH-3)}$$

Where:

W_X = Quantity of waste placed in the landfill in year x (metric tons, wet basis).

LFC = Landfill capacity or, for operating landfills, capacity of the landfill used (or the total quantity of waste-in-place) at the end of the year prior to the year when waste disposal data are available from design drawings or engineering estimates (metric tons).

YrData = Year in which the landfill last received waste or, for operating landfills, the year prior to the first reporting year when waste disposal data is first available from company records, or best available data.

YrOpen = Year in which the landfill first received waste from company records or best available data. If no data are available for estimating YrOpen for a closed landfill, use 30 years as the default operating life of the landfill.

(b) * * *

(1) If you continuously monitor the flow rate, CH_4 concentration, temperature, pressure, and, if necessary, moisture content of the landfill gas that is collected and routed to a destruction device (before any treatment equipment) using a monitoring meter specifically for CH_4 gas, as specified in § 98.344, you must use this monitoring system and calculate the quantity of CH_4 recovered for destruction using Equation HH–4 of this section. A fully integrated system that directly reports CH_4 content requires no other calculation than summing the results of all monitoring periods for a given year.

$$R = \sum_{n=1}^{N}\left((V)_n \times (K_{MC})_n \times \frac{(C)_n}{100\%} \times 0.0423 \times \frac{520^{o}R}{(T)_n} \times \frac{(P)_n}{1\ \text{atm}} \times \frac{0.454}{1,000}\right) \qquad \text{(Eq. HH-4)}$$

Where:

R = Annual quantity of recovered CH_4 (metric tons CH_4).

N = Total number of measurement periods in a year. Use daily averaging periods for continuous monitoring system and N = 365 (or N = 366 for leap years). For weekly sampling, as provided in paragraph (b)(2) of this section, use N = 52.

n = Index for measurement period.

$(V)_n$ = Cumulative volumetric flow for the measurement period in actual cubic feet (acf). If the flow rate meter automatically corrects for temperature and pressure, replace "$520\,^{\circ}R/(T)_n \times (P)_n/1$ atm" with "1".

$(K_{MC})_n$ = Moisture correction term for the measurement period, volumetric basis, as follows: $(K_{MC})_n = 1$ when $(V)_n$ and $(C)_n$ are both measured on a dry basis or if both are measured on a wet basis; $(K_{MC})_n = [1 - (f_{H2O})_n]$ when $(V)_n$ is measured on a wet basis and $(C)_n$ is measured on a dry basis; and $(K_{MC})_n = 1/[1 - (f_{H2O})_n]$ when $(V)_n$ is measured on a dry basis and $(C)_n$ is measured on a wet basis.

$(f_{H2O})_n$ = Average moisture content of landfill gas during the measurement period, volumetric basis (cubic feet water per cubic feet landfill gas).

$(C_{CH4})_n$ = Average CH_4 concentration of landfill gas for the measurement period (volume %).

0.0423 = Density of CH_4 lb/cf at 520 °R or 60° F and 1 atm.

$(T)_n$ = Temperature at which flow is measured for the measurement period (° R).

$(P)_n$ = Pressure at which flow is measured for the measurement period (atm).

0.454/1,000 = Conversion factor (metric ton/lb).

(2) If you do not continuously monitor according to paragraph (b)(1) of this section, you must determine the flow rate, CH_4 concentration, temperature, pressure, and moisture content of the landfill gas that is collected and routed to a destruction device (before any treatment equipment) according to the requirements in paragraphs (b)(2)(i) through (b)(2)(iii) of this section and calculate the quantity of CH_4 recovered for destruction using Equation HH–4 of this section.

* * * * *

(ii) Determine the CH_4 concentration in the landfill gas that is collected and routed to a destruction device (before any treatment equipment) in a location near or representative of the location of the gas flow meter once each calendar week, with at least three days between measurements.

(iii) * * *

(A) Determine the temperature and pressure in the landfill gas that is collected and routed to a destruction device (before any treatment equipment) in a location near or representative of the location of the gas flow meter once each calendar week, with at least three days between measurements.

(B) If the CH_4 concentration is determined on a dry basis and flow is determined on a wet basis or CH_4 concentration is determined on a wet basis and flow is determined on a dry basis, and the flow meter does not automatically correct for moisture content, determine the moisture content in the landfill gas that is collected and routed to a destruction device (before any treatment equipment) in a location near or representative of the location of the gas flow meter once each calendar week, with at least three days between measurements.

