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SUBCHAPTER O—SEWAGE SLUDGE

PART 501—STATE SLUDGE MANAGEMENT PROGRAM REGULATIONS

Subpart A—Purpose, Scope and General Program Requirements

Sec.
501.1 Purpose and scope.
501.2 Definitions.
501.3 Coordination with other programs.

Subpart B—Development and Submission of State Programs

501.11 Elements of a sludge management program submission.
501.12 Program description.
501.13 Attorney General's statement.
501.14 Memorandum of Agreement with the Regional Administrator.
501.15 Requirements for permitting.
501.16 Requirements for compliance evaluation programs.
501.17 Requirements for enforcement authority.
501.18 Prohibition.
501.19 Sharing of information.
501.20 Receipt and use of federal information.
501.21 Program reporting to EPA.
501.22 Requirements for eligibility of Indian Tribes.
501.23 Request by an Indian Tribe for a determination of eligibility.
501.24 Procedures for processing an Indian Tribe's application.
501.25 Provisions for Tribal criminal enforcement authority.

Subpart C—Program Approval, Revision and Withdrawal

501.31 Review and approval procedures.
501.32 Procedures for revision of State programs.
501.33 Criteria for withdrawal of State programs.
501.34 Procedures for withdrawal of State programs.

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Subpart A—Purpose, Scope and General Program Requirements

§ 501.1 Purpose and scope.

(a) These regulations are promulgated under the authority of sections 101(e), 405(f), 501(a), and 518(e) of the CWA, and implement the requirements of those sections.

(b) This part specifies the procedures EPA will follow in approving, revising, and withdrawing State sludge management programs under section 405(f), and the requirements State programs must meet to be approved by the Administrator under section 405(f) of CWA. Sludge Management Program submissions may be developed and implemented under any existing or new State authority or authorities as long as they meet the requirements of this part.

(c) Any complete State Sludge Management Program submitted for approval under this part shall have the following as a minimum:

(1) The authority to require compliance by any person who uses or disposes of sewage sludge with standards for sludge use or disposal issued under section 405(d) of the CWA, including compliance by federal facilities;

(2) The authority to issue permits that apply, and ensure compliance with, the applicable requirements of section 405 of the Clean Water Act to any POTW or other treatment works treating domestic sewage, and procedures for issuance of such permits;

(3) Provisions for regulating the use or disposal of sewage sludge by nonpermittees;

(4) The authority to take actions to protect public health and the environment from any adverse effects that may occur from toxic pollutants in sewage sludge; and

(5) The authority to abate violations of the State sludge program, including civil and criminal penalties and other ways and means of enforcement. Indian Tribes can satisfy criminal enforcement authority requirements under § 501.25.

(d) In addition, any complete State Sludge Management Program submitted for approval under this part must have authority to regulate all sewage sludge management activities subject to 40 CFR part 503, unless the State is applying for partial sludge program approval in accordance with

paragraph (m) of this section. The State sludge management program must include authority to regulate all Federal facilities in the State. Sludge management activities must include as applicable:

(1) Land application;

(2) Landfilling in a Municipal Solid Waste Landfill regulated under 40 CFR part 258;

(3) Incineration;

(4) Surface disposal; and

(5) Any other sludge use or disposal practices that may subsequently be regulated by 40 CFR part 503.

(e) The Administrator will approve State programs which conform to the applicable requirements of this part.

(f)(1) Upon approval of a State program, the Administrator will suspend the issuance of federal permits for those activities subject to the approved State program. After program approval EPA will retain jurisdiction over any permits (including general permits) which it has issued unless arrangements have been made with the State in the Memorandum of Agreement for the State to assume responsibility for these permits. Retention of jurisdiction will include the processing of any permit appeals, modification requests, or variance requests; the conduct of inspections, and the receipt and review of self-monitoring reports. If any permit appeal, modification request, or variance request is not finally resolved when the federally issued permit expires, EPA may, with the consent of the State, retain jurisdiction until the matter is resolved.

(2) The procedures outlined in the preceding paragraph (f)(1) of this section for the suspension of permitting authority and transfer of existing permits will also apply when EPA approves an Indian Tribe's application to operate a State sludge management program and a State was the authorized permitting authority under §501.13 for sludge management activities within the scope of the newly approved program. The authorized State will retain jurisdiction over its existing permits as described in paragraph (f)(1) of this section absent a different arrangement stated in the Memorandum of Agreement executed between EPA and the Tribe.

(g) Notwithstanding approval of a State sludge program, EPA has the authority to take enforcement actions for any violations of this part or sections 405 or 309 of the CWA.

(h) Any State program approved by the Administrator shall at all times be conducted in accordance with the requirements of this part.

(i) Nothing in this part precludes a State or political subdivision thereof, or interstate agency, from adopting or enforcing requirements established by State or local law that are more stringent or more extensive than those required in this part or in any other federal statute or regulation.

(j) Nothing in this part precludes a State from operating a program with a greater scope of coverage than that required under this part. If an approved State program has greater scope of coverage than required by federal law, the additional coverage is not part of the federally approved program.

(k) Sections 106 (a) and (d) of the Marine Protection, Research, and Sanctuaries Act (MPRSA), 33 U.S.C. 1416, generally preclude States from regulating or issuing permits for ocean dumping. Nothing in this regulation is intended to confer on the States the authority to engage in the regulation or permitting of ocean dumping in contravention of the provisions of sections 106 (a) and (d) of the MPRSA.

(l) The Administrator may allow a State sewage sludge management agency to assign portions of its program responsibilities to local agencies, provided that:

(1) No assignment is made to a local agency which owns or operates a POTW or other facility that treats or disposes of sewage sludge;

(2) The program description required by §501.12 of this part identifies any assignment of program responsibilities to the local agency(ies), describes the capabilities of the local agency to carry out assigned functions, and includes copies of any documents which execute the assignment and an agreement between the State sewage sludge management agency and the local agency(ies) defining their respective program responsibilities;

(3) The Attorney General's Statement required by §501.13 of this part

states that any assignment of program responsibilities to the local agency(ies) described in the program description is valid under State law and that State and local law do not otherwise prohibit the local agency(ies) from executing the program responsibilities assigned by the State sewage sludge management agency;

(4) The Memorandum of Agreement (MOA) required by § 501.14 of this part includes adequate provisions for the State sewage sludge management agency's oversight of the program responsibilities assigned to the local agency(ies);

(5) The State sewage sludge management agency retains all responsibility for the program reporting required by § 501.21 of this part and for all other activities required by this part or by the MOA related to EPA oversight of the State's approved program; and

(6) The State sewage sludge management agency retains full authority and ultimate responsibility for administering all aspects of the State's approved program in accordance with the requirements of this part and the MOA.

(m) A State whose sludge management program has not been approved under this part may submit to the Regional Administrator an application for approval of a partial sewage sludge program. The following are the requirements for approval of a partial program:

(1) A partial program submission must constitute a complete management program covering one or more categories of sewage sludge use or disposal. The program must also apply to anyone engaged in the sewage sludge use or disposal practice that is the subject of the partial program. A complete management program is one that provides for the issuance of permits, the monitoring of compliance and, in the event of violations, possible enforcement action.

(2) The partial program submission must also address the following requirements:

(i) The Attorney General's Statement, in addition to the information required by § 501.13, must clearly explain the jurisdiction of the administering agency or department;

(ii) The program description, in addition to the information required by § 501.12, must explain how the program will operate, including which use and disposal practice(s) the State will cover. The program description must also explain the relationship and coordination between the proposed partial sewage sludge program and that part of the program for which EPA will remain the permitting authority, including a discussion of the division of permitting, enforcement, and compliance monitoring responsibilities between the State and EPA; and

(iii) The Memorandum of Agreement between EPA and the State, in addition to the information required by § 501.14, must set out the responsibilities of EPA and the State in administering the partial program, including specific provisions for transfer of information and determination of which users or disposers of sewage sludge are included in the partial program.

[54 FR 18786, May 2, 1989, as amended at 58 FR 67983, Dec. 22, 1993; 63 FR 45123, Aug. 24, 1998]

§ 501.2 Definitions.

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Approved State program means a State program which has received EPA approval under this part.

Class I sludge management facility means any POTW identified under 40 CFR 403.8(a) as being required to have an approved pretreatment program (including such POTWs located in a State that has elected to assume local program responsibilities pursuant to 40 CFR 403.10(e)) and any other treatment works treating domestic sewage classified as a Class I sludge management facility by the Regional Administrator in conjunction with the State Program Director because of the potential for its sludge use or disposal practices to adversely affect public health or the environment.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972), Pub. L. 92–500, as amended by Pub. L. 95–217, Pub. L. 95–576, Pub. L.

96–483, Pub. L. 97–117, and Pub. L. 100–4, 33 U.S.C. 1251 *et seq.*

Federal Indian reservation means all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation.

Indian Tribe means any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian reservation.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created under State law (or an Indian tribe or an authorized Indian tribal organization), or a designated and approved management agency under section 208 of the Clean Water Act. This definition includes a special district created under State law such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, or disposal of sewage sludge.

Permit means an authorization, license, or equivalent control document issued by EPA or an ''approved State program'' to implement the requirements of this part.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

POTW means a publicly owned treatment works.

Publicly owned treatment works means a treatment works treating domestic sewage that is owned by a municipality or State.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank, when the system is cleaned or maintained.

Sewage sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary or advanced waste water treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation device pumpings (33 CFR part 159), and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

Standards for sewage sludge use or disposal means the regulations promulgated at 40 CFR part 503 pursuant to section 405(d) of the CWA which govern minimum requirements for sludge quality, management practices, and monitoring and reporting applicable to the generation or treatment of sewage sludge from a treatment works treating domestic sewage or use or disposal of that sewage sludge by any person.

State means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, and the Commonwealth of the Northern Mariana Islands, and an Indian Tribe as defined in these regulations which meets the requirements of §501.22.

State Program Director or *Director* means the chief executive officer of the State sewage sludge management agency.

State sewage sludge management agency means the agency designated by the Governor as having the lead responsibility for managing or coordinating the approved State program under this part.

Toxic pollutant means any pollutant listed as toxic under section 307(a)(1) or any pollutant identified in regulations implementing section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including Federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices. For purposes of this definition, ''domestic sewage'' includes waste and waste water from humans or household operations that

are discharged to or otherwise enter a treatment works.

TWTDS means treatment works treating domestic sewage.

[54 FR 18786, May 2, 1989, as amended at 58 FR 67983, Dec. 22, 1993; 63 FR 45124, Aug. 24, 1998]

§ 501.3 Coordination with other programs.

Issuance of State permits under this part may be coordinated with issuance of RCRA, UIC, NPDES, 404 and other permits whether they are controlled by the State, EPA, or the Corps of Engineers. (See for example 40 CFR 124.4 for procedures for coordinating permit issuance.)

Subpart B—Development and Submission of State Programs

§ 501.11 Elements of a sludge management program submission.

(a) Any State that seeks to administer a program under this part shall submit to the Administrator at least three copies of a program submission. The submission shall contain the following:

(1) A letter from the Governor of the State (or in the case of an Indian Tribe in accordance with § 501.24(b), the Tribal authority exercising powers substantially similar to those of a State Governor) requesting program approval;

(2) A complete program description, as required by § 501.12 describing how the State intends to carry out its responsibilities under this part;

(3) An Attorney General's Statement as required by § 501.13;

(4) A Memorandum of Agreement with the Regional Administrator as required by § 501.l4; and

(5) Copies of all applicable State statutes and regulations, including those governing State administrative procedures.

(b)(1) Within 30 days of receipt of a State program submission, EPA will notify the State whether its submission is complete. If it is incomplete, EPA will identify the information needed to complete the program submission.

(2) In the case of an Indian Tribe eligible under § 501.24(b), EPA shall take into consideration the contents of the Tribe's request submitted under § 501.22, in determining if the program submission required by § 501.11(a) is complete.

(Information collection requirements in paragraph (a) were approved by the Office of Management and Budget under control number 2040–0128)

[54 FR 18786, May 2, 1989, as amended at 58 FR 67983, Dec. 22, 1993; 59 FR 64346, Dec. 14, 1994]

§ 501.12 Program description.

Any State that seeks to administer a program under this part shall submit a description of the program it proposes to administer in lieu of the federal program under State law or under any interstate compact. The program description shall include:

(a) A description in narrative form of the scope, structure, coverage and processes of the State program.

(b) A description (including organization charts) of the organization and structure of the State agency or agencies which will have responsibility for administering the program. If more than one agency is responsible for administration of a program, the responsibilities of each agency, and their procedures for coordination must be set forth, and an agency must be designated as a ''lead agency'' (i.e., the ''State sludge management agency'') to facilitate communications between EPA and the State agencies having program responsibility. If the State proposes to administer a program of greater scope of coverage than is required by federal law, the information provided under this paragraph must indicate the resources dedicated to administering the federally required portion of the program. This description must include:

(1) A description of the general duties and the total number of State agency staff carrying out the State program;

(2) An itemization of the estimated costs of establishing and administering the program for the first two years after approval including cost of the personnel described in paragraph (b)(1) of this section, cost of administrative support, and cost of technical support, except where a State is seeking authorization for an established sewage sludge management program that has

been in existence for a minimum of two years and is at least as stringent as the program for which the State is seeking authorization; and

(3) An estimate of the sources and amounts of funding for the first two years after approval to meet the costs listed in paragraph (b)(2) of this section, except where a State is seeking authorization for an established sewage sludge management program that has been in existence for a minimum of two years and is at least as stringent as the program for which the State is seeking authorization.

(c) A description of applicable State procedures, including permitting procedures, and any State administrative or judicial review procedures.

(d) Copies of the permit, application, and reporting forms or a description of the procedures the State intends to employ for obtaining information needed to implement its permitting program.

(e) A complete description of the State's compliance tracking and enforcement program (see 40 CFR 501.16 and 501.17).

(f)(1) An inventory of all POTWs and other TWTDS that are subject to regulations promulgated pursuant to 40 CFR part 503 and subject to the State program, which includes:

(i) Name, location, and ownership status (e.g., public, private, federal),

(ii) Sludge use or disposal practice(s),

(iii) Annual sludge production volume, and

(iv) Permit numbers for permits containing sewage sludge requirements, if any, and;

(v) Compliance status.

(2) States may submit either:

(i) Inventories which contain all of the information required by paragraph (f)(1) of this section; or

(ii) A partial inventory with a detailed plan showing how the State will complete the required inventory within five years after approval of its sludge management program under this part.

(g) In the case of Indian Tribes eligible under § 501.24(b), if a State has been authorized by EPA to issue permits on the Federal Indian reservation in accordance with § 501.13, a description of how responsibility for pending permit applications, existing permits, and supporting files will be transferred from the State to the eligible Indian Tribe. To the maximum extent practicable, this should include a Memorandum of Agreement negotiated between the State and the Indian Tribe addressing the arrangements for such transfer.

[54 FR 18786, May 2, 1989, as amended at 58 FR 67984, Dec. 22, 1993; 59 FR 64346, Dec. 14, 1994; 63 FR 45124, Aug. 24, 1998]

§ 501.13 Attorney General's statement.

Any State that seeks to administer a program under this part shall submit a statement from the State Attorney General (or the attorney for those State or interstate agencies which have independent legal counsel) that the laws of the State, or an interstate compact, provide adequate authority to carry out the program described under § 501.12 and to meet the requirements of this part. This statement shall include citations to the specific statutes, administrative regulations, and, where appropriate, judicial decisions which demonstrate adequate authority. State statutes and regulations cited by the State Attorney General or independent legal counsel shall be in the form of lawfully adopted State statutes and regulations at the time the statement is signed and shall be fully effective by the time the program is approved. To qualify as ''independent legal counsel'' the attorney signing the statement required by this section must have full authority to independently represent the State agency in court on all matters pertaining to the State program. If a State (which is not an Indian Tribe) seeks to carry out the program on Indian lands, the statement shall include an appropriate opinion and analysis of the State's legal authority.