(c) For all landfills, calculate CH_4 generation (adjusted for oxidation in cover materials) and actual CH_4 emissions (taking into account any CH_4 recovery, and oxidation in cover materials) according to the applicable methods in paragraphs (c)(1) through (c)(3) of this section.

* * * * *

52. Section 98.344 is amended by:

a. Revising paragraph (a).

b. Revising the first sentence of paragraph (b).

c. Revising paragraphs (b)(6)(ii), (b)(6)(ii)(A), and (b)(6)(ii)(B).

d. Revising the definition of "C_{CH4}" in Equation HH–9 of paragraph (b)(6)(iii).

e. Revising the second and third sentences of paragraph (c).

f. Revising paragraph (d).

g. Amending paragraph (e) by revising the first sentence.

§ 98.344 Monitoring and QA/QC requirements.

(a) Mass measurement equipment used to determine the quantity of waste landfilled on or after January 1, 2010 must meet the requirements for weighing equipment as described in "Specifications, Tolerances, and Other Technical Requirements For Weighing and Measuring Devices" NIST Handbook 44 (2009) (incorporated by reference, *see* § 98.7).

(b) For landfills with gas collection systems, operate, maintain, and calibrate a gas composition monitor capable of measuring the concentration of CH_4 in the recovered landfill gas using one of the methods specified in paragraphs (b)(1) through (b)(6) of this section or as specified by the manufacturer. * * *

* * * * *

(6) * * *

(ii) Determine a non-methane organic carbon correction factor at the routine sampling location no less frequently than once a reporting year following the requirements in paragraphs (b)(6)(ii)(A) through (b)(6)(ii)(C) of this section.

(A) Take a minimum of three grab samples of the landfill gas with a minimum of 20 minutes between samples and determine the methane composition of the landfill gas using one of the methods specified in paragraphs (b)(1) through (b)(5) of this section.

(B) As soon as practical after each grab sample is collected and prior to the collection of a subsequent grab sample, determine the total gaseous organic concentration of the landfilll gas using either Method 25A or 25B at 40 CFR part 60, appendix A–7 as specified in paragraph (b)(6)(i) of this section.

* * * * *

(iii) * * *

C_{CH4} = Methane concentration in the landfill gas (volume %) for use in Equation HH–4.

* * * * *

(c) * * * Each gas flow meter shall be recalibrated either biennially (every 2 years) or at the minimum frequency specified by the manufacturer. Except as provided in § 98.343(b)(2)(i), each gas flow meter must be capable of correcting for the temperature and pressure and, if necessary, moisture content.

* * * * *

(d) All temperature, pressure, and if necessary, moisture content monitors must be calibrated using the procedures and frequencies specified by the manufacturer.

(e) The owner or operator shall document the procedures used to ensure the accuracy of the estimates of disposal quantities and, if applicable, gas flow rate, gas composition, temperature, pressure, and moisture content measurements. * * *

53. Section 98.346 is amended by revising paragraphs (a), (b), (d)(1), (f), (h), (i)(1), (i)(2), (i)(3), (i)(4), (i)(5), and (i)(7) to read as follows:

§ 98.346 Data reporting requirements.

* * * * *

(a) A classification of the landfill as "open" (actively received waste in the reporting year) or "closed" (no longer receiving waste), the year in which the landfill first started accepting waste for disposal, the last year the landfill accepted waste (for open landfills, enter the estimated year of landfill closure), the capacity (in metric tons) of the landfill, an indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 years (*e.g.,* used several times a year for the past 10 years, used at least once a year for the past 10 years, used occasionally but not every year over the past 10 years, not used), an indication as to whether scales are present at the landfill, and the waste disposal quantity for each year of landfilling required to be included when using Equation HH–1 of this subpart (in metric tons, wet weight).

(b) Method for estimating reporting year and historical waste disposal quantities, reason for its selection, and the range of years it is applied. For years when waste quantity data are determined using the methods in § 98.343(a)(3), report separately the quantity of waste determined using the methods in § 98.343(a)(3)(i) and the quantity of waste determined using the methods in § 98.343(a)(3)(ii). For historical waste disposal quantities that were not determined using the methods in § 98.343(a)(3), provide the population served by the landfill for each year the Equation HH–2 of this subpart is applied, if applicable, or, for open landfills using Equation HH–3 of this subpart, provide the value of landfill capacity (LFC) used in the calculation.

* * * * *

(d) * * *

(1) Degradable organic carbon (DOC), methane correction factor (MCF), and fraction of DOC dissimilated (DOC_F) values used in the calculations.

* * * * *

(f) The surface area of the landfill containing waste (in square meters), identification of the type of cover material used (as either organic cover, clay cover, sand cover, or other soil mixtures). If multiple cover types are used, the surface area associated with each cover type.

* * * * *

(h) For landfills without gas collection systems, the annual methane emissions (*i.e.,* the methane generation, adjusted for oxidation, calculated using Equation HH–5 of this subpart), reported in metric tons CH_4, and an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in § 98.6) are present at this landfill.

(i) * * *

(1) Total volumetric flow of landfill gas collected for destruction for the reporting year (cubic feet at 520 °R or 60 °F and 1 atm).

(2) Annual average CH_4 concentration of landfill gas collected for destruction (percent by volume).

(3) Monthly average temperature and pressure for each month at which flow is measured for landfill gas collected for destruction, or statement that temperature and/or pressure is incorporated into internal calculations run by the monitoring equipment.

(4) An indication as to whether flow was measured on a wet or dry basis, an indication as to whether CH_4 concentration was measured on a wet or dry basis, and if required for Equation HH–4, monthly average moisture content for each month at which flow is measured for landfill gas collected for destruction.

(5) An indication of whether destruction occurs at the landfill facility or off-site. If destruction occurs at the landfill facility, also report an indication of whether a back-up destruction device is present at the landfill, the annual operating hours for the primary destruction device, the annual operating hours for the back-up destruction device (if present), and the destruction efficiency used (percent).

* * * * *

(7) A description of the gas collection system (manufacturer, capacity, and number of wells), the surface area (square meters) and estimated waste depth (meters) for each area specified in Table HH–3 of this subpart, the estimated gas collection system efficiency for landfills with this gas collection system, the annual operating hours of the gas collection system, and an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in § 98.6) are present at the landfill.

* * * * *

54. Section 98.347 is amended by adding a second sentence to the introductory text to read as follows:

§ 98.347 Records that must be retained.

* * * You must retain records of all measurements made to determine tare weights and working capacities by vehicle/container type if these are used to determine the annual waste quantities.

55. Section 98.348 is revised to read as follows:

§ 98.348 Definitions.

Except as specified in this section, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Dedicated construction and demolition landfill means a landfill that only receives materials generated from the construction or destruction of structures such as buildings, roads, and bridges.

Destruction device means a flare, thermal oxidizer, boiler, turbine, internal combustion engine, or any other combustion unit used to destroy or oxidize methane contained in landfill gas.

Industrial waste landfill means any landfill other than a municipal solid waste landfill, a RCRA Subtitle C hazardous waste landfill, or a TSCA hazardous waste landfill, in which industrial solid waste, such a RCRA Subtitle D wastes (nonhazardous industrial solid waste, defined in 40 CFR 257.2), commercial solid wastes, or conditionally exempt small quantity generator wastes, is placed. An industrial waste landfill includes all disposal areas at the facility.

Solid waste has the meaning established by the Administrator pursuant to the Solid Waste Disposal Act [42 U.S.C.A. 6901 *et seq.*]

Working capacity means the maximum volume or mass of waste that is actually placed in the landfill from an individual or representative type of container (such as a tank, truck, or roll-off bin) used to convey wastes to the landfill, taking into account that the container may not be able to be 100 percent filled and/or 100 percent emptied for each load.

56. Table HH–1 to subpart HH is amended by:

a. Revising the entries for "k (precipitation <20 inches/year and no leachate recirculation)," "k (precipitation 20–40 inches/year and no leachate recirculation)," and "k (precipitation >40 inches/year or for landfill areas with leachate recirculation)."

b. Adding an entry for "DOC (bulk waste)" to follow the revised entry for "k (precipitation plus recirculated leachate[a] >40 inches/year)."

c. Removing the entry for "L_0 (Equivalent to DOC = 0.2028 when MCF = 1, DOC_F = 0.5, and F = 0.5)."

d. Adding an entry for "DOC (inerts, *e.g.* glass, plastics, metal, cement)" to follow the entry for "DOC (sewage sludge)."

e. Revising the entries for "k (food waste)," "k (garden)," "k (paper)," "k (wood and straw)," "k (textiles)," "k (diapers)," and "k (sewage sludge)."

f. Adding a new entry for "k (inerts *e.g.* glass, plastics, metal, cement)."

g. Redesignating footnote "a" as footnote "b," and revising new footnote "b."

h. Adding a new footnote "a."