[54 FR 18786, May 2, 1989, as amended at 58 FR 67984, Dec. 22, 1993]

§ 501.14 Memorandum of Agreement with the Regional Administrator.

(a) Any State that seeks to administer a program under this part must submit a Memorandum of Agreement. The Memorandum of Agreement must be executed by the State Program Director and the Regional Administrator and will become effective when approved by the Regional Administrator.

In addition to meeting the requirements of paragraph (b) of this section, the Memorandum of Agreement may include other terms, conditions, or agreements consistent with this part and relevant to the administration and enforcement of the State's regulatory program. The Administrator will not approve any Memorandum of Agreement which contains provisions which restrict EPA's exercise of its oversight responsibility.

(b) The Memorandum of Agreement shall include the following:

(1)(i) Provisions for the prompt transfer from EPA to the State of pending permit applications applicable to the State program (or portion of the State program for which the State seeks approval) and any other information relevant to program operation not already in the possession of the State Director (e.g., support files for permit issuance, compliance reports, etc.). If existing permits are transferred from EPA to the State for administration, the Memorandum of Agreement must contain provisions specifying a procedure for transferring the administration of these permits. If a State lacks the authority to directly administer permits issued by the federal government, a procedure may be established to transfer responsibility for these permits.

(ii) Where a State has been authorized by EPA to issue permits in accordance with § 501.13 on the Federal Indian reservation of the Indian Tribe seeking program approval, provisions describing how the transfer of pending permit applications, permits, and any other information relevant to the program operation not already in the possession of the Indian Tribe (support files for permit issuance, compliance reports, etc.) will be accomplished.

(2) Provisions specifying classes and categories of permit applications, draft permits, and proposed permits that the State will send to the Regional Administrator for review, comment and, where applicable, objection. These provisions must follow the permit review procedures set forth in 40 CFR 123.44.

(3) The Memorandum of Agreement must also specify the extent to which EPA will waive its right to review, object to, or comment upon State-issued permits.

(4) Whenever a waiver is granted under paragraph (3) of this section, the Memorandum of Agreement shall contain a statement that the Regional Administrator retains the right to terminate the waiver as to future permit actions, in whole or in part, at any time by sending the State Director written notice of termination.

(5) Provisions specifying the frequency and content of reports, documents and other information which the State is required to submit to EPA. The State shall allow EPA to routinely review State records, reports, and files relevant to the administration and enforcement of the approved program. State reports may be combined with grant reports where appropriate. The procedures shall implement the requirements of § 501.21.

(c) The Memorandum of Agreement must also provide for the following:

(1) The circumstances in which the State must promptly send notices, draft permits, final permits, or related documents to the Regional Administrator; and

(2) Provisions on the State's compliance monitoring and enforcement program, including:

(i) Provisions for coordination of compliance monitoring activities by the State and by EPA. These may specify the basis on which the Regional Administrator will select facilities or activities within the State for EPA inspection; and

(ii) Procedures to assure coordination of enforcement activities.

(3) When appropriate, provisions for joint processing of permits by the State and EPA for facilities or activities which require permits from both EPA and the State under different programs (see for example 40 CFR 124.4).

(4) Provisions for modification of the Memorandum of Agreement in accordance with this part.

(5) Provisions for modification of the Memorandum of Agreement in accordance with this part.

(d) The Memorandum of Agreement, the annual program grant and the State/EPA Agreement should be consistent. If the State/EPA Agreement indicates that a change is needed in the

Memorandum of Agreement, the Memorandum of Agreement may be amended through the procedures set forth in this part. The State/EPA Agreement may not override the Memorandum of Agreement.

(The information collection requirements in paragraph (c) of this section have been approved by the Office of Management and Budget under control number 2040–0128)

[54 FR 18786, May 2, 1989, as amended at 58 FR 67984, Dec. 22, 1993; 63 FR 45124, Aug. 24, 1998]

§ 501.15 Requirements for permitting.

(a) *General requirements.* All State programs under this part must have legal authority to implement each of the following provisions and must be administered in conformance with each, except that States are not precluded from omitting or modifying any provisions to impose more stringent requirements:

(1) *Confidentiality of information.* Claims of confidentiality will be denied for the following information:

(i) The name and address of any permit applicant or permittee;

(ii) Permit applications, permits, and sewage sludge data. This includes information submitted on the permit application forms themselves and any attachments used to supply information required by the forms.

(2) *Duration of permits.* (i) NPDES permits issued to treatment works treating domestic sewage pursuant to section 405(f) of the CWA will be effective for a fixed term not to exceed five years.

(ii) Non-NPDES Permits issued to treatment works treating domestic sewage pursuant to section 405(f) of the CWA will be effective for a fixed term not to exceed ten years.

(3) *Schedules of compliance.* (i) General. The permit may, when appropriate, specify a schedule of compliance leading to compliance with the CWA and the requirements of this part. Any schedules of compliance under this section must require compliance as soon as possible, but not later than any applicable statutory deadline under the CWA.

(ii) *Interim dates.* If a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule must set forth interim requirements and the date for their achievement, as appropriate.

(iii) *Reporting.* The permit must be written to require that no later than 14 days following each interim date and the final date of compliance, the permittee must notify the Director in writing of its compliance or noncompliance with the interim or final requirements, or submit progress reports if paragraph (a)(3)(ii) of this section is applicable.

(b) *Conditions applicable to all permits.* In addition to permit conditions which must be developed on a case-by-case basis in order to meet applicable requirements of 40 CFR part 503, paragraphs (a)(1) through (a)(3) of this section, and permit conditions developed on a case-by-case basis using best professional judgment to protect public health and the environment from the adverse effects of toxic pollutants in sewage sludge, all permits must contain the following permit conditions (or comparable conditions as provided for in the Memorandum of Agreement):

(1) *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

(2) *Compliance with sludge standards.* The permittee shall comply with standards for sewage sludge use or disposal established under section 405(d) of the CWA (40 CFR part 503) within the time provided in the regulations that establish such standards, even if this permit has not yet been modified to incorporate the standards.

(3) *CWA penalties.* Section 309 of the Clean Water Act (CWA) sets out penalties applicable to persons who violate the Act's requirements. For example, section 309(d) provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed $25,000 per day for each violation. Such violations also may be subject to administrative penalties assessed by the

Administrator pursuant to section 309(g) of the CWA. Any person who negligently violates permit conditions implementing sections 301, 302, 306, 307, 308, or 405 of the Clean Water Act is subject to a fine not less than $2,500 nor more than $25,000 per day of violation or by imprisonment for not more than 1 year, or both. Any person who knowingly violates a permit condition implementing sections 301, 302, 304, 307, 308, or 405 shall be punished by a fine not less than $5000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years or both.

(4) *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(5) *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or prevent sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(6) *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

(7) *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

(8) *Duty to provide information.* The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

(9) *Inspection and entry.* The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(i) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(ii) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(iii) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(iv) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances, parameters or practices at any location.

(10) *Monitoring and records.* (i) The permittee must monitor and report monitoring results as specified elsewhere in this permit with a frequency dependent on the nature and effect of its sludge use or disposal practices. At a minimum, this will be as required by 40 CFR part 503.

(ii) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall retain records of all monitoring information, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application, or longer as required by 40 CFR part 503. This period may be extended by request of the Director at any time.

(iii) Records of monitoring information shall include:

(A) The date, exact place, and time of sampling or measurements;

(B) The individual(s) who perfored the sampling or measurements;

(C) The date(s) analyses were performed;

(D) The individual(s) who performed the analyses;

(E) The analytical techniques or methods used; and

(F) The results of such analyses.

(iv) Monitoring must be conducted according to test procedures specified in 40 CFR part 503 or 136 unless other test procedures have been specified in this permit.

(v) The Clean Water Act provides that any person who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished for the first conviction by a fine of not more than $10,000 or by imprisonment for not more than 2 years per violation, or by both. Subsequent convictions for the same offense are punishable by a fine of not more than $20,000 per day of violation, or imprisonment of not more than 4 years, or both.

(11) *Signatory requirements.* (i) All applications, reports, or information submitted to the Director shall be signed and certified according to the provisions of 40 CFR 122.22.

(ii) The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit shall, upon conviction, be punished for the first conviction by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both. Subsequent convictions shall be punishable by a fine of not more than $20,000 per day of violation or by imprisonment of not more than 4 years, or by both.

(12) *Notice requirements.* (i) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility, or significant changes planned in the permittee's sludge disposal practice, where such alterations, additions, or changes may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

(ii) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(iii) *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the CWA.

(iv) *Other noncompliance reporting.* The permittee shall report all instances of noncompliance. Reports of noncompliance shall be submitted with the permittee's next self monitoring report or earlier. if requested by the Director or if required by an applicable standard for sewage sludge use or disposal or condition of this permit.

(v) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

(13) *Reopener.* If a standard for sewage sludge use or disposal applicable to permittee's use or disposal methods is promulgated under section 405(d) of the CWA before the expiration of this permit, and that standard is more stringent than the sludge pollutant limits or acceptable management practices authorized in this permit, or controls a pollutant or practice not limited in this permit, this permit may be promptly modified or revoked and reissued to conform to the standard for sludge use or disposal promulgated under section 405(d) of the CWA.

(14) *Duty to reapply.* If the permittee wishes to continue an activity regulated by the this permit after the expiration date of this permit, the permittee must apply for a new permit.

(15) Indian Tribes can satisfy the criminal enforcement authority requirements of this section under § 501.25.

(c) *Permit actions.* All State programs under this part shall have the legal authority to implement the following provisions as a minimum and must be administered in conformance with each.

(1) *Transfer of permits*—(i) *Transfers by modification.* Except as provided in paragraph (ii) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued to identify the new permittee and incorporate such other requirements as may be necessary to assure compliance with the CWA.

(ii) *Automatic transfers.* As an alternative to transfers under paragraph (c)(1)(i) of this section, the State Director may authorize automatic transfer of any sludge permit to a new permittee if:

(A) The current permittee notifies the Director at least 30 days in advance of the proposed transfer date in paragraph (c)(1)(ii)(B) of this section;

(B) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

(C) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (c)(ii)(B) of this section.

(2) *Modification or revocation and reissuance of permits.* (i) When the Director receives any information (for example, where the Director inspects the facility, receives information submitted by the permittee as required in the permit, receives a request for modification or revocation and reissuance under § 501.15(d)(2)(i), or conducts a review of the permit file), he or she may determine whether or not one or more of the causes listed in paragraphs (c)(2)(ii) and (iii) of this section for modification or revocation and reissuance or both exist. If cause exists, the Director may modify or revoke and reissue the permit and may request an updated application if necessary. When a permit is modified, only the conditions subject to a modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term. A draft permit must be prepared and other procedures in § 501.15(d) followed. If cause does not exist under this section, the Director shall not modify or revoke and reissue the permit.

(ii) *Causes for modification.* The following are causes for modification but not revocation and reissuance of permits except when the permittee requests or agrees.

(A) *Alterations.* There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different from or absent in the existing permit.

(B) *Information.* The Director has received new information. Permits may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance.

(C) *New regulations.* New regulations have been promulgated under section 405(d) of the CWA, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

(D) *Compliance schedules.* The Director determines good cause exists for modification of a compliance schedule, such as an Act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonable available remedy. However, in no case may a compliance schedule be modified to extend beyond an applicable CWA statutory deadline.

(E) *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise

an existing land application plan, or to add a land application plan.

(iii) The following are causes to modify or alternatively, revoke and reissue, a permit.

(A) Cause exists for termination under § 501.15(c)(3) and the Director determines that modification or revocation and reissuance is appropriate.

(B) The Director has received notification (as required in the permit, see § 501.15(b)(12)(iii)) of a proposed transfer of the permit.

(3) *Termination of permits.* The following are causes for terminating a permit during its term, or for denying a permit renewal application:

(i) Noncompliance by the permittee with any condition of the permit;

(ii) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

(iii) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or

(iv) A change in any condition that requires either a temporary or a permanent reduction or elimination of any activity controlled by the permit.

(d) *Permit procedures.* All State programs approved under this part must have the legal authority to implement, and be administered in accordance with, each of following provisions, unless the Regional Administrator determines that the State program includes comparable or more stringent provisions.

(1) Application for a permit. (i) Any TWTDS whose sewage sludge use or disposal method is covered by part 503 and covered under the State program, and who does not have an effective sewage sludge permit, must complete, sign, and submit to the Director an application for a permit within the following time frames.

(A) TWTDS with a currently effective NPDES permit must submit the required application information when the next application for NPDES permit renewal is due.

(B) The required application information is listed in 40 CFR 122.21(q).

(C) Other existing TWTDS not addressed under paragraph (d)(1)(i)(A) of this section must submit the information listed in paragraphs (d)(1)(i)(C)(*1*) through (d)(I)(i)(C)(*5*) of this section, to the Director within one year after publication of a standard applicable to their sewage sludge use or disposal practices. The Director will determine when such a TWTDS must submit a full permit application.

(*1*) Name, mailing address and location of the TWTDS;

(*2*) The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public or other entity;

(*3*) A description of the sewage sludge use or disposal practices. Unless the sewage sludge meets the ceiling concentrations in 40 CFR 503.13(b)(1), the pollutant concentrations in 40 CFR 503.13(b)(3), the Class A pathogen requirements in 40 CFR 503.32(a), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8), the description must include the name and address of any facility where sewage sludge is sent for treatment or disposal, and the location of any land application sites;

(*4*) Annual amount of sewage sludge generated, treated, used or disposed (dry weight basis); and

(*5*) The most recent data the TWTDS may have on the quality of the sewage sludge.

(D) Notwithstanding paragraph (d)(1)(i)(A) or (d)(1)(i)(B) of this section, the Director may require permit applications from any TWTDS at any time if the Director determines that a permit is necessary to protect public health and the environment from any potential adverse effects that may occur from toxic pollutants in sewage sludge.

(E) Any TWTDS that commences operations after promulgation of an applicable standard for sewage sludge use or disposal must submit an application to the Director at least 180 days prior to the date proposed for commencing operations.

(ii) All TWTDS with a currently effective sewage sludge permit must submit a new application at least 180 days before the expiration date of their existing permit.

(iii) The Director will not begin the processing of a permit until the applicant has fully complied with the application requirements for that permit.

(2) *Modification, revocation and reissuance, or termination of permits.* (i) Permits may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in § 501.15(c). All requests shall be in writing and shall contain factors or reasons supporting the request.

(ii) If the Director tentatively decides to modify or revoke and reissue a permit he or she shall prepare a draft permit incorporating the proposed changes. The Director may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of a revoked and reissued permit, the Director shall require the submission of a new application. If the Director tentatively decides to terminate a permit he or she shall prepare a Notice of Intent to Terminate and follow the public notice and comment procedures outlined in Section 501.15(d)(6).

(3) *Draft permits.* Once an application is complete, the Director shall tentatively decide whether to prepare a draft permit or to deny the application. If the Director decides to prepare a draft permit, he or she shall prepare a draft permit that contains the necessary conditions to implement this part, 40 CFR part 503, and section 405 of the CWA.

(4) Fact sheets. A fact sheet must be prepared for every draft permit which the Director finds is the subject of widespread public interest or raises major issues. The fact sheet will briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. The Director will send this fact sheet to the applicant and, on request, to any other person.

(5) Public notice of permit actions and public comment period. (i) The Director must give public notice that the following actions have occurred:

(A) A draft permit has been prepared. At least 30 days must be allowed for public comment on the draft permit unless the Director has previously provided for public comment, for example after receipt of the permit application.

(B) A meeting or hearing has been scheduled.

(ii) Methods. Public notice of activities described in paragraph (d)(5)(i) of this section must be given in the area affected by these activities by any method reasonably calculated to give actual notice of the action in question to any person affected or requesting notice of the action. Public notice may include publication of a notice in a daily or weekly newspaper within the area affected by the facility or activity, press releases, or any other forum or medium to elicit public participation.

(*iii*) Contents.

(A) *All public notices.* All public notices issued under this part must contain the following minimum information:

(*1*) Name and address of the office processing the permit action for which notice is being given;

(*2*) Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;

(*3*) A brief description of the activity described in the permit application (including the inclusion of land application plan, if appropriate);

(*4*) Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit, fact sheet, and the application;

(*5*) A brief description of the comment procedures required by § 501.15(d)(6) and the time and place of any meeting or hearing that will be held, including a Statement of procedures to request a meeting or hearing (unless a meeting or hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision; and

(*6*) Any additional information considered necessary or proper.

(B) *Public notices for meetings or hearings.* In addition to the general public

notice described in paragraph (d)(5)(iii)(A) of this section, the public notice of a meeting or hearing must contain the following information:

(*1*) Date, time and place of the meeting or hearing; and

(*2*) A brief description of the nature and purpose of the meeting or hearing, including the applicable rules and procedures.

(6) *Public comments and requests for public meetings or hearings.* During the public comment period, any interested person may submit written comments on the draft permit and may request a public meeting or hearing, if no meeting or hearing has already been scheduled. A request for a public meeting or hearing must be in writing and must state the nature of the issues proposed to be raised in the meeting or hearing. All comments will be considered in making the final decision and must be answered as provided in paragraph (d)(8) of this section.

(7) *Public meetings or hearings.* The Director will hold a public meeting or hearing whenever he or she finds, on the basis of requests, a significant degree of public interest in a draft permit. The Director may also hold a public meeting or hearing at his or her discretion, (e.g. where such a hearing might clarify one or more issues involved in the permit decision).

(8) *Response to comments.* At the time a final permit is issued, the Director will issue a response to comments. The response to comments must be available to the public, and must:

(i) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(ii) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period or during any meeting or hearing.

(e) *Optional program provisions.* The following provisions may be included in a State program at the State's option. If the State decides to adopt any of these provisions, they must be no less stringent than the corresponding Federal provisions:

(1) Continuation of expiring permits (40 CFR 122.6);

(2) General permits (40 CFR 122.28);

(3) Minor modifications of permits (40 CFR 122.63); and

(4) Effect of permit: affirmative defense (40 CFR 122.5(b)).

(f) *Conflict of interest.* Except as provided in paragraph (f)(2), State sludge management programs shall ensure that any board or body which approves all or portions of permits shall not include as a member any person who receives, or has during the previous two years received, a significant portion of income directly or indirectly from permit holders or applicants for a permit.

(1) For the purposes of this paragraph:

(i) ''Board or body'' includes any individual, including the Director, who has or shares authority to approve all or portions of permits either in the first instance, as modified or reissued, or on appeal.

(ii) ''Significant portion of income'' means 10 percent or more of gross personal income for a calendar year, except that it means 50 percent or more of gross personal income for a calendar year if the recipient is over 60 years of age and is receiving that portion under retirement, pension, or similar arrangement.

(iii) ''Permit holders or applicants for a permit'' does not include any department or agency of a State government, such as a Department of Parks or a Department of Fish and Wildlife.

(iv) ''Income'' includes retirement benefits, consultant fees, and stock dividends.

(v) Income is not received ''directly or indirectly from permit holders or applicants for a permit'' when it is derived from mutual fund payments, or from other diversified investments for which the recipient does not know the identity of the primary sources of income.

(2) The Administrator may waive the requirements of this paragraph if the board or body which approves all or portions of permits is subject to, and certifies that it meets, a conflict-of-interest standard imposed as part of another EPA-approved State permitting program or an equivalent standard.

[54 FR 18786, May 2, 1989, as amended at 58 FR 9414, Feb. 19, 1993; 58 FR 67984, Dec. 22, 1993; 63 FR 45125, Aug. 24, 1998; 64 FR 42470, Aug. 4, 1999]

§ 501.16 Requirements for compliance evaluation programs.

State sludge management programs shall have requirements and procedures for compliance monitoring and evaluation as set forth in § 123.26.

§ 501.17 Requirements for enforcement authority.

(a) Any State agency administering a program shall have available the following remedies for violations of State program requirements:

(1) To restrain immediately and effectively any person by order or by suit in State court from engaging in any unauthorized activity which is endangering or causing damage to public health or the environment;

NOTE: This paragraph ((a)(1)) requires that States have a mechanism (e.g., an administrative cease and desist order or the ability to seek a temporary restraining order) to stop any unauthorized activity endangering public health or the environment.

(2) To sue in courts of competent jurisdiction to enjoin any threatened or continuing violation of any program requirement, including permit conditions, without the necessity of a prior revocation of the permit; and

(3) To assess or sue to recover in court civil penalties and to seek criminal remedies, including fines, as follows:

(i) Civil penalties will be recoverable for the violation of any permit condition; any applicable standard or limitation; any filing requirement; any duty to allow or carry out inspection, entry or monitoring activities; or any regulation or orders issued by the State Program Director. The State must at a minimum, have the authority to assess penalties of up to $5,000 a day for each violation.

(ii) Criminal fines will be recoverable against any person who willfully or negligently violates any applicable standards or limitations; any permit condition; or any filing requirement. The State must at a minimum, have the authority to assess fines of up to $10,000 a day for each violation. States which provide the criminal remedies based on ''criminal negligence,'' ''gross negligence'' or strict liability satisfy the requirement of this paragraph (a)(3)(ii) of this section.

(iii) Criminal fines will be recoverable against any person who knowingly makes any false statement, representation or certification in any program form, or in any notice or report required by a permit or State Program Director, or who knowingly renders inaccurate any monitoring device or method required to be maintained by the State Program Director. The State must at a minimum, have the authority to assess fines of up to $5,000 for each instance of violation.

(b)(1) The civil penalty or criminal fine will be assessable for each instance of violation and, if the violation is continuous, will be assessable up to the maximum amount for each day of violation.

(2) The burden of proof and degree of knowledge or intent required under State law for establishing violations under paragraph (a)(3) of this section shall be no greater than the burden of proof or degree of knowledge or intent EPA must provide when it brings an action under the appropriate Act.

NOTE: For example, this requirement is not met if State law includes mental state as an element of proof for civil violations.

(c) A civil penalty assessed, sought, or agreed upon by the State Program Director under paragraph (a)(3) of this section shall be appropriate to the violation.

(d) Any State administering a program shall provide for public participation in the State enforcement process by providing either:

(1) Authority which allows intervention as of right in any civil or administrative action to obtain remedies specified in paragraphs (a)(1), (2) or (3) of this section by any citizen having an interest which is or may be adversely affected; or

(2) Assurance that the State agency or enforcement authority will:

(i) Investigate and provide responses to all citizen complaints submitted pursuant to the procedures specified in 40 CFR 123.26(b)(4);

(ii) Not oppose intervention by any citizen in any civil or administrative

proceeding when permissive intervention may be authorized by statute, rule, or regulation; and

(iii) Publish notice of and provide at least 30 days for public comment on any proposed settlement of a State enforcement action.

(e) Indian Tribes that cannot satisfy the criminal enforcement authority requirements of this section may still be approved under this part if they meet the requirements established in § 501.25.

[54 FR 18786, May 2, 1989, as amended at 58 FR 67984, Dec. 22, 1993; 63 FR 45127, Aug. 24, 1998]

§ 501.18 Prohibition.

State permit programs shall provide that no permit shall be issued when the Regional Administrator has objected in writing under 40 CFR 123.44.

§ 501.19 Sharing of information.

State sludge management programs shall comply with the requirements of 40 CFR 123.41.

§ 501.20 Receipt and use of federal information.

State sludge management programs shall comply with 40 CFR 123.42.

§ 501.21 Program reporting to EPA.

The State Program Director must prepare annual reports as detailed in this section and must submit any reports required under this section to the Regional Administrator. These reports will serve as the main vehicle for the State to report on the status of its sludge management program, update its inventory of sewage sludge generators and sludge disposal facilities, and provide information on incidents of noncompliance. The State Program Director must submit these reports to the Regional Administrator according to a mutually agreed-upon schedule. The reports specified below may be combined with other reports to EPA (e.g., existing NPDES or RCRA reporting systems) where appropriate and must include the following:

(a) A summary of the incidents of noncompliance which occurred in the previous year that includes:

(1) The non-complying facilities by name and reference number;

(2) The type of noncompliance, a brief description and date(s) of the event;

(3) The date(s) and a brief description of the action(s) taken to ensure timely and appropriate action to achieve compliance;

(4) Status of the incident(s) of noncompliance with the date of resolution; and

(5) Any details which tend to explain or mitigate the incident(s) of noncompliance.

(b) Information to update the inventory of all sewage sludge generators and sewage sludge disposal facilities submitted with the program plan or in previous annual reports, including:

(1) Name and location;

(2) Permit numbers for permits containing sewage sludge requirements;

(3) Sludge management practice(s) used; and

(4) Sludge production volume.

[63 FR 45127, Aug. 24, 1998]

§ 501.22 Requirements for eligibility of Indian Tribes.

(a) Consistent with section 518(e) of the CWA, 33 U.S.C. 1377(e), the Regional Administrator will treat an Indian Tribe as eligible to apply for sludge management program authority if it meets the following criteria:

(1) The Indian Tribe is recognized by the Secretary of the Interior.

(2) The Indian Tribe has a governing body carrying out substantial governmental duties and powers.

(3) The functions to be exercised by the Indian Tribe pertain to the management and protection of water resources which are held by an Indian Tribe, held by the United States in trust for the Indians, held by a member of an Indian Tribe if such property interest is subject to a trust restriction on alienation, or otherwise within the borders of an Indian reservation.

(4) The Indian Tribe is reasonably expected to be capable, in the Regional Administrator's judgment, of carrying out the functions to be exercised, in a manner consistent with the terms and purposes of the Act and applicable regulations, of an effective sludge management program.

(b) An Indian Tribe which the Regional Administrator determines meets

the criteria described in paragraph (a) of this section must also satisfy the State program requirements described in this part for assumption of the State program.

[58 FR 67984, Dec. 22, 1993, as amended at 59 FR 64346, Dec. 14, 1994]

§ 501.23 Request by an Indian Tribe for a determination of eligibility.

An Indian Tribe may apply to the Regional Administrator for a determination that it qualifies pursuant to section 518 of the Act for purposes of seeking sludge management program approval. The application shall be concise and describe how the Indian Tribe will meet each of the requirements of § 501.22. The application shall include the following information:

(a) A statement that the Tribe is recognized by the Secretary of the Interior;

(b) A descriptive statement demonstrating that the Tribal governing body is currently carrying out substantial governmental duties and powers over a defined area. This statement should:

(1) Describe the form of the Tribal government;

(2) Describe the types of governmental functions currently performed by the Tribal governing body, such as, but not limited to, the exercise of police powers affecting (or relating to) the health, safety, and welfare of the affected population; taxation; and the exercise of the power of eminent domain; and

(3) Identify the source of the Tribal government's authority to carry out the governmental functions currently being performed.

(c) A map or legal description of the area over which the Indian Tribe asserts authority under section 518(e)(2) of the Act; a statement by the Tribal Attorney General (or equivalent official authorized to represent the Tribe in all legal matters in court pertaining to the program for which it seeks approval) which describes the basis for the Tribe's assertion (including the nature or subject matter of the asserted regulatory authority); copies of those documents such as Tribal constitutions, by-laws, charters, executive orders, codes, ordinances, and/or resolutions which the Tribe believes are relevant to its assertion under section 518(e)(2) of the Act.

(d) A narrative statement describing the capability of the Indian Tribe to administer an effective, environmentally sound sludge management program. The statement should include:

(1) A description of the Indian Tribe's previous management experience which may include the administration of programs and service authorized by the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450 *et seq.*), the Indian Mineral Development Act (25 U.S.C. 2101 *et seq.*), or the Indian Sanitation Facility Construction Activity Act (42 U.S.C. 2004a);

(2) A list of existing environmental or public health programs administered by the Tribal governing body, and a copy of related Tribal laws, regulations, and policies;

(3) A description of the entity (or entities) which exercise the executive, legislative, and judicial functions of the Tribal government;

(4) A description of the existing, or proposed, agency of the Indian Tribe which will assume primary responsibility for establishing and administering a sludge management program (including a description of the relationship between the existing or proposed agency and its regulated entities);

(5) A description of the technical and administrative abilities of the staff to administer and manage an effective, environmentally sound sludge management program or a plan which proposes how the Tribe will acquire additional administrative and technical expertise. The plan must address how the Tribe will obtain the funds to acquire the administrative and technical expertise.

(e) The Regional Administrator may, at his discretion, request further documentation necessary to support a Tribe's eligibility.

(f) If the Administrator or her delegatee has previously determined that a Tribe has met the prerequisites that make it eligible to assume a role similar to that of a state as provided by statute under the Safe Drinking Water Act, the Clean Water Act, or the Clean Air Act, then that Tribe need provide only that information unique

to the sludge management program which is requested by the Regional Administrator.

[58 FR 67984, Dec. 22, 1993, as amended at 59 FR 64346, Dec. 14, 1994]

§ 501.24 Procedures for processing an Indian Tribe's application.

(a) The Regional Administrator shall process an application of an Indian Tribe submitted pursuant to § 501.23 in a timely manner. He shall promptly notify the Indian Tribe of receipt of the application.

(b) The Regional Administrator shall follow the procedures described in subpart C of this part in processing a Tribe's request to assume the sludge management program.

[58 FR 67985, Dec. 22, 1993, as amended at 59 FR 64346, Dec. 14, 1994]

§ 501.25 Provisions for Tribal criminal enforcement authority.

To the extent that an Indian Tribe is precluded from asserting criminal enforcement authority as required under §§ 501.1(c)(5) and 501.17, the Federal Government will exercise primary criminal enforcement responsibility. The Tribe, with the EPA Region, shall develop a procedure by which the Tribal agency will refer potential criminal violations to the Regional Administrator, as agreed to by the parties, in an appropriate and timely manner. This procedure shall encompass all circumstances in which the Tribe is incapable of exercising the enforcement requirements of §§ 501.1(c)(5) and 501.17. This agreement shall be incorporated into a joint or separate Memorandum of Agreement with the EPA Region, as appropriate.

[58 FR 67985, Dec. 22, 1993]

Subpart C—Program Approval, Revision and Withdrawal

§ 501.31 Review and approval procedures.

(a) EPA shall approve or disapprove a State's application for approval of its State sludge management program within 90 days after receiving a complete program submission.

(b) Within 30 days of receipt by EPA of a State program submission, EPA will notify the State whether its submission is complete. If EPA finds that a State's submission is complete, the 90-day review period will be deemed to have begun on the date of the completeness determination. If EPA finds that a State's submission is incomplete, the review period will not begin until all the necessary information is received by EPA.

(c) After determining that a State program submission is complete, EPA will publish notice of the State's application in the FEDERAL REGISTER and in enough of the largest newspapers in the State to attract statewide attention. EPA will mail notices to persons known to be interested in such matters, including all persons on appropriate State and EPA mailing lists and all treatment works treating domestic sewage listed on the inventory required by § 501.12(f) of this part. The notice will:

(1) Provide a comment period of not less than 45 days during which interested members of the public may express their views on the State program;

(2) Provide opportunity for a public hearing within the State to be held no less than 30 days after notice is published in the FEDERAL REGISTER and indicate when and where the hearing is to be held, or how interested persons may request that a hearing be held if a hearing has not been scheduled. EPA shall hold a public hearing whenever the Regional Administrator finds, on the basis of requests, a significant degree of public interest in the State's application or that a public hearing might clarify one or more issues involved in the State's application.

(3) Indicate the cost of obtaining a copy of the State's submission;

(4) Indicate where and when the State's submission may be reviewed by the public;

(5) Indicate whom an interested member of the public should contact with any questions; and

(6) Briefly outline the fundamental aspects of the State's proposed program, and the process for EPA review and decision.