TABLE HH–1 TO SUBPART HH—EMISSIONS FACTORS, OXIDATION FACTORS AND METHODS

Factor	Default value	Units
Waste Model—Bulk Waste Option		
k (precipitation plus recirculated leachate[a] <20 inches/year)	0.02	yr^{-1}.
k (precipitation plus recirculated leachate[a] 20–40 inches/year)	0.038	yr^{-1}.
k (precipitation plus recirculated leachate[a] >40 inches/year)	0.057	yr^{-1}.
DOC (bulk waste)	0.20	Weight fraction, wet basis.
* * * *	*	* *
DOC (inerts, *e.g.* glass, plastics, metal, cement)	0.00	Weight fraction, wet basis.
* * * *	*	* *
k (food waste)	[b] 0.06 to 0.185	yr^{-1}.
k (garden)	[b] 0.05 to 0.10	yr^{-1}.
k (paper)	[b] 0.04 to 0.06	yr^{-1}.
k (wood and straw)	[b] 0.02 to 0.03	yr^{-1}.
k (textiles)	[b] 0.04 to 0.06	yr^{-1}.
k (diapers)	[b] 0.05 to 0.10	yr^{-1}.
k (sewage sludge)	[b] 0.06 to 0.185	yr^{-1}.
k (inerts *e.g.* glass, plastics, metal, cement)	[b] 0.00	yr^{-1}.
* * * *	*	* *

[a] Recirculated leachate (in inches/year) is the total volume of leachate recirculated divided by the area of the portion of the landfill containing waste with appropriate unit conversions.

[b] Use the lesser value when the potential evapotranspiration rate exceeds the mean annual precipitation rate plus recirculated leachate. Use the greater value when the potential evapotranspiration rate does not exceed the mean annual precipitation rate plus recirculated leachate.

57. Table HH–2 to subpart HH is amended by:

a. Removing the entries for "1950" through "1959."

b. Revising the entries for "1989" through "2006."

c. Adding entries for "2007" through "2009."

TABLE HH–2 TO SUBPART HH—U.S. PER CAPITA WASTE DISPOSAL RATES

Year	Waste per capita ton/cap/yr
* * *	* *
1989	0.83
1990	0.82
1991	0.76
1992	0.74
1993	0.76
1994	0.75
1995	0.70
1996	0.68
1997	0.69
1998	0.75
1999	0.75
2000	0.80
2001	0.91
2002	1.02
2003	1.02
2004	1.01
2005	0.98
2006	0.95
2007	0.95
2008	0.95
2009	0.95

58. Table HH–3 to subpart HH–3 is amended by revising the entries for "A2: Area without active gas collection, regardless of cover type H2: Average depth of waste in area A2," "A3: Area with daily soil cover and active gas collection H3: Average depth of waste in area A3," "A4: Area with an intermediate soil cover and active gas collection H4: Average depth of waste in area A4," and "A5: Area with a final soil and geomembrane cover system and active gas collection H5: Average depth of waste in area A5" to read as follows:

TABLE HH–3 TO SUBPART HH—LANDFILL GAS COLLECTION EFFICIENCIES

Description	Landfill gas collection efficiency
* * * * * *	*
A2: Area without active gas collection, regardless of cover type	CE2: 0%.
A3: Area with daily soil cover and active gas collection	CE3: 60%.
A4: Area with an intermediate soil cover, or a final soil cover not meeting the criteria for A5 below, and active gas collection	CE4: 75%.
A5: Area with a final soil cover of 3 feet or thicker of clay and/or geomembrane cover system and active gas collection	CE5: 95%.
* * * * * *	*

Subpart LL—[Amended]

59. Section 98.386 is amended by adding a third sentence to paragraphs (a)(5) and (a)(6) to read as follows:

§ 98.386 Data reporting requirements.