(d) Within 90 days after determining that the State has submitted a complete program, the Administrator shall approve or disapprove the program

based on the requirements of this part and of the CWA and after taking into consideration all comments received. A responsiveness summary shall be prepared by the Regional Office which identifies the public participation activities conducted, describes the matters presented to the public, summarizes significant comments received and explains EPA's response to these comments.

(e) The State and EPA may extend the 90-day review period by mutual agreement.

(f) If the State's submission is materially changed during the 90-day review, either as a result of EPA's review or the State action, the official review period shall begin again upon receipt of the revised submission.

(g) Notice of program approval shall be published by EPA in the FEDERAL REGISTER.

(h) If the Administrator disapproves the State program he or she shall notify the State of the reasons for disapproval and of any revisions or modifications to the State program which are necessary to obtain approval.

§ 501.32 Procedures for revision of State programs.

(a) Any State with an approved State program which requires revision to comply with amendments to federal regulations governing sewage sludge use or disposal (including revisions to this part) must revise its program within one year after promulgation of applicable regulations, unless either the State must amend or enact a statute in order to make the required revision, in which case such revision must take place within 2 years; or a different schedule is established under the Memorandum of Agreement.

(b) State sludge management programs shall follow the procedures for program revision set forth in 40 CFR 123.62.

[54 FR 18786, May 2, 1989, as amended at 63 FR 45127, Aug. 24, 1998]

§ 501.33 Criteria for withdrawal of State programs.

The criteria for withdrawal of sludge management programs shall be those set forth in 40 CFR 123.63.

§ 501.34 Procedures for withdrawal of State programs.

The procedures for withdrawal of sludge management programs shall be those set forth in 40 CFR 123.64.

PART 503—STANDARDS FOR THE USE OR DISPOSAL OF SEWAGE SLUDGE

Subpart A—General Provisions

Sec.
503.1 Purpose and applicability.
503.2 Compliance period.
503.3 Permits and direct enforceability
503.4 Relationship to other regulations.
503.5 Additional or more stringent requirements.
503.6 Exclusions.
503.7 Requirement for a person who prepares sewage sludge.
503.8 Sampling and analysis.
503.9 General definitions.

Subpart B—Land Application

503.10 Applicability.
503.11 Special definitions.
503.12 General requirements.
503.13 Pollutant limits.
503.14 Management practices.
503.15 Operational standards—pathogens and vector attraction reduction.
503.16 Frequency of monitoring.
503.17 Recordkeeping.
503.18 Reporting.

Subpart C—Surface Disposal

503.20 Applicability.
503.21 Special definitions.
503.22 General requirements.
503.23 Pollutant limits (other than domestic septage).
503.24 Management practices.
503.25 Operational standards—pathogens and vector attraction reduction.
503.26 Frequency of monitoring.
503.27 Recordkeeping.
503.28 Reporting.

Subpart D—Pathogens and Vector Attraction Reduction

503.30 Scope.
503.31 Special definitions.
503.32 Pathogens.
503.33 Vector attraction reduction.

Subpart E—Incineration

503.40 Applicability.
503.41 Special definitions.
503.42 General requirements.
503.43 Pollutant limits.

503.44 Operational standard—total hydrocarbons.
503.45 Management practices.
503.46 Frequency of monitoring.
503.47 Recordkeeping.
503.48 Reporting.
APPENDIX A TO PART 503—PROCEDURE TO DETERMINE THE ANNUAL WHOLE SLUDGE APPLICATION RATE FOR A SEWAGE SLUDGE
APPENDIX B TO PART 503—PATHOGEN TREATMENT PROCESSES

AUTHORITY: Sections 405 (d) and (e) of the Clean Water Act, as amended by Pub. L. 95–217, sec. 54(d), 91 Stat. 1591 (33 U.S.C. 1345 (d) and (e)); and Pub. L. 100–4, title IV, sec. 406 (a), (b), 101 Stat., 71, 72 (33 U.S.C. 1251 *et seq.*).

SOURCE: 58 FR 9387, Feb. 19, 1993, unless otherwise noted.

Subpart A—General Provisions

§ 503.1 Purpose and applicability.

(a) *Purpose.* (1) This part establishes standards, which consist of general requirements, pollutant limits, management practices, and operational standards, for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works. Standards are included in this part for sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are pathogen and alternative vector attraction reduction requirements for sewage sludge applied to the land or placed on a surface disposal site.

(2) In addition, the standards in this part include the frequency of monitoring and recordkeeping requirements when sewage sludge is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are reporting requirements for Class I sludge management facilities, publicly owned treatment works (POTWs) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve 10,000 people or more.

(b) *Applicability.* (1) This part applies to any person who prepares sewage sludge, applies sewage sludge to the land, or fires sewage sludge in a sewage sludge incinerator and to the owner/operator of a surface disposal site.

(2) This part applies to sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator.

(3) This part applies to the exit gas from a sewage sludge incinerator stack.

(4) This part applies to land where sewage sludge is applied, to a surface disposal site, and to a sewage sludge incinerator.

§ 503.2 Compliance period.

(a) Compliance with the standards in this part shall be achieved as expeditiously as practicable, but in no case later than February 19, 1994. When compliance with the standards requires construction of new pollution control facilities, compliance with the standards shall be achieved as expeditiously as practicable, but in no case later than February 19, 1995.

(b) The requirements for frequency of monitoring, recordkeeping, and reporting in this part for total hydrocarbons in the exit gas from a sewage sludge incinerator are effective February 19, 1994 or, if compliance with the operational standard for total hydrocarbons in this part requires the construction of new pollution control facilities, February 19, 1995.

(c) All other requirements for frequency of monitoring, recordkeeping, and reporting in this part are effective on July 20, 1993.

(d) Unless otherwise specified in subpart E, compliance with the requirements in §§ 503.41(c) through (r), 503.43(c), (d) and (e), 503.45(a)(1), (b) through (f), 503.46(a)(1), (a)(3), and (c), and 503.47(f) that were revised on September 3, 1999 shall be achieved as expeditiously as practicable, but in no case later than September 5, 2000. When new pollution control facilities must be constructed to comply with the revised requirements in subpart E, compliance with the revised requirements shall be achieved as expeditiously as practicable but no later than September 4, 2001.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42568, Aug. 4, 1999]

§ 503.3 Permits and direct enforceability.

(a) Permits. The requirements in this part may be implemented through a permit:

(1) Issued to a ''treatment works treating domestic sewage'', as defined in 40 CFR 122.2, in accordance with 40 CFR parts 122 and 124 by EPA or by a State that has a State sludge management program approved by EPA in accordance with 40 CFR part 123 or 40 CFR part 501 or

(2) Issued under subtitle C of the Solid Waste Disposal Act; part C of the Safe Drinking Water Act; the Marine Protection, Research, and Sanctuaries Act of 1972; or the Clean Air Act. ''Treatment works treating domestic sewage'' shall submit a permit application in accordance with either 40 CFR 122.21 or an approved State program.

(b) Direct enforceability. No person shall use or dispose of sewage sludge through any practice for which requirements are established in this part except in accordance with such requirements.

§ 503.4 Relationship to other regulations.

Disposal of sewage sludge in a municipal solid waste landfill unit, as defined in 40 CFR 258.2, that complies with the requirements in 40 CFR part 258 constitutes compliance with section 405(d) of the CWA. Any person who prepares sewage sludge that is disposed in a municipal solid waste landfill unit shall ensure that the sewage sludge meets the requirements in 40 CFR part 258 concerning the quality of materials disposed in a municipal solid waste landfill unit.

§ 503.5 Additional or more stringent requirements.

(a) On a case-by-case basis, the permitting authority may impose requirements for the use or disposal of sewage sludge in addition to or more stringent than the requirements in this part when necessary to protect public health and the environment from any adverse effect of a pollutant in the sewage sludge.

(b) Nothing in this part precludes a State or political subdivision thereof or interstate agency from imposing requirements for the use or disposal of sewage sludge more stringent than the requirements in this part or from imposing additional requirements for the use or disposal of sewage sludge.

§ 503.6 Exclusions.

(a) *Treatment processes.* This part does not establish requirements for processes used to treat domestic sewage or for processes used to treat sewage sludge prior to final use or disposal, except as provided in § 503.32 and § 503.33.

(b) *Selection of a use or disposal practice.* This part does not require the selection of a sewage sludge use or disposal practice. The determination of the manner in which sewage sludge is used or disposed is a local determination.

(c) *Co-firing of sewage sludge.* This part does not establish requirements for sewage sludge co-fired in an incinerator with other wastes or for the incinerator in which sewage sludge and other wastes are co-fired. Other wastes do not include auxiliary fuel, as defined in 40 CFR 503.41(b), fired in a sewage sludge incinerator.

(d) *Sludge generated at an industrial facility.* This part does not establish requirements for the use or disposal of sludge generated at an industrial facility during the treatment of industrial wastewater, including sewage sludge generated during the treatment of industrial wastewater combined with domestic sewage.

(e) *Hazardous sewage sludge.* This part does not establish requirements for the use or disposal of sewage sludge determined to be hazardous in accordance with 40 CFR part 261.

(f) *Sewage sludge with high PCB concentration.* This part does not establish requirements for the use or disposal of sewage sludge with a concentration of polychlorinated biphenyls (PCBs) equal to or greater than 50 milligrams per kilogram of total solids (dry weight basis).

(g) *Incinerator ash.* This part does not establish requirements for the use or disposal of ash generated during the firing of sewage sludge in a sewage sludge incinerator.

(h) *Grit and screenings.* This part does not establish requirements for the use or disposal of grit (e.g., sand, gravel,

cinders, or other materials with a high specific gravity) or screenings (e.g., relatively large materials such as rags) generated during preliminary treatment of domestic sewage in a treatment works.

(i) *Drinking water treatment sludge.* This part does not establish requirements for the use or disposal of sludge generated during the treatment of either surface water or ground water used for drinking water.

(j) *Commercial and industrial septage.* This part does not establish requirements for the use or disposal of commercial septage, industrial septage, a mixture of domestic septage and commercial septage, or a mixture of domestic septage and industrial septage.

§ 503.7 Requirement for a person who prepares sewage sludge.

Any person who prepares sewage sludge shall ensure that the applicable requirements in this part are met when the sewage sludge is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator.

§ 503.8 Sampling and analysis.

(a) *Sampling.* Representative samples of sewage sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator shall be collected and analyzed.

(b) *Methods.* The materials listed below are incorporated by reference in this part. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The materials are incorporated as they exist on the date of approval, and notice of any change in these materials will be published in the FEDERAL REGISTER. They are available for inspection at the Office of the Federal Register, 7th Floor, suite 700, 800 North Capitol Street, NW., Washington, DC, and at the Office of Water Docket, room L–102, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC. Copies may be obtained from the standard producer or publisher listed in the regulation. Methods in the materials listed below shall be used to analyze samples of sewage sludge.

(1) *Enteric viruses.* ASTM Designation: D 4994–89, ''Standard Practice for Recovery of Viruses From Wastewater Sludges'', 1992 Annual Book of ASTM Standards: Section 11—Water and Environmental Technology, ASTM, 1916 Race Street, Philadelphia, PA 19103–1187.

(2) *Fecal coliform.* Part 9221 E. or Part 9222 D., ''Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.

(3) *Helminth ova.* Yanko, W.A., ''Occurrence of Pathogens in Distribution and Marketing Municipal Sludges'', EPA 600/1–87–014, 1987. National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161 (PB 88–154273/AS).

(4) *Inorganic pollutants.* ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987). Second Edition and Updates I and II are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161 (PB–87–120–291). Third Edition and Revision I are available from Superintendent of Documents, Government Printing Office, 941 North Capitol Street, NE., Washington, DC 20002 (Document Number 955–001–00000–1).

(5) *Salmonella sp. bacteria.* Part 9260 D., ''Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005; or

Kenner, B.A. and H.P. Clark, ''Detection and enumeration of *Salmonella* and *Pseudomonas aeruginosa*'', Journal of the Water Pollution Control Federation, Vol. 46, no. 9, September 1974, pp. 2163–2171. Water Environment Federation, 601 Wythe Street, Alexandria, Virginia 22314.

(6) *Specific oxygen uptake rate.* Part 2710 B., ''Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.

(7) *Total, fixed, and volatile solids.* Part 2540 G., ''Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.

§ 503.9 General definitions.

(a) *Apply sewage sludge or sewage sludge applied to the land* means land application of sewage sludge.

(b) *Base flood* is a flood that has a one percent chance of occurring in any given year (i.e., a flood with a magnitude equalled once in 100 years).

(c) *Class I sludge management facility* is any publicly owned treatment works (POTW), as defined in 40 CFR 501.2, required to have an approved pretreatment program under 40 CFR 403.8(a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 CFR 403.10(e)) and any treatment works treating domestic sewage, as defined in 40 CFR 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

(d) *Cover crop* is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

(e) *CWA* means the Clean Water Act (formerly referred to as either the Federal Water Pollution Act or the Federal Water Pollution Control Act Amendments of 1972), Public Law 92–500, as amended by Public Law 95–217, Public Law 95–576, Public Law 96–483, Public Law 97–117, and Public Law 100–4.

(f) *Domestic septage* is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

(g) *Domestic sewage* is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

(h) *Dry weight basis* means calculated on the basis of having been dried at 105 degrees Celsius until reaching a constant mass (i.e., essentially 100 percent solids content).

(i) *EPA* means the United States Environmental Protection Agency.

(j) *Feed crops* are crops produced primarily for consumption by animals.

(k) *Fiber crops* are crops such as flax and cotton.

(l) *Food crops* are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

(m) *Ground water* is water below the land surface in the saturated zone.

(n) *Industrial wastewater* is wastewater generated in a commercial or industrial process.

(o) *Municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge.

(p) *Permitting authority* is either EPA or a State with an EPA-approved sludge management program.

(q) *Person* is an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

(r) *Person who prepares sewage sludge* is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

(s) *Place sewage sludge or sewage sludge placed* means disposal of sewage sludge on a surface disposal site.

(t) *Pollutant* is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or a pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could, on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.

(u) *Pollutant limit* is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of a pollutant that can be applied to a unit area of land (e.g., kilograms per hectare); or the volume of a material that can be applied to a unit area of land (e.g., gallons per acre).

(v) *Runoff* is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface.

(w) *Sewage sludge* is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

(x) *State* is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian Tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

(y) *Store or storage of sewage sludge* is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

(z) *Treat or treatment of sewage sludge* is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

(aa) *Treatment works* is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

(bb) *Wetlands* means those areas that are inundated or saturated by surface water or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Subpart B—Land Application

§ 503.10 Applicability.

(a) This subpart applies to any person who prepares sewage sludge that is applied to the land, to any person who applies sewage sludge to the land, to sewage sludge applied to the land, and to the land on which sewage sludge is applied.

(b)(1) Bulk sewage sludge. The general requirements in § 503.12 and the management practices in § 503.14 do not apply when bulk sewage sludge is applied to the land if the bulk sewage sludge meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33(b)(1) through (b)(8).

(2) The Regional Administrator of EPA or, in the case of a State with an approved sludge management program, the State Director, may apply any or

all of the general requirements in § 503.12 and the management practices in § 503.14 to the bulk sewage sludge in § 503.10(b)(1) on a case-by-case basis after determining that the general requirements or management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge.

(c)(1) The general requirements in § 503.12 and the management practices in § 503.14 do not apply when a bulk material derived from sewage sludge is applied to the land if the derived bulk material meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33(b)(1) through (b)(8).

(2) The Regional Administrator of EPA or, in the case of a State with an approved sludge management program, the State Director, may apply any or all of the general requirements in § 503.12 or the management practices in § 503.14 to the bulk material in § 503.10(c)(1) on a case-by-case basis after determining that the general requirements or management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge.

(d) The requirements in this subpart do not apply when a bulk material derived from sewage sludge is applied to the land if the sewage sludge from which the bulk material is derived meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33(b)(1) through (b)(8).

(e) Sewage sludge sold or given away in a bag or other container for application to the land. The general requirements in § 503.12 and the management practices in § 503.14 do not apply when sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge sold or given away in a bag or other container for application to the land meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33(b)(1) through (b)(8).

(f) The general requirements in § 503.12 and the management practices in § 503.14 do not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the derived material meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33(b)(1) through (b)(8).

(g) The requirements in this subpart do not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge from which the material is derived meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8).

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42568, Aug. 4, 1999]

§ 503.11 Special definitions.

(a) *Agricultural land* is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

(b) *Agronomic rate* is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

(c) *Annual pollutant loading rate* is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

(d) *Annual whole sludge application rate* is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

(e) *Bulk sewage sludge* is sewage sludge that is not sold or given away in a bag or other container for application to the land.

(f) *Cumulative pollutant loading rate* is the maximum amount of an inorganic pollutant that can be applied to an area of land.

(g) *Forest* is a tract of land thick with trees and underbrush.

(h) *Land application* is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

(i) *Monthly average* is the arithmetic mean of all measurements taken during the month.

(j) *Other container* is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

(k) *Pasture* is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

(l) *Public contact site* is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

(m) *Range land* is open land with indigenous vegetation.

(n) *Reclamation site* is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

§ 503.12 General requirements.

(a) No person shall apply sewage sludge to the land except in accordance with the requirements in this subpart.

(b) No person shall apply bulk sewage sludge subject to the cumulative pollutant loading rates in § 503.13(b)(2) to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in § 503.13(b)(2) has been reached.

(c) No person shall apply domestic septage to agricultural land, forest, or a reclamation site during a 365 day period if the annual application rate in § 503.13(c) has been reached during that period.

(d) The person who prepares bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall provide the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.

(e)(1) The person who applies sewage sludge to the land shall obtain information needed to comply with the requirements in this subpart.

(2)(i) Before bulk sewage sludge subject to the cumulative pollutant loading rates in § 503.13(b)(2) is applied to the land, the person who proposes to apply the bulk sewage sludge shall contact the permitting authority for the State in which the bulk sewage sludge will be applied to determine whether bulk sewage sludge subject to the cumulative pollutant loading rates in § 503.13(b)(2) has been applied to the site since July 20, 1993.

(ii) If bulk sewage sludge subject to the cumulative pollutant loading rates in § 503.13(b)(2) has not been applied to the site since July 20, 1993, the cumulative amount for each pollutant listed in Table 2 of § 503.13 may be applied to the site in accordance with § 503.13(a)(2)(i).

(iii) If bulk sewage sludge subject to the cumulative pollutant loading rates in § 503.13(b)(2) has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site in the bulk sewage sludge since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site in accordance with § 503.13(a)(2)(i).

(iv) If bulk sewage sludge subject to the cumulative pollutant loading rates in § 503.13(b)(2) has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site in the bulk sewage sludge since that date is not known, an additional amount of each pollutant

shall not be applied to the site in accordance with § 503.13(a)(2)(i).

(f) When a person who prepares bulk sewage sludge provides the bulk sewage sludge to a person who applies the bulk sewage sludge to the land, the person who prepares the bulk sewage sludge shall provide the person who applies the sewage sludge notice and necessary information to comply with the requirements in this subpart.

(g) When a person who prepares sewage sludge provides the sewage sludge to another person who prepares the sewage sludge, the person who provides the sewage sludge shall provide the person who receives the sewage sludge notice and necessary information to comply with the requirements in this subpart.

(h) The person who applies bulk sewage sludge to the land shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements in this subpart.

(i) Any person who prepares bulk sewage sludge that is applied to land in a State other than the State in which the bulk sewage sludge is prepared shall provide written notice, prior to the initial application of bulk sewage sludge to the land application site by the applier, to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

(1) The location, by either street address or latitude and longitude, of each land application site.

(2) The approximate time period bulk sewage sludge will be applied to the site.

(3) The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who prepares the bulk sewage sludge.

(4) The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

(j) Any person who applies bulk sewage sludge subject to the cumulative pollutant loading rates in § 503.13(b)(2) to the land shall provide written notice, prior to the initial application of bulk sewage sludge to a land application site by the applier, to the permitting authority for the State in which the bulk sewage sludge will be applied and the permitting authority shall retain and provide access to the notice. The notice shall include:

(1) The location, by either street address or latitude and longitude, of the land application site.

(2) The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) of the person who will apply the bulk sewage sludge.

§ 503.13 Pollutant limits.

(a) Sewage sludge. (1) Bulk sewage sludge or sewage sludge sold or given away in a bag or other container shall not be applied to the land if the concentration of any pollutant in the sewage sludge exceeds the ceiling concentration for the pollutant in Table 1 of § 503.13.

(2) If bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site, either:

(i) The cumulative loading rate for each pollutant shall not exceed the cumulative pollutant loading rate for the pollutant in Table 2 of § 503.13; or

(ii) The concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 3 of § 503.13.

(3) If bulk sewage sludge is applied to a lawn or a home garden, the concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 3 of § 503.13.

(4) If sewage sludge is sold or given away in a bag or other container for application to the land, either:

(i) The concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 3 of § 503.13; or

(ii) The product of the concentration of each pollutant in the sewage sludge and the annual whole sludge application rate for the sewage sludge shall not cause the annual pollutant loading rate for the pollutant in Table 4 of § 503.13 to be exceeded. The procedure used to determine the annual whole sludge application rate is presented in appendix A of this part.

(b) Pollutant concentrations and loading rates—sewage sludge.

(1) Ceiling concentrations.

TABLE 1 OF § 503.13.—CEILING CONCENTRATIONS

Pollutant	Ceiling concentration (milligrams per kilogram) [1]
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

[1] Dry weight basis.

(2) Cumulative pollutant loading rates.

TABLE 2 OF § 503.13.—CUMULATIVE POLLUTANT LOADING RATES

Pollutant	Cumulative pollutant loading rate (kilograms per hectare)
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

(3) Pollutant concentrations.

TABLE 3 OF § 503.13.—POLLUTANT CONCENTRATIONS

Pollutant	Monthly average concentration (milligrams per kilogram) [1]
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

[1] Dry weight basis.

(4) Annual pollutant loading rates.

TABLE 4 OF § 503.13.—ANNUAL POLLUTANT LOADING RATES

Pollutant	Annual pollutant loading rate (kilograms per hectare per 365 day period)
Arsenic	2.0
Cadmium	1.9
Copper	75
Lead	15
Mercury	0.85
Nickel	21
Selenium	5.0
Zinc	140

(c) Domestic septage.

The annual application rate for domestic septage applied to agricultural land, forest, or a reclamation site shall not exceed the annual application rate calculated using equation (1).

$$AAR = \frac{N}{0.0026} \qquad \text{Eq. (1)}$$

Where:

AAR=Annual application rate in gallons per acre per 365 day period.

N=Amount of nitrogen in pounds per acre per 365 day period needed by the crop or vegetation grown on the land.

[58 FR 9387, Feb. 19, 1993, as amended at 58 FR 9099, Feb. 25, 1994; 60 FR 54769, Oct. 25, 1995]

§ 503.14 Management practices.

(a) Bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.

(b) Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters of the United States, as defined in 40 CFR 122.2, except as provided in a permit issued pursuant to section 402 or 404 of the CWA.

(c) Bulk sewage sludge shall not be applied to agricultural land, forest, or a reclamation site that is 10 meters or less from waters of the United States, as defined in 40 CFR 122.2, unless otherwise specified by the permitting authority.

(d) Bulk sewage sludge shall be applied to agricultural land, forest, a public contact site, or a reclamation site at a whole sludge application rate that is equal to or less than the agronomic rate for the bulk sewage sludge, unless, in the case of a reclamation site, otherwise specified by the permitting authority.

(e) Either a label shall be affixed to the bag or other container in which sewage sludge that is sold or given away for application to the land, or an information sheet shall be provided to the person who receives sewage sludge sold or given away in an other container for application to the land. The label or information sheet shall contain the following information:

(1) The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

(2) A statement that application of the sewage sludge to the land is prohibited except in accordance with the instructions on the label or information sheet.

(3) The annual whole sludge application rate for the sewage sludge that does not cause any of the annual pollutant loading rates in Table 4 of § 503.13 to be exceeded.

§ 503.15 Operational standards—pathogens and vector attraction reduction.

(a) *Pathogens—sewage sludge.* (1) The Class A pathogen requirements in § 503.32(a) or the Class B pathogen requirements and site restrictions in § 503.32(b) shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) The Class A pathogen requirements in § 503.32(a) shall be met when bulk sewage sludge is applied to a lawn or a home garden.

(3) The Class A pathogen requirements in § 503.32(a) shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

(b) *Pathogens—domestic septage.* The requirements in either § 503.32 (c)(1) or (c)(2) shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site.

(c) *Vector attraction reduction—sewage sludge.* (1) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(10) shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) shall be met when bulk sewage sludge is applied to a lawn or a home garden.

(3) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

(d) *Vector attraction reduction—domestic septage.* The vector attraction reduction requirements in § 503.33(b)(9), (b)(10), or (b)(12) shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site.

§ 503.16 Frequency of monitoring.

(a) *Sewage sludge.* (1) The frequency of monitoring for the pollutants listed in Table 1, Table 2, Table 3 and Table 4 of § 503.13; the pathogen density requirements in § 503.32(a) and § 503.32(b)(2); and the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(4) and § 503.33 (b)(7) through (b)(8) shall be the frequency in Table 1 of § 503.16.

TABLE 1 OF § 503.16—FREQUENCY OF MONITORING—LAND APPLICATION

Amount of sewage sludge [1] (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year.
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year).
Equal to or greater than 1,500 but less than 15,000	Once per 60 days (six times per year).
Equal to or greater than 15,000	Once per month (12 times per year).

[1] Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge prepared for sale or give-away in a bag or other container for application to the land (dry weight basis).

(2) After the sewage sludge has been monitored for two years at the frequency in Table 1 of § 503.16, the permitting authority may reduce the frequency of monitoring for pollutant concentrations and for the pathogen density requirements in § 503.32(a)(5)(ii) and (a)(5)(iii).

(b) *Domestic septage.* If either the pathogen requirements in § 503.32(c)(2) or the vector attraction reduction requirements in § 503.33(b)(12) are met when domestic septage is applied to agricultural land, forest, or a reclamation site, each container of domestic septage applied to the land shall be monitored for compliance with those requirements.

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[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42569, Aug. 4, 1999]

§ 503.17 Recordkeeping.

(a) *Sewage sludge.* (1) The person who prepares the sewage sludge in § 503.10(b)(1) or (e) shall develop the following information and shall retain the information for five years:

(i) The concentration of each pollutant listed in Table 3 of § 503.13 in the sewage sludge.

(ii) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in § 503.32(a) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(iii) A description of how the Class A pathogen requirements in § 503.32(a) are met.

(iv) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) is met.

(2) The person who derives the material in § 503.10 (c)(1) or (f) shall develop the following information and shall retain the information for five years:

(i) The concentration of each pollutant listed in Table 3 of § 503.13 in the material.

(ii) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in § 503.32(a) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in § 503.33(b)(1) through (b)(8)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(iii) A description of how the Class A pathogen requirements in § 503.32(a) are met.

(iv) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) is met.

(3) If the pollutant concentrations in § 503.13(b)(3), the Class A pathogen requirements in § 503.32(a), and the vector attraction reduction requirements in either § 503.33 (b)(9) or (b)(10) are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(i) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years.

(A) The concentration of each pollutant listed in Table 3 of § 503.13 in the bulk sewage sludge.

(B) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in § 503.32(a) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(C) A description of how the pathogen requirements in § 503.32(a) are met.

(ii) The person who applies the bulk sewage sludge shall develop the following information and shall retain the information for five years.

(A) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14 and the vector attraction reduction requirement in (insert either §503.33(b)(9) or (b)(10)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(B) A description of how the management practices in §503.14 are met for each site on which bulk sewage sludge is applied.

(C) A description of how the vector attraction reduction requirements in either §503.33(b)(9) or (b)(10) are met for each site on which bulk sewage sludge is applied.

(4) If the pollutant concentrations in §503.13(b)(3) and the Class B pathogen requirements in §503.32(b) are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(i) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(A) The concentration of each pollutant listed in Table 3 of §503.13 in the bulk sewage sludge.

(B) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirements in §503.32(b) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in §503.33(b)(1) through (b)(8)if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(C) A description of how the Class B pathogen requirements in §503.32(b) are met.

(D) When one of the vector attraction reduction requirements in §503.33 (b)(1) through (b)(8) is met, a description of how the vector attraction reduction requirement is met.

(ii) The person who applies the bulk sewage sludge shall develop the following information and shall retain the information for five years.

(A) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14, the site restrictions in §503.32(b)(5), and the vector attraction reduction requirement in (insert either §503.33(b)(9) or (b)(10) if one of those requirements is met) was prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(B) A description of how the management practices in §503.14 are met for each site on which bulk sewage sludge is applied.

(C) A description of how the site restrictions in §503.32(b)(5) are met for each site on which bulk sewage sludge is applied.

(D) When the vector attraction reduction requirement in either §503.33 (b)(9) or (b)(10) is met, a description of how the vector attraction reduction requirement is met.

(E) The date bulk sewage sludge is applied to each site.

(5) If the requirements in §503.13(a)(2)(i) are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(i) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years.

(A) The concentration of each pollutant listed in Table 1 of §503.13 in the bulk sewage sludge.

(B) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in (insert either §503.32(a) or §503.32(b)) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in §503.33(b)(1) through

(b)(8) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(C) A description of how the pathogen requirements in either § 503.32 (a) or (b) are met.

(D) When one of the vector attraction requirements in § 503.33 (b)(1) through (b)(8) is met, a description of how the vector attraction requirement is met.

(ii) The person who applies the bulk sewage sludge shall develop the following information, retain the information in § 503.17 (a)(5)(ii)(A) through (a)(5)(ii)(G) indefinitely, and retain the information in § 503.17 (a)(5)(ii)(H) through (a)(5)(ii)(M) for five years.

(A) The location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied.

(B) The number of hectares in each site on which bulk sewage sludge is applied.

(C) The date bulk sewage sludge is applied to each site.

(D) The cumulative amount of each pollutant (i.e., kilograms) listed in Table 2 of § 503.13 in the bulk sewage sludge applied to each site, including the amount in § 503.12(e)(2)(iii).

(E) The amount of sewage sludge (i.e., metric tons) applied to each site.

(F) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the requirement to obtain information in § 503.12(e)(2) was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(G) A description of how the requirements to obtain information in § 503.12(e)(2) are met.

(H) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.14 was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(I) A description of how the management practices in § 503.14 are met for each site on which bulk sewage sludge is applied.

(J) The following certification statement when the bulk sewage sludge meets the Class B pathogen requirements in § 503.32(b):

I certify, under penalty of law, that the information that will be used to determine compliance with the site restrictions in § 503.32(b)(5) for each site on which Class B sewage sludge was applied was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(K) A description of how the site restrictions in § 503.32(b)(5) are met for each site on which Class B bulk sewage sludge is applied.

(L) The following certification statement when the vector attraction reduction requirement in either § 503.33(b)(9) or (b)(10) is met:

I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in (insert either § 503.33(b)(9) or § 503.33(b)(10)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(M) If the vector attraction reduction requirements in either § 503.33 (b)(9) or (b)(10) are met, a description of how the requirements are met.

(6) If the requirements in § 503.13(a)(4)(ii) are met when sewage sludge is sold or given away in a bag or other container for application to the land, the person who prepares the sewage sludge that is sold or given away in a bag or other container shall develop

the following information and shall retain the information for five years:

(i) The annual whole sludge application rate for the sewage sludge that does not cause the annual pollutant loading rates in Table 4 of § 503.13 to be exceeded.