* * * * *

(a) * * *

(5) * * * Those products that enter the facility, but are not reported in (a)(1), shall not be reported under this paragraph.

(6) * * * Those products that enter the facility, but are not reported in (a)(2), shall not be reported under this paragraph.

* * * * *

Subpart MM—[Amended]

60. Section 98.393 is amended by:

a. In paragraph (a)(1), revising the only sentence and the definition of "Product$_i$" in Equation MM–1.

b. Revising the definition of "Product$_i$" in Equation MM–2 of paragraphs (a)(2).

c. Revising the only sentence of paragraph (b)(1) and the first sentence in paragraph (f)(1).

d. Revising the definition of "%Vol$_i$" in Equation MM–8 in paragraph (h)(1).

e. Revising Equation MM–9 and the definition of "%Vol$_j$" in paragraph (h)(2).

f. Revising paragraphs (h)(3) and (h)(4).

g. Adding paragraph (i).

§ 98.393 Calculating GHG emissions.

(a) * * *

(1) Except as provided in paragraphs (h) and (i) of this section, any refiner, importer, or exporter shall calculate CO_2 emissions from each individual petroleum product and natural gas liquid using Equation MM–1 of this section.

* * * * *

Product$_i$ = Annual volume of product "i" produced, imported, or exported by the reporting party (barrels). For refiners, this volume only includes products ex refinery gate, and excludes products that entered the refinery but are not reported under § 98.396(a)(1). For natural gas liquids, volumes shall reflect the individual components of the product as listed in Table MM–1 of this subpart.

* * * * *

(2) * * *

Product$_i$ = Annual mass of product "i" produced, imported, or exported by the reporting party (metric tons). For refiners, this mass only includes products ex refinery gate, and excludes products that entered the refinery but are not reported under § 98.396(a)(1).

* * * * *

(b) * * *

(1) Except as provided in paragraphs (h) and (i) of this section, any refiner shall calculate CO_2 emissions from each non-crude feedstock using Equation MM–2 of this section.

* * * * *

(f) * * *

(1) *Calculation Method 1.* To determine the emission factor (*i.e.,* EF$_i$ in Equation MM–1) for solid products, multiply the default carbon share factor (*i.e.,* percent carbon by mass) in column B of Table MM–1 of this subpart for the appropriate product by 44/12. * * *

* * * * *

(h) * * *

(1) * * *

%Vol$_i$ = Percent volume of product "i" that is petroleum-based, not including any denaturant that may be present in any ethanol product, expressed as a fraction (*e.g.,* 75% would be expressed as 0.75 in the above equation).

(2) * * *

$$CO_{2j} = Feedstock_j * EF_j * \%Vol_j \qquad \text{(Eq. MM-9)}$$

* * * * *

%Vol$_j$ = Percent volume of feedstock "j" that is petroleum-based, not including any denaturant that may be present in any ethanol product, expressed as a fraction (*e.g.,* 75% would be expressed as 0.75 in the above equation).

(3) Calculation Method 2 procedures for products.

(i) A reporter using Calculation Methodology 2 of this subpart to determine the emission factor of a petroleum product that does not contain denatured ethanol must calculate the CO_2 emissions associated with that product using Equation MM–10 of this section in place of Equation MM–1 of this section.

$$CO_{2i} = \left(Product_i * EF_i\right) - \left(Product_i * EF_m * \%Vol_m\right) \qquad \text{(Eq. MM-10)}$$

Where:

CO_{2i} = Annual CO_2 emissions that would result from the complete combustion or oxidation of each product "i" (metric tons).

Product$_i$ = Annual volume of each petroleum product "i" produced, imported, or exported by the reporting party (barrels). For refiners, this volume only includes products ex refinery gate.

EF$_i$ = Product-specific CO_2 emission factor (metric tons CO_2 per barrel).

EF$_m$ = Default CO_2 emission factor from Table MM–2 of this subpart that most closely represents the component of product "i" that is biomass-based.

%Vol$_m$ = Percent volume of petroleum product "i" that is biomass-based, expressed as a fraction (*e.g.,* 75% would be expressed as 0.75 in the above equation).

(ii) In the event that a petroleum product contains denatured ethanol, importers and exporters must follow Calculation Method 1 procedures in paragraph (h)(1); and refineries must sample the petroleum portion of the blended biomass-based fuel prior to blending and calculate CO_2 emissions using Equation MM–10a of this section.

$$CO_{2i} = \text{Product}_p * EF_i \qquad \text{(Eq. MM-10a)}$$

Where:

CO_{2i} = Annual CO_2 emissions that would result from the complete combustion or oxidation of each biomass-blended fuel "i" (metric tons).

Product_p = Annual volume of the petroleum-based portion of each biomass blended fuel "i" produced by the refiner (barrels).

EF_i = Petroleum product-specific CO_2 emission factor (metric tons CO_2 per barrel).

(4) Calculation Method 2 procedures for non-crude feedstocks.

(i) A refiner using Calculation Method 2 of this subpart to determine the emission factor of a non-crude petroleum feedstock that does not contain denatured ethanol must calculate the CO_2 emissions associated with that feedstock using Equation MM–11 of this section in place of Equation MM–2 of this section.

$$CO_{2j} = \left(\text{Feedstock}_j * EF_j\right) - \left(\text{Feedstock}_j * EF_m * \%\text{Vol}_m\right) \qquad \text{(Eq. MM-11)}$$

Where:

$CO_{2j} = (\text{Feedstock}_j * EF_j)\text{-}(\text{Feedstock}_j * EF_m * \%\text{Vol}_m)$ (Eq. MM–11)

Where:

CO_{2j} = Annual CO_2 emissions that would result from the complete combustion or oxidation of each non-crude feedstock "j" (metric tons).

Feedstock_j = Annual volume of each petroleum product "j" that enters the refinery to be further refined or otherwise used on site (barrels).

EF_j = Feedstock-specific CO_2 emission factor (metric tons CO_2 per barrel).

EF_m = Default CO_2 emission factor from Table MM–2 of this subpart that most closely represents the component of petroleum product "j" that is biomass-based.

$\%\text{Vol}_m$ = Percent volume of non-crude feedstock "j" that is biomass-based, expressed as a fraction (*e.g.,* 75% would be expressed as 0.75 in the above equation).

(ii) In the event that a non-crude feedstock contains denatured ethanol, refiners must follow Calculation Method 1 procedures in paragraph (h) (2) of this section.

(i) Optional procedures for blended products that do not contain biomass.

(1) In the event that a reporter produces, imports, or exports a blended product that does not include biomass, the reporter may calculate emissions for the blended product according to the method in paragraph (i)(2) of this section. In the event that a refiner receives a blended non-crude feedstock that does not include biomass, the refiner may calculate emission for the blended non-crude feedstock according to the method in paragraph (i)(3) of this section. The procedures in this section may be used only if all of the following criteria are met:

(i) The reporter knows the relative proportion of each component of the blend (*i.e.,* the mass or volume percentage).

(ii) Each component of blended product "i " or blended non-crude feedstock "j " meets the strict definition of a product listed in Table MM–1.

(iii) The blended product or non-crude feedstock is not comprised entirely of natural gas liquids.

(iv) The reporter uses Calculation Method 1.

(v) Solid components are blended only with other solid components.

(2) The reporter must calculate emissions for the blended product using Equation MM–12 of this section in place of Equation MM–1 of this section.

$$CO_{2i} = \sum \left[\textit{Blending Component}_{i \ldots n} * EF_{i \ldots n}\right] \qquad \text{(Eq. MM-12)}$$

Where:

CO_{2i} = Annual CO_2 emissions that would result from the complete combustion or oxidation of a blended product "i" (metric tons).

$\text{Blending Component}_{i \ldots n}$ = Annual volume or mass of each blending component that is blended (barrels or metric tons).

$EF_{i \ldots n}$ = CO_2 emission factors specific to each blending component (metric tons CO_2 per barrel or per metric ton of product).

n = Number of blending components blended into blended product "i".

(3) For refineries, the reporter must calculate emissions for the blended non-crude feedstock using Equation MM–13 of this section in place of Equation MM–2 of this section.

$$CO_{2i} = \sum \left[\textit{Blending Component}_{i \ldots n} * EF_{i \ldots n}\right] \qquad \text{(Eq. MM-13)}$$

Where:

CO_{2j} = Annual CO_2 emissions that would result from the complete combustion or oxidation of a blended non-crude feedstock "j" (metric tons).