(ii) The concentration of each pollutant listed in Table 4 of § 503.13 in the sewage sludge.

(iii) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the management practice in § 503.14(e), the Class A pathogen requirement in § 503.32(a), and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(iv) A description of how the Class A pathogen requirements in § 503.32(a) are met.

(v) A description of how one of the vector attraction requirements in § 503.33 (b)(1) through (b)(8) is met.

(b) *Domestic septage.* When domestic septage is applied to agricultural land, forest, or a reclamation site, the person who applies the domestic septage shall develop the following information and shall retain the information for five years:

(1) The location, by either street address or latitude and longitude, of each site on which domestic septage is applied.

(2) The number of acres in each site on which domestic septage is applied.

(3) The date domestic septage is applied to each site.

(4) The nitrogen requirement for the crop or vegetation grown on each site during a 365 day period.

(5) The rate, in gallons per acre per 365 day period, at which domestic septage is applied to each site.

(6) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements (insert either § 503.32(c)(1) or § 503.32(c)(2)) and the vector attraction reduction requirement in [insert § 503.33(b)(9), 503.33(b)(10), or § 503.33(b)(12)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(7) A description of how the pathogen requirements in either § 503.32(c)(1) or (c)(2) are met.

(8) A description of how the vector attraction reduction requirements in § 503.33 (b)(9), (b)(10), or (b)(12) are met.

(Approved by the Office of Management and Budget under control number 2040–0157)

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42569, Aug. 4, 1999]

§ 503.18 Reporting.

(a) Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve 10,000 people or more shall submit the following information to the permitting authority:

(1) The information in § 503.17(a), except the information in § 503.17 (a)(3)(ii), (a)(4)(ii) and in (a)(5)(ii), for the appropriate requirements on February 19 of each year.

(2) The information in § 503.17(a)(5)(ii)(A) through (a)(5)(ii)(G) on February 19th of each year when 90 percent or more of any of the cumulative pollutant loading rates in Table 2 of § 503.13 is reached at a land application site.

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[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42570, Aug. 4, 1999]

Subpart C—Surface Disposal

§ 503.20 Applicability.

(a) This subpart applies to any person who prepares sewage sludge that is placed on a surface disposal site, to the owner/operator of a surface disposal site, to sewage sludge placed on a surface disposal site, and to a surface disposal site.

(b) This subpart does not apply to sewage sludge stored on the land or to

the land on which sewage sludge is stored. It also does not apply to sewage sludge that remains on the land for longer than two years when the person who prepares the sewage sludge demonstrates that the land on which the sewage sludge remains is not an active sewage sludge unit. The demonstration shall include the following information, which shall be retained by the person who prepares the sewage sludge for the period that the sewage sludge remains on the land:

(1) The name and address of the person who prepares the sewage sludge.

(2) The name and address of the person who either owns the land or leases the land.

(3) The location, by either street address or latitude and longitude, of the land.

(4) An explanation of why sewage sludge needs to remain on the land for longer than two years prior to final use or disposal.

(5) The approximate time period when the sewage sludge will be used or disposed.

(c) This subpart does not apply to sewage sludge treated on the land or to the land on which sewage sludge is treated.

§ 503.21 Special definitions.

(a) *Active sewage sludge unit* is a sewage sludge unit that has not closed.

(b) *Aquifer* is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

(c) *Contaminate an aquifer* means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR 141.62(b) to be exceeded in the ground water or that causes the existing concentration of nitrate in ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR 141.62(b).

(d) *Cover* is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

(e) *Displacement* is the relative movement of any two sides of a fault measured in any direction.

(f) *Fault* is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to strata on the other side.

(g) *Final cover* is the last layer of soil or other material placed on a sewage sludge unit at closure.

(h) *Holocene time* is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

(i) *Leachate collection system* is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

(j) *Liner* is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

(k) *Lower explosive limit for methane gas* is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

(l) *Qualified ground-water scientist* is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground-water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground-water monitoring, pollutant fate and transport, and corrective action.

(m) *Seismic impact zone* is an area that has a 10 percent or greater probability that the horizontal ground level acceleration of the rock in the area exceeds 0.10 gravity once in 250 years.

(n) *Sewage sludge unit* is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR 122.2.

(o) *Sewage sludge unit boundary* is the outermost perimeter of an active sewage sludge unit.

(p) *Surface disposal site* is an area of land that contains one or more active sewage sludge units.

(q) *Unstable area* is land subject to natural or human-induced forces that

may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42570, Aug. 4, 1999]

§ 503.22 General requirements.

(a) No person shall place sewage sludge on an active sewage sludge unit unless the requirements in this subpart are met.

(b) An active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time; located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to either section 402 or 404 of the CWA, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.

(c) The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to the permitting authority 180 days prior to the date that the active sewage sludge unit closes. The plan shall describe how the sewage sludge unit will be closed and, at a minimum, shall include:

(1) A discussion of how the leachate collection system will be operated and maintained for three years after the sewage sludge unit closes if the sewage sludge unit has a liner and leachate collection system.

(2) A description of the system used to monitor for methane gas in the air in any structures within the surface disposal site and in the air at the property line of the surface disposal site, as required in § 503.24(j)(2).

(3) A discussion of how public access to the surface disposal site will be restricted for three years after the last sewage sludge unit in the surface disposal site closes.

(d) The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the land.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42570, Aug. 4, 1999]

§ 503.23 Pollutant limits (other than domestic septage).

(a) Active sewage sludge unit without a liner and leachate collection system.

(1) Except as provided in § 503.23 (a)(2) and (b), the concentration of each pollutant listed in Table 1 of § 503.23 in sewage sludge placed on an active sewage sludge unit shall not exceed the concentration for the pollutant in Table 1 of § 503.23.

TABLE 1 OF § 503.23.—POLLUTANT CONCENTRATIONS—ACTIVE SEWAGE SLUDGE UNIT WITHOUT A LINER AND LEACHATE COLLECTION

Pollutant	Concentration (milligrams per kilograms [1])
Arsenic	73
Chromium	600
Nickel	420

[1] Dry weight basis.

(2) Except as provided in § 503.23(b), the concentration of each pollutant listed in Table 1 of § 503.23 in sewage sludge placed on an active sewage sludge unit whose boundary is less than 150 meters from the property line of the surface disposal site shall not exceed the concentration determined using the following procedure.

(i) The actual distance from the active sewage sludge unit boundary to the property line of the surface disposal site shall be determined.

(ii) The concentration of each pollutant listed in Table 2 of § 503.23 in the sewage sludge shall not exceed the concentration in Table 2 of § 503.23 that corresponds to the actual distance in § 503.23(a)(2)(i).

TABLE 2 OF § 503.23.—POLLUTANT CONCENTRATIONS—ACTIVE SEWAGE SLUDGE UNIT WITHOUT A LINER AND LEACHATE COLLECTION SYSTEM THAT HAS A UNIT BOUNDARY TO PROPERTY LINE DISTANCE LESS THAN 150 METERS

Unit boundary to property line	Pollutant concentration [1]		
Distance (meters)	Arsenic (mg/kg)	Chromium (mg/kg)	Nickel (mg/kg)
0 to less than 25	30	200	210
25 to less than 50	34	220	240
50 to less than 75	39	260	270
75 to less than 100	46	300	320
100 to less than 125	53	360	390

TABLE 2 OF § 503.23.—POLLUTANT CONCENTRATIONS—ACTIVE SEWAGE SLUDGE UNIT WITHOUT A LINER AND LEACHATE COLLECTION SYSTEM THAT HAS A UNIT BOUNDARY TO PROPERTY LINE DISTANCE LESS THAN 150 METERS—Continued

Unit boundary to property line	Pollutant concentration [1]		
Distance (meters)	Arsenic (mg/kg)	Chromium (mg/kg)	Nickel (mg/kg)
125 to less than 150	62	450	420

[1] Dry weight basis.

(b) Active sewage sludge unit without a liner and leachate collection system—site-specific limits.

(1) At the time of permit application, the owner/operator of a surface disposal site may request site-specific pollutant limits in accordance with § 503.23(b)(2) for an active sewage sludge unit without a liner and leachate collection system when the existing values for site parameters specified by the permitting authority are different from the values for those parameters used to develop the pollutant limits in Table 1 of § 503.23 and when the permitting authority determines that site-specific pollutant limits are appropriate for the active sewage sludge unit.

(2) The concentration of each pollutant listed in Table 1 of § 503.23 in sewage sludge placed on an active sewage sludge unit without a liner and leachate collection system shall not exceed either the concentration for the pollutant determined during a site-specific assessment, as specified by the permitting authority, or the existing concentration of the pollutant in the sewage sludge, whichever is lower.

§ 503.24 Management practices.

(a) Sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.

(b) An active sewage sludge unit shall not restrict the flow of a base flood.

(c) When a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.

(d) An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time, unless otherwise specified by the permitting authority.

(e) An active sewage sludge unit shall not be located in an unstable area.

(f) An active sewage sludge unit shall not be located in a wetland, except as provided in a permit issued pursuant to section 402 or 404 of the CWA.

(g)(1) Run-off from an active sewage sludge unit shall be collected and shall be disposed in accordance with National Pollutant Discharge Elimination System permit requirements and any other applicable requirements.

(2) The run-off collection system for an active sewage sludge unit shall have the capacity to handle run-off from a 24-hour, 25-year storm event.

(h) The leachate collection system for an active sewage sludge unit that has a liner and leachate collection system shall be operated and maintained during the period the sewage sludge unit is active and for three years after the sewage sludge unit closes.

(i) Leachate from an active sewage sludge unit that has a liner and leachate collection system shall be collected and shall be disposed in accordance with the applicable requirements during the period the sewage sludge unit is active and for three years after the sewage sludge unit closes.

(j)(1) When a cover is placed on an active sewage sludge unit, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit for methane gas during the period that the sewage sludge unit is active and the concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit for methane gas during the period that the sewage sludge unit is active.

(2) When a final cover is placed on a sewage sludge unit at closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit for methane gas for three years after the sewage sludge unit closes and the concentration of methane gas in air at the property line

of the surface disposal site shall not exceed the lower explosive limit for methane gas for three years after the sewage sludge unit closes, unless otherwise specified by the permitting authority.

(k) A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit, unless the owner/operator of the surface disposal site demonstrates to the permitting authority that through management practices public health and the environment are protected from any reasonably anticipated adverse effects of pollutants in sewage sludge when crops are grown.

(l) Animals shall not be grazed on an active sewage sludge unit, unless the owner/operator of the surface disposal site demonstrates to the permitting authority that through management practices public health and the environment are protected from any reasonably anticipated adverse effects of pollutants in sewage sludge when animals are grazed.

(m) Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for three years after the last active sewage sludge unit in the surface disposal site closes.

(n)(1) Sewage sludge placed on an active sewage sludge unit shall not contaminate an aquifer.

(2) Results of a ground-water monitoring program developed by a qualified ground-water scientist or a certification by a qualified ground-water scientist shall be used to demonstrate that sewage sludge placed on an active sewage sludge unit does not contaminate an aquifer.

§ 503.25 Operational standards—pathogens and vector attraction reduction.

(a) *Pathogens—sewage sludge (other than domestic septage).* The Class A pathogens requirements in § 503.32(a) or one of the Class B pathogen requirements in § 503.32 (b)(2) through (b)(4) shall be met when sewage sludge is placed on an active sewage sludge unit, unless the vector attraction reduction requirement in § 503.33(b)(11) is met.

(b) *Vector attraction reduction—sewage sludge (other than domestic septage).* One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(11) shall be met when sewage sludge is placed on an active sewage sludge unit.

(c) *Vector attraction reduction—domestic septage.* One of the vector attraction reduction requirement in § 503.33 (b)(9) through (b)(12) shall be met when domestic septage is placed on an active sewage sludge unit.

§ 503.26 Frequency of monitoring.

(a) *Sewage sludge (other than domestic septage).* (1) The frequency of monitoring for the pollutants in Tables 1 and 2 of § 503.23; the pathogen density requirements in § 503.32(a) and in § 503.32(b)(2); and the vector attraction reduction requirements in § 503.33(b)(1) through (b)(4) and § 503.33(b)(7) through (b)(8) for sewage sludge placed on an active sewage sludge unit shall be the frequency in Table 1 of § 503.26.

TABLE 1 OF § 503.26.—FREQUENCY OF MONITORING—SURFACE DISPOSAL

Amount of sewage sludge [1] (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year.
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year).
Equal to or greater than 1,500 but less than 15,000	Once per 60 days (six times per year).
Equal to or greater than 15,000	Once per month (12 times per year).

[1] Amount of sewage sludge placed on an active sewage sludge unit (dry weight basis).

(2) After the sewage sludge has been monitored for two years at the frequency in Table 1 of this section, the permitting authority may reduce the frequency of monitoring for pollutant concentrations and for the pathogen density requirements in § 503.32(a)(5)(ii) and (a)(5)(iii).

(b) *Domestic septage.* If the vector attraction reduction requirements in § 503.33(b)(12) are met when domestic septage is placed on an active sewage

sludge unit, each container of domestic septage shall be monitored for compliance with those requirements.

(c) *Air.* Air in structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the period that the surface disposal site contains an active sewage sludge unit on which the sewage sludge is covered and for three years after a sewage sludge unit closes when a final cover is placed on the sewage sludge.

(Approved by the Office of Management and Budget under control number 2040–0157)

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42570, Aug. 4, 1999]

§ 503.27 Recordkeeping.

(a) When sewage sludge (other than domestic septage) is placed on an active sewage sludge unit:

(1) The person who prepares the sewage sludge shall develop the following information and shall retain the information for five years.

(i) The concentration of each pollutant listed in Table 1 of § 503.23 in the sewage sludge when the pollutant concentrations in Table 1 of § 503.23 are met.

(ii) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in (insert § 503.32(a), § 503.32(b)(2), § 503.32(b)(3), or § 503.32(b)(4) when one of those requirements is met) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(iii) A description of how the pathogen requirements in § 503.32 (a), (b)(2), (b)(3), or (b)(4) are met when one of those requirements is met.

(iv) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) is met when one of those requirements is met.

(2) The owner/operator of the surface disposal site, shall develop the following information and shall retain that information for five years.

(i) The concentration of each pollutant listed in Table 2 of § 503.23 in the sewage sludge when the pollutant concentrations in Table 2 of § 503.23 are met or when site-specific pollutant limits in § 503.23(b) are met.

(ii) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.24 and the vector attraction reduction requirement in (insert one of the requirements in § 503.33(b)(9) through § 503.33(b)(11) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(iii) A description of how the management practices in § 503.24 are met.

(iv) A description of how the vector attraction reduction requirements in § 503.33 (b)(9) through (b)(11) are met if one of those requirements is met.

(b) When domestic septage is placed on a surface disposal site:

(1) If the vector attraction reduction requirements in § 503.33(b)(12) are met, the person who places the domestic septage on the surface disposal site shall develop the following information and shall retain the information for five years:

(i) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirements in § 503.33(b)(12) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

(ii) A description of how the vector attraction reduction requirements in § 503.33(b)(12) are met.

(2) The owner/operator of the surface disposal site shall develop the following information and shall retain that information for five years:

(i) The following certification statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.24 and the vector attraction reduction requirements in (insert § 503.33(b)(9) through § 503.33(b)(11) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.

(ii) A description of how the management practices in § 503.24 are met.

(iii) A description how the vector attraction reduction requirements in § 503.33(b)(9) through § 503.33(b)(11) are met if one of those requirements is met.

(Approved by the Office of Management and Budget under control number 2040–0157)

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42571, Aug. 4, 1999]

§ 503.28 Reporting.

Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve 10,000 people or more shall submit the information in § 503.27(a) to the permitting authority on February 19 of each year.

(Approved by the Office of Management and Budget under control number 2040–0157)

Subpart D—Pathogens and Vector Attraction Reduction

§ 503.30 Scope.

(a) This subpart contains the requirements for a sewage sludge to be classified either Class A or Class B with respect to pathogens.

(b) This subpart contains the site restrictions for land on which a Class B sewage sludge is applied.

(c) This subpart contains the pathogen requirements for domestic septage applied to agricultural land, forest, or a reclamation site.

(d) This subpart contains alternative vector attraction reduction requirements for sewage sludge that is applied to the land or placed on a surface disposal site.

§ 503.31 Special definitions.

(a) *Aerobic digestion* is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

(b) *Anaerobic digestion* is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

(c) *Density of microorganisms* is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

(d) *Land with a high potential for public exposure* is land that the public uses frequently. This includes, but is not limited to, a public contact site and a reclamation site located in a populated area (e.g, a construction site located in a city).

(e) *Land with a low potential for public exposure* is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest, and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

(f) *Pathogenic organisms* are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

(g) *pH* means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

(h) *Specific oxygen uptake rate (SOUR)* is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the sewage sludge.

(i) *Total solids* are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

(j) *Unstabilized solids* are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

(k) *Vector attraction* is the characteristic of sewage sludge that attracts rodents, flies, mosquitos, or other organisms capable of transporting infectious agents.

(l) *Volatile solids* is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42571, Aug. 4, 1999]

§ 503.32 Pathogens.

(a) *Sewage sludge—Class A.* (1) The requirement in § 503.32(a)(2) and the requirements in either § 503.32(a)(3), (a)(4), (a)(5), (a)(6), (a)(7), or (a)(8) shall be met for a sewage sludge to be classified Class A with respect to pathogens.

(2) The Class A pathogen requirements in § 503.32 (a)(3) through (a)(8) shall be met either prior to meeting or at the same time the vector attraction reduction requirements in § 503.33, except the vector attraction reduction requirements in § 503.33 (b)(6) through (b)(8), are met.

(3) *Class A—Alternative 1.* (i) Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f).

(ii) The temperature of the sewage sludge that is used or disposed shall be maintained at a specific value for a period of time.

(A) When the percent solids of the sewage sludge is seven percent or higher, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using equation (2), except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

$$D = \frac{131{,}700{,}000}{10^{0.1400t}} \qquad \text{Eq. (2)}$$

Where,
D=time in days.
t=temperature in degrees Celsius.

(B) When the percent solids of the sewage sludge is seven percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using equation (2).

(C) When the percent solids of the sewage sludge is less than seven percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using equation (2).

(D) When the percent solids of the sewage sludge is less than seven percent; the temperature of the sewage sludge is 50 degrees Celsius or higher; and the time period is 30 minutes or longer, the temperature and time period shall be determined using equation (3).

$$D = \frac{50{,}070{,}000}{10^{0.1400t}} \qquad \text{Eq. (3)}$$

Where,
D=time in days.
t=temperature in degrees Celsius.

(4) *Class A—Alternative 2.* (i) Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f).

(ii)(A) The pH of the sewage sludge that is used or disposed shall be raised

to above 12 and shall remain above 12 for 72 hours.

(B) The temperature of the sewage sludge shall be above 52 degrees Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12.

(C) At the end of the 72 hour period during which the pH of the sewage sludge is above 12, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.

(5) *Class A—Alternative 3.* (i) Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f).

(ii)(A) The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses.

(B) When the density of enteric viruses in the sewage sludge prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.

(C) When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses when the density of enteric viruses in the sewage sludge after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.

(D) After the enteric virus reduction in paragraph (a)(5)(ii)(C) of this section is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in paragraph (a)(5)(ii)(C) of this section.

(iii)(A) The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains viable helminth ova.

(B) When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.

(C) When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than one per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the viable helminth ova density requirement are documented.

(D) After the viable helminth ova reduction in paragraph (a)(5)(iii)(C) of this section is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in paragraph (a)(5)(iii)(C) of this section.

(6) *Class A—Alternative 4.* (i) Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the

time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f).

(ii) The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f), unless otherwise specified by the permitting authority.

(iii) The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f), unless otherwise specified by the permitting authority.

(7) *Class A—Alternative 5.* (i) Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella,* sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10(b), (c), (e), or (f).

(ii) Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in appendix B of this part.

(8) *Class A—Alternative 6.* (i) Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella,* sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10(b), (c), (e), or (f).

(ii) Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

(b) *Sewage sludge—Class B.* (1)(i) The requirements in either § 503.32(b)(2), (b)(3), or (b)(4) shall be met for a sewage sludge to be classified Class B with respect to pathogens.

(ii) The site restrictions in § 503.32(b)(5) shall be met when sewage sludge that meets the Class B pathogen requirements in § 503.32(b)(2), (b)(3), or (b)(4) is applied to the land.

(2) *Class B—Alternative 1.* (i) Seven representative samples of the sewage sludge that is used or disposed shall be collected.

(ii) The geometric mean of the density of fecal coliform in the samples collected in paragraph (b)(2)(i) of this section shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

(3) *Class B—Alternative 2.* Sewage sludge that is used or disposed shall be treated in one of the Processes to Significantly Reduce Pathogens described in appendix B of this part.

(4) *Class B—Alternative 3.* Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permitting authority.

(5) *Site restrictions.* (i) Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally

above the land surface shall not be harvested for 14 months after application of sewage sludge.

(ii) Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.

(iii) Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.

(iv) Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

(v) Animals shall not be grazed on the land for 30 days after application of sewage sludge.

(vi) Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority.

(vii) Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.

(viii) Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

(c) *Domestic septage.* (1) The site restrictions in § 503.32(b)(5) shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site; or

(2) The pH of domestic septage applied to agricultural land, forest, or a reclamation site shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 minutes and the site restrictions in § 503.32 (b)(5)(i) through (b)(5)(iv) shall be met.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42571, Aug. 4, 1999]

§ 503.33 Vector attraction reduction.

(a)(1) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(10) shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) shall be met when bulk sewage sludge is applied to a lawn or a home garden.

(3) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

(4) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(11) shall be met when sewage sludge (other than domestic septage) is placed on an active sewage sludge unit.

(5) One of the vector attraction reduction requirements in § 503.33 (b)(9), (b)(10), or (b)(12) shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site and one of the vector attraction reduction requirements in § 503.33 (b)(9) through (b)(12) shall be met when domestic septage is placed on an active sewage sludge unit.

(b)(1) The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent (see calculation procedures in ''Environmental Regulations and Technology—Control of Pathogens and Vector Attraction in Sewage Sludge'', EPA–625/R–92/013, 1992, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268).

(2) When the 38 percent volatile solids reduction requirement in § 503.33(b)(1) cannot be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

(3) When the 38 percent volatile solids reduction requirement in § 503.33(b)(1) cannot be met for an aerobically digested sewage sludge, vector attraction

reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.

(4) The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

(5) Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40 degrees Celsius and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius.

(6) The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

(7) The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

(8) The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

(9)(i) Sewage sludge shall be injected below the surface of the land.

(ii) No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

(iii) When the sewage sludge that is injected below the surface of the land is Class A with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

(10)(i) Sewage sludge applied to the land surface or placed on an active sewage sludge unit shall be incorporated into the soil within six hours after application to or placement on the land, unless otherwise specified by the permitting authority.

(ii) When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

(11) Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day.

(12) The pH of domestic septage shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 minutes.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42571, Aug. 4, 1999]

Subpart E—Incineration

§ 503.40 Applicability.

(a) This subpart applies to a person who fires sewage sludge in a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator.

(b) This subpart applies to the exit gas from a sewage sludge incinerator stack.

(c) The management practice in § 503.45(a), the frequency of monitoring requirement for total hydrocarbon concentration in § 503.46(b) and the recordkeeping requirements for total hydrocarbon concentration in § 503.47(c) and (n) do not apply if the following conditions are met:

(1) The exit gas from a sewage sludge incinerator stack is monitored continuously for carbon monoxide.

(2) The monthly average concentration of carbon monoxide in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis.

(3) The person who fires sewage sludge in a sewage sludge incinerator

retains the following information for five years:

(i) The carbon monoxide concentrations in the exit gas; and

(ii) A calibration and maintenance log for the instrument used to measure the carbon monoxide concentration.

(4) Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve a population of 10,000 people or greater submit the monthly average carbon monoxide concentrations in the exit gas to the permitting authority on February 19 of each year.

[58 FR 9387, Feb. 19, 1993, as amended at 59 FR 9099, Feb. 25, 1994]

§ 503.41 Special definitions.

(a) *Air pollution control device* is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

(b) *Auxiliary fuel* is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

(c) *Average daily concentration* is the arithmetic mean of the concentration of a pollutant in milligrams per kilogram of sewage sludge (dry weight basis) in the samples collected and analyzed in a month.

(d) *Control efficiency* is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

(e) *Dispersion factor* is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

(f) *Fluidized bed incinerator* is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

(g) *Hourly average* is the arithmetic mean of all measurements, taken during an hour. At least two measurements must be taken during the hour.

(h) *Incineration* is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

(i) *Incinerator operating combustion temperature* is the arithmetic mean of the temperature readings in the hottest zone of the furnace recorded in a day (24 hours) when the temperature is averaged and recorded at least hourly during the hours the incinerator operates in a day.

(j) *Monthly average* is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

(k) *Performance test combustion temperature* is the arithmetic mean of the average combustion temperature in the hottest zone of the furnace for each of the runs in a performance test.

(l) *Risk specific concentration* is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located.

(m) *Sewage sludge feed rate* is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

(n) *Sewage sludge incinerator* is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

(o) *Stack height* is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR 51.100 (ii).

(p) *Total hydrocarbons* means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

(q) *Wet electrostatic precipitator* is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

(r) *Wet scrubber* is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42571, Aug. 4, 1999]

§ 503.42 General requirements.

No person shall fire sewage sludge in a sewage sludge incinerator except in compliance with the requirements in this subpart.

§ 503.43 Pollutant limits.

(a) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Beryllium in subpart C of 40 CFR part 61.

(b) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Mercury in subpart E of 40 CFR part 61.

(c) *Pollutant limit—lead.* (1) The average daily concentration for lead in sewage sludge fed to a sewage sludge incinerator shall not exceed the concentration calculated using Equation (4).

$$C = \frac{0.1 \times NAAQS \times 86{,}400}{DF \times (1 - CE) \times SF} \qquad \text{Eq. (4)}$$

Where:

C = Average daily concentration of lead in sewage sludge.

NAAQS = National Ambient Air Quality Standard for lead in micrograms per cubic meter.

DF = Dispersion factor in micrograms per cubic meter per gram per second.

CE = Sewage sludge incinerator control efficiency for lead in hundredths.

SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

(2) The dispersion factor (DF) in equation (4) shall be determined from an air dispersion model in accordance with § 503.43(e).

(i) When the sewage sludge stack height is 65 meters or less, the actual sewage sludge incinerator stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (4).

(ii) When the sewage sludge incinerator stack height exceeds 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (4).

(3) The control efficiency (CE) for equation (4) shall be determined from a performance test of the sewage sludge incinerator in accordance with § 503.43(e).

(d) *Pollutant limit—arsenic, cadmium, chromium, and nickel.* (1) The average daily concentration for arsenic, cadmium, chromium, and nickel in sewage sludge fed to a sewage sludge incinerator each shall not exceed the concentration calculated using equation (5).

$$C = \frac{RSC \times 86{,}400}{DF \times (1 - CE) \times SF} \qquad \text{Eq. (5)}$$

Where:

C = Average daily concentration of arsenic, cadmium, chromium, or nickel in sewage sludge.

CE = Sewage sludge incinerator control efficiency for arsenic, cadmium, chromium, or nickel in hundredths.

DF = Dispersion factor in micrograms per cubic meter per gram per second.

RSC = Risk specific concentration for arsenic, cadmium, chromium, or nickel in micrograms per cubic meter.

SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

(2) The risk specific concentrations for arsenic, cadmium, and nickel used in equation (5) shall be obtained from Table 1 of § 503.43.

TABLE 1 OF § 503.43.—RISK SPECIFIC CONCENTRATION FOR ARSENIC, CADMIUM, AND NICKEL

Pollutant	Risk specific concentration (micrograms per cubic meter)
Arsenic	0.023
Cadmium	0.057
Nickel	2.0

(3) The risk specific concentration for chromium used in equation (5) shall be obtained from Table 2 of § 503.43 or shall be calculated using equation (6).

TABLE 2 OF § 503.43.—RISK SPECIFIC CONCENTRATION FOR CHROMIUM

Type of Incinerator	Risk specific concentration (micrograms per cubic meter)
Fluidized bed with wet scrubber	0.65
Fluidized bed with wet scrubber and wet electrostatic precipitator	0.23
Other types with wet scrubber	0.064
Other types with wet scrubber and wet electrostatic precipitator	0.016

$$RSC = \frac{0.0085}{r} \qquad \text{Eq. (6)}$$

Where:

RSC=risk specific concentration for chromium in micrograms per cubic meter used in equation (5).

r=decimal fraction of the hexavalent chromium concentration in the total chromium concentration measured in the exit gas from the sewage sludge incinerator stack in hundredths.

(4) The dispersion factor (DF) in equation (5) shall be determined from an air dispersion model in accordance with § 503.43(e).

(i) When the sewage sludge incinerator stack height is equal to or less than 65 meters, the actual sewage sludge incinerator stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (5).

(ii) When the sewage sludge incinerator stack height is greater than 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (5).

(5) The control efficiency (CE) for equation (5) shall be determined from a performance test of the sewage sludge incinerator in accordance with § 503.43(e).

(e) *Air dispersion modeling and performance testing.* (1) The air dispersion model used to determine the dispersion factor in § 503.43 (c)(2) and (d)(4) shall be appropriate for the geographical, physical, and population characteristics at the sewage sludge incinerator site. The performance test used to determine the control efficiencies in § 503.43 (c)(3) and (d)(5) shall be appropriate for the type of sewage sludge incinerator.

(2) For air dispersion modeling initiated after September 3, 1999, the modeling results shall be submitted to the permitting authority 30 days after completion of the modeling. In addition to the modeling results, the submission shall include a description of the air dispersion model and the values used for the model parameters.

(3) The following procedures, at a minimum, shall apply in conducting performance tests to determine the control efficiencies in § 503.43(c)(3) and (d)(5) after September 3, 1999:

(i) The performance test shall be conducted under representative sewage sludge incinerator conditions at the highest expected sewage sludge feed rate within the design capacity of the sewage sludge incinerator.

(ii) The permitting authority shall be notified at least 30 days prior to any performance test so the permitting authority may have the opportunity to observe the test. The notice shall include a test protocol with incinerator operating conditions and a list of test methods to be used.

(iii) Each performance test shall consist of three separate runs using the applicable test method. The control efficiency for a pollutant shall be the arithmetic mean of the control efficiencies for the pollutant from the three runs.

(4) The pollutant limits in § 503.43 (c) and (d) of this section shall be submitted to the permitting authority no later than 30 days after completion of the air dispersion modeling and performance test.

(5) Significant changes in geographic or physical characteristics at the incinerator site or in incinerator operating conditions require new air dispersion modeling or performance testing to determine a new dispersion factor or a new control efficiency that will be used to calculate revised pollutant limits.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42572, Aug. 4, 1999]

§ 503.44 Operational standard—total hydrocarbons.

(a) The total hydrocarbons concentration in the exit gas from a sewage sludge incinerator shall be corrected for zero percent moisture by multiplying the measured total hydrocarbons concentration by the correction factor calculated using equation (7).

$$\text{Correction factor (percent moisture)} = \frac{1}{(1-X)} \qquad \text{Eq. (7)}$$

Where:

X=decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

(b) The total hydrocarbons concentration in the exit gas from a sewage sludge incinerator shall be corrected to seven percent oxygen by multiplying the measured total hydrocarbons concentration by the correction factor calculated using equation (8).

$$\text{Correction factor (oxygen)} = \frac{14}{(21-Y)} \qquad \text{Eq. (8)}$$

Where:

Y=Percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

(c) The monthly average concentration for total hydrocarbons in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture using the correction factor from equation (7) and to seven percent oxygen using the correction factor from equation (8), shall not exceed 100 parts per million on a volumetric basis when measured using the instrument required by § 503.45(a).