$\text{Blending Component}_{i * * * n}$ = Annual volume or mass of each blending component that is blended (barrels or metric tons).

$EF_{i * * * n}$ = CO_2 emission factors specific to each blending component (metric tons CO_2 per barrel or per metric ton of product).

n = Number of blending components blended into blended non-crude feedstock "j".

(4) For refineries, if a blending component "k" used in paragraph (i)(2) of this section enters the refinery before blending as non-crude feedstock:

(i) The emissions that would result from the complete combustion or oxidation of non-crude feedstock "k" must still be calculated separately using Equation MM–2 of this section and applied in Equation MM–4 of this section.

(ii) The quantity of blending component " k" applied in Equation MM–12 of this section and the quantity of non-crude feedstock "k" applied in Equation MM–2 of this section must be determined using the same method or practice.

61. Section 98.394 is amended by revising paragraphs (d)(1), (d)(3), and (d)(4) to read as follows:

§ 98.394 Monitoring and QA/QC requirements.

(d) * * *

(1) A representative sample or multiple representative samples of each batch of crude oil shall be taken according to an appropriate standard method published by a consensus-based standards organization.

* * * * *

(3) API gravity shall be measured using an appropriate standard method published by a consensus-based standards organization. The weighted average API gravity for each batch shall be calculated by multiplying the volume associated with each representative sample by the API gravity, adding these values for all the samples, and then dividing that total value by the volume of the batch.

(4) Sulfur content shall be measured using an appropriate standard method published by a consensus-based standards organization. The weighted average sulfur content for each batch shall be calculated by multiplying the volume associated with each representative sample by the sulfur content, adding these values for all the samples, and then dividing that total value by the volume of the batch.

* * * * *

62. Section 98.396 is amended by:

a. Revising paragraph (a)(3).

b. Amending paragraphs (a)(5) and (a)(6) by adding a third sentence.

c. Revising paragraphs (a)(7), (a)(20)(ii), (a)(20)(iii), (b)(3), and (c)(3).

d. Adding a new paragraph (d).

§ 98.396 Data reporting requirements.

* * * * *

(a) * * *

(3) For each feedstock reported in paragraph (a)(2) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (a)(2) of this section that is petroleum-based (excluding any denaturant that may be present in any ethanol product).

* * * * *

(5) * * * Petroleum products and natural gas liquids that enter the refinery, but are not reported in (a)(1), shall not be reported under this paragraph.

(6) * * * Petroleum products and natural gas liquids that enter the refinery, but are not reported in (a)(2), shall not be reported under this paragraph.

(7) For each product reported in paragraph (a)(6) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (a)(6) of this section that is petroleum-based (excluding any denaturant that may be present in any ethanol product).

* * * * *

(20) * * *

(ii) Weighted average API gravity of the batch at the point of entry at the refinery.

(iii) Weighted average sulfur content of the batch at the point of entry at the refinery.

* * * * *

(b) * * *

(3) For each product reported in paragraph (b)(2) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (b)(2) of this section that is petroleum-based (excluding any denaturant that may be present in any ethanol product).

* * * * *

(c) * * *

(3) For each product reported in paragraph (c)(2) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (c)(2) of this section that is petroleum based (excluding any denaturant that may be present in any ethanol product).

* * * * *

(d) Blended non-crude feedstock and products.

(1) Refineries, exporters, and importers must report the following information for each blended product and non-crude feedstock where emissions were calculated according to § 98.393(i):

(i) Volume or mass of each blending component.

(ii) The CO_2 emissions in metric tons that would result from the complete combustion or oxidation of each blended non-crude feedstock or product, using Equation MM–12 or Equation MM–13 of this section.

(2) For a product that enters the refinery to be further refined or otherwise used on site that is a blended non-crude feedstock, refiners must meet the reporting requirements of paragraphs (a)(1) and (a)(2) of this section by reflecting the individual components of the blended non-crude feedstock.

(3) For a product that is produced, imported, or exported that is a blended product, refiners, importers, and exporters must meet the reporting requirements of paragraphs (a)(5), (a)(6), (b)(1), (b)(2), (c)(1), and (c)(2) of this section, as applicable, by reflecting the individual components of the blended product.

§ 98.397 [Amended]

63. Section 98.397 is amended by removing paragaph (e); and by redesignating paragraphs (f) and (g) as (e) and (f), respectively.

64. Section 98.398 is revised to read as follows:

§ 98.398 Definitions.

Except as specified in this section, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Batch means up to a calendar month of crude oil volume from a single country of origin or up to a calendar month of crude oil volume for which the country of origin is unknown.

Subpart NN—[Amended]

65. Section 98.403 is amended by:

a. Revising the definitions of "Fuel" and "HHV" in Equation NN–1 of paragraph (a)(1).

b. Revising the definition of "Fuel" in Equation NN–2 of paragraph (a)(2).

c. Revising the definition of "$Fuel_1$" in Equation NN–5 of paragraph (b)(3).

d. Revising the definition of "EF" in Equation NN–7 of paragraph (c)(1).

e. In paragraph (c)(2), revising Equation NN–8 and the definition of "CO_{2i}" in Equation NN–8.

§ 98.403 Calculating GHG emissions.

(a) * * *

(1) * * *

$Fuel_h$ = Total annual volume of product "h" supplied (volume per year, in thousand standard cubic feet (Mscf) for natural gas and bbl for NGLs).

HHV_h = Higher heating value of product "h" supplied (MMBtu/Mscf or MMBtu/bbl).

* * * * *

(2) * * *

$Fuel_h$ = Total annual volume of product "h" supplied (bbl or Mscf per year).

* * * * *

(b) * * *

(3) * * *

$Fuel_1$ = Total annual volume of natural gas received by the LDC at the city gate and stored on-system or liquefied and stored in the reporting year (Mscf per year).

* * * * *

(c) * * *

(1) * * *

EF_g = Fuel-specific CO_2 emission factor of NGL product "g" (MT CO_2/bbl).

(2) * * *

$$CO_2 = CO_{2i} - CO_{2m} \qquad \text{(Eq. NN-8)}$$

* * * * *

CO_{2i} = Annual CO_2 mass emissions that would result from the combustion or oxidation of fractionated NGLs delivered to all customers or on behalf of customers as calculated in paragraph (a)(1) or (a)(2) of this section (metric tons).

* * * * *

66. Section 98.406 is amended by revising paragraphs (a)(6) and (a)(9) introductory text to read as follows:

§ 98.406 Data reporting requirements.

(a) * * *

(6) Annual CO_2 emissions (metric tons) that would result from the complete combustion or oxidation of the quantities in paragraphs (a)(1) and (a)(2) of this section, calculated in accordance with § 98.403(a) and (c)(1).

* * * * *

(9) If the NGL fractionator developed reporter-specific EFs or HHVs, report the following for each product type:

* * * * *

67. Section 98.407 is amended by revising paragraphs (a) and (d) to read as follows:

§ 98.407 Records that must be retained.

* * * * *

(a) Records of all meter readings and documentation to support volumes of natural gas and NGLs that are reported under this part.

* * * * *

(d) Records related to the large end-users identified in § 98.406(b)(7).

* * * * *

68. Tables NN–1 and NN–2 to Subpart NN are amended to read as follows:

TABLE NN–1 TO SUBPART NN—DEFAULT FACTORS FOR CALCULATION METHODOLOGY 1 OF THIS SUBPART

Fuel	Default high heating value factor	Default CO_2 emission factor (kg CO_2/MMBtu)
Natural Gas	1.028 MMBtu/Mscf	53.02
Propane	3.822 MMBtu/bbl	61.46
Normal butane	4.242 MMBtu/bbl	65.15
Ethane	4.032 MMBtu/bbl	62.64
Isobutane	4.074 MMBtu/bbl	64.91
Pentanes plus	4.620 MMBtu/bbl	70.02

TABLE NN–2 OF SUBPART NN—LOOKUP DEFAULT VALUES FOR CALCULATION METHODOLOGY 2 OF THIS SUBPART

Fuel	Unit	Default CO_2 emission value (MT CO_2/unit)
Natural Gas	Mscf	0.055
Propane	Barrel	0.235
Normal butane	Barrel	0.276
Ethane	Barrel	0.253
Isobutane	Barrel	0.266
Pentanes plus	Barrel	0.324

[FR Doc. 2010–13361 Filed 6–14–10; 8:45 am]

BILLING CODE 6560–50–P