§ 503.45 Management practices.

(a)(1) An instrument that continuously measures and records the total hydrocarbons concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for a sewage sludge incinerator.

(2) The total hydrocarbons instrument shall employ a flame ionization detector; shall have a heated sampling line maintained at a temperature of 150 degrees Celsius or higher at all times; and shall be calibrated at least once every 24-hour operating period using propane.

(b) An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for a sewage sludge incinerator.

(c) An instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for a sewage sludge incinerator.

(d) An instrument that continuously measures and records combustion temperatures shall be installed, calibrated, operated, and maintained for a sewage sludge incinerator.

(e) Operation of a sewage sludge incinerator shall not cause the operating combustion temperature for the sewage sludge incinerator to exceed the performance test combustion temperature by more than 20 percent.

(f) An air pollution control device shall be appropriate for the type of sewage sludge incinerator and the operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For sewage sludge incinerators subject to the requirements in subpart O of 40 CFR part 60, operation of the air pollution control device shall not violate the requirements for the air pollution control device in subpart O of 40 CFR part 60. For all other sewage sludge incinerators, operation of the air pollution control device shall not cause a significant exceedance of the average value

for the air pollution control device operating parameters from the performance test required by § 503.43 (c)(3) and (d)(5).

(g) Sewage sludge shall not be fired in a sewage sludge incinerator if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.

(h) The instruments required in § 503.45(a)–(d) shall be appropriate for the type of sewage sludge incinerator.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999]

§ 503.46 Frequency of monitoring.

(a) Sewage sludge.

(1) The frequency of monitoring for beryllium shall be as required in subpart C of 40 CFR part 61, and for mercury as required in subpart E of 40 CFR part 61.

(2) The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be the frequency in Table 1 of § 503.46.

TABLE 1 OF § 503.46.—FREQUENCY OF MONITORING—INCINERATION

Amount of sewage sludge [1] (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year.
Equal to or greater than 290 but less than 1,500.	Once per quarter (four times per year).
Equal to or greater than 1,500 but less than 15,000.	Once per 60 days (six times per year).
Equal to or greater than 15,000	Once per month (12 times per year).

[1] Amount of sewage sludge fired in a sewage sludge incinerator (dry weight basis).

(3) After the sewage sludge has been monitored for two years at the frequency in Table 1 of § 503.46, the permitting authority may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.

(b) *Total hydrocarbons, oxygen concentration, information to determine moisture content, and combustion temperatures.* The total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure moisture content in the exit gas, and the combustion temperatures for the sewage sludge incinerator shall be monitored continuously.

(c) Air pollution control device operating parameters.

For sewage sludge incinerators subject to the requirements in subpart O of 40 CFR part 60, the frequency of monitoring for the appropriate air pollution control device operating parameters shall be the frequency of monitoring in subpart O of 40 CFR part 60. For all other sewage sludge incinerators, the appropriate air pollution control device operating parameters shall be at least daily.

(Approved by the Office of Management and Budget under control number 2040–0157)

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999]

§ 503.47 Recordkeeping.

(a) The person who fires sewage sludge in a sewage sludge incinerator shall develop the information in § 503.47(b) through § 503.47(n) and shall retain that information for five years.

(b) The concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator.

(c) The total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack.

(d) Information that indicates the requirements in the National Emission Standard for beryllium in subpart C of 40 CFR part 61 are met.

(e) Information that indicates the requirements in the National Emission Standard for mercury in subpart E of 40 CFR part 61 are met.

(f) The operating combustion temperatures for the sewage sludge incinerator.

(g) Values for the air pollution control device operating parameters.

(h) The oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack.

(i) The sewage sludge feed rate.

(j) The stack height for the sewage sludge incinerator.

(k) The dispersion factor for the site where the sewage sludge incinerator is located.

(l) The control efficiency for lead, arsenic, cadmium, chromium, and nickel for each sewage sludge incinerator.

(m) The risk specific concentration for chromium calculated using equation (6), if applicable.

(n) A calibration and maintenance log for the instruments used to measure the total hydrocarbons concentration and oxygen concentration in the exit gas from the sewage sludge incinerator stack, the information needed to determine moisture content in the exit gas, and the combustion temperatures.

(Approved by the Office of Management and Budget under control number 2040–0157)

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999]

§ 503.48 Reporting.

Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve a population of 10,000 people or greater shall submit the information in § 503.47(b) through § 503.47(h) to the permitting authority on February 19 of each year.

(Approved by the Office of Management and Budget under control number 2040–0157)

APPENDIX A TO PART 503—PROCEDURE TO DETERMINE THE ANNUAL WHOLE SLUDGE APPLICATION RATE FOR A SEWAGE SLUDGE

Section 503.13(a)(4)(ii) requires that the product of the concentration for each pollutant listed in Table 4 of § 503.13 in sewage sludge sold or given away in a bag or other container for application to the land and the annual whole sludge application rate (AWSAR) for the sewage sludge not cause the annual pollutant loading rate for the pollutant in Table 4 of § 503.13 to be exceeded. This appendix contains the procedure used to determine the AWSAR for a sewage sludge that does not cause the annual pollutant loading rates in Table 4 of § 503.13 to be exceeded.

The relationship between the annual pollutant loading rate (APLR) for a pollutant and the annual whole sludge application rate (AWSAR) for 1a sewage sludge is shown in equation (1).

$$APLR = C \times AWSAR \times 0.001 \qquad (1)$$

Where:

APLR=Annual pollutant loading rate in kilograms per hectare per 365 day period.

C=Pollutant concentration in milligrams, per kilogram of total solids (dry weight basis).

AWSAR=Annual whole sludge application rate in metric tons per hectare per 365 day period (dry weight basis).

0.001=A conversion factor.

To determine the AWSAR, equation (1) is rearranged into equation (2):

$$AWSAR = \frac{APLR}{C \times 0.001} \qquad (2)$$

The procedure used to determine the AWSAR for a sewage sludge is presented below.

PROCEDURE:

1. Analyze a sample of the sewage sludge to determine the concentration for each of the pollutants listed in Table 4 of § 503.13 in the sewage sludge.

2. Using the pollutant concentrations from Step 1 and the APLRs from Table 4 of § 503.13, calculate an AWSAR for each pollutant using equation (2) above.

3. The AWSAR for the sewage sludge is the lowest AWSAR calculated in Step 2.

APPENDIX B TO PART 503—PATHOGEN TREATMENT PROCESSES

A. Processes to Significantly Reduce Pathogens (PSRP)

1. Aerobic digestion—Sewage sludge is agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.

2. Air drying—Sewage sludge is dried on sand beds or on paved or unpaved basins. The sewage sludge dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.

3. Anaerobic digestion—Sewage sludge is treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.

4. Composting—Using either the within-vessel, static aerated pile, or windrow composting methods, the temperature of the sewage sludge is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.

5. Lime stabilization—Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact.

B. Processes to Further Reduce Pathogens (PFRP)

1. Composting—Using either the within-vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days.

Using the windrow composting method, the temperature of the sewage sludge is maintained at 55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.

2. Heat drying—Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10 percent or lower. Either the temperature of the sewage sludge particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with the sewage sludge as the sewage sludge leaves the dryer exceeds 80 degrees Celsius.

3. Heat treatment—Liquid sewage sludge is heated to a temperature of 180 degrees Celsius or higher for 30 minutes.

4. Thermophilic aerobic digestion—Liquid sewage sludge is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the sewage sludge is 10 days at 55 to 60 degrees Celsius.

5. Beta ray irradiation—Sewage sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).

(6) Gamma ray irradiation—Sewage sludge is irradiated with gamma rays from certain isotopes, such as ^{60}Cobalt and ^{137}Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20° Celsius).

7. Pasteurization—The temperature of the sewage sludge is maintained at 70 degrees Celsius or higher for 30 minutes or longer.

[58 FR 9387, Feb. 19, 1993, as amended at 64 FR 42573, Aug. 4, 1999]

SUBCHAPTER P [RESERVED]
SUBCHAPTER Q—ENERGY POLICY

PART 600—FUEL ECONOMY OF MOTOR VEHICLES

Subpart A—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—General Provisions

Sec.
600.001–86 General applicability.
600.001–93 General applicability.
600.002–85 Definitions.
600.002–93 Definitions.
600.003–77 Abbreviations.
600.004–77 Section numbering, construction.
600.005–81 Maintenance of records and rights of entry.
600.006–86 Data and information requirements for fuel economy vehicles.
600.006–87 Data and information requirements for fuel economy vehicles.
600.006–89 Data and information requirements for fuel economy vehicles.
600.007–80 Vehicle acceptability.
600.008–01 Review of fuel economy data, testing by the Administrator.
600.008–77 Review of fuel economy data, testing by the Administrator.
600.009–85 Hearing on acceptance of test data.
600.010–86 Vehicle test requirements and minimum data requirements.
600.011–93 Reference materials.

Subpart B—Fuel Economy Regulations for 1978 and Later Model Year Automobiles—Test Procedures

600.101–86 General applicability.
600.101–93 General applicability.
600.102–78 Definitions.
600.103–78 Abbreviations.
600.104–78 Section numbering, construction.
600.105–78 Recordkeeping.
600.106–78 Equipment requirements.
600.107–78 Fuel specifications.
600.107–93 Fuel specifications.
600.108–78 Analytical gases.
600.109–78 EPA driving cycles.
600.110–78 Equipment calibration.
600.111–80 Test procedures.
600.111–93 Test procedures.
600.112–78 Exhaust sample analysis.
600.113–78 Fuel economy calculations.
600.113–88 Fuel economy calculations.
600.113–93 Fuel economy calculations.

Subpart C—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—Procedures for Calculating Fuel Economy Values

600.201–86 General applicability.
600.201–93 General applicability.
600.202–77 Definitions.
600.203–77 Abbreviations.
600.204–77 Section numbering, construction.
600.205–77 Recordkeeping.
600.206–86 Calculation and use of fuel economy values for gasoline-fueled, diesel, and electric vehicle configurations.
600.206–93 Calculation and use of fuel economy values for gasoline-fueled, diesel-fueled, electric, alcohol-fueled, natural gas-fueled, alcohol dual fuel, and natural gas dual fuel vehicle configurations.
600.207–86 Calculation of fuel economy values for a model type.
600.207–93 Calculation of fuel economy values for a model type.
600.208–77 Sample calculation.
600.209–85 Calculation of fuel economy values for labeling.
600.209–95 Calculation of fuel economy values for labeling.

Subpart D—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—Labeling

600.301–86 General applicability.
600.301–95 General applicability.
600.302–77 Definitions.
600.303–77 Abbreviations.
600.304–77 Section numbering, construction.
600.305–77 Recordkeeping.
600.306–86 Labeling requirements.
600.307–86 Fuel economy label format requirements.
600.307–95 Fuel economy label format requirements.
600.310–86 Labeling of high altitude vehicles.
600.311–86 Range of fuel economy for comparable automobiles.
600.312–86 Labeling, reporting, and recordkeeping; Administrator reviews.
600.313–01 Timetable for data and information submittal and review.
600.313–86 Timetable for data and information submittal and review.
600.314–01 Updating label values, annual fuel cost, Gas Guzzler Tax, and range of fuel economies for comparable automobiles.
600.314–86 Updating label values, annual fuel cost, Gas Guzzler Tax, and range of fuel economies for comparable automobiles.
600.315–82 Classes of comparable automobiles.

600.316–78 Multistage manufacturer.

Subpart E—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—Dealer Availability of Fuel Economy Information

600.401–77 General applicability.
600.402–77 Definitions.
600.403–77 Abbreviations.
600.404–77 Section numbering, construction.
600.405–77 Dealer requirements.
600.406–77 [Reserved]
600.407–77 Booklets displayed by dealers.

Subpart F—Fuel Economy Regulations for Model Year 1978 Passenger Automobiles and for 1979 and Later Model Year Automobiles (Light Trucks and Passenger Automobiles)—Procedures for Determining Manufacturer's Average Fuel Economy

600.501–85 General applicability.
600.501–86 General applicability.
600.501–93 General applicability.
600.502–81 Definitions.
600.503–78 Abbreviations.
600.504–78 Section numbering, construction.
600.505–78 Recordkeeping.
600.507–86 Running change data requirements.
600.509–86 Voluntary submission of additional data.
600.510–86 Calculation of average fuel economy.
600.510–93 Calculation of average fuel economy.
600.511–80 Determination of domestic production.
600.512–01 Model year report.
600.512–86 Model year report.
600.513–81 Gas Guzzler Tax.
600.513–91 Gas Guzzler Tax.

APPENDIX I TO PART 600—HIGHWAY FUEL ECONOMY DRIVING SCHEDULE
APPENDIX II TO PART 600—SAMPLE FUEL VALUE CALCULATIONS
APPENDIX III TO PART 600—SAMPLE FUEL ECONOMY LABEL CALCULATION (1977 MODEL YEAR)
APPENDICES IV–VII TO PART 600 [RESERVED]
APPENDIX VIII TO PART 600—FUEL ECONOMY LABEL FORMATS

AUTHORITY: 15 U.S.C. 2001, 2002, 2003, 2005, 2006, and 2013.

SOURCE: 41 FR 38685, Sept. 10, 1976, unless otherwise noted.

EDITORIAL NOTE: For a document removing the OMB control number wherever it appeared in part 600, see 58 FR 34370, June 25, 1993.

Subpart A—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—General Provisions

§ 600.001–86 General applicability.

(a) The provisions of this subpart are applicable to 1986 and later model year gasoline-fueled and diesel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[49 FR 13847, Apr. 6, 1984]

§ 600.001–93 General applicability.

(a) The provisions of this subpart are applicable to 1993 and later model year gasoline-fueled, diesel-fueled, alcohol-fueled, natural gas-fueled, alcohol dual fuel, and natural gas dual fuel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[59 FR 39649, Aug. 3, 1994]

§ 600.002–85 Definitions.

(a) As used in this subpart, all terms not defined herein shall have the meaning given them in the Act:

(1) ''Act'' means part I of title V of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 1901 et seq.).

(2) ''Administrator'' means the Administrator of the Environmental Protection Agency or his authorized representative.

(3) ''Secretary'' means the Secretary of Transportation or his authorized representative.

(4) ''Automobile'' means:

(i) Any four-wheel vehicle propelled by a combustion engine using onboard fuel or by an electric motor drawing current from rechargeable storage batteries or other portable energy storage devices (rechargeable using energy from a source off the vehicle such as residential electric service),

(ii) Which is manufactured primarily for use on public streets, roads, or highways (except any vehicle operated on a rail or rails),

(iii) Which is rated at not more than 8,500 pounds gross vehicle weight, which has a curb weight of not more than 6,000 pounds, and which has a basic vehicle frontal area of not more than 45 square feet, or

(iv) Is a type of vehicle which the Secretary determines is substantially used for the same purposes.

(5) ''Passenger Automobile'' means any automobile which the Secretary determines is manufactured primarily for use in the transportation of no more than 10 individuals.

(6) ''Model Year'' means the manufacturer's annual production period (as determined by the Administrator) which includes January 1 of such calendar year. If a manufacturer has no annual production period, the term ''model year'' means the calendar year.

(7) ''Federal Emission Test Procedure'' refers to the dynamometer driving schedule, dynamometer procedure, and sampling and analytical procedures described in part 86 for the respective model year, which are used to derive city fuel economy data for gasoline-fueled or diesel vehicles.

(8) ''Federal Highway Fuel Economy Test Procedure'' refers to the dynamometer driving schedule, dynamometer procedure, and sampling and analytical procedures described in subpart B of this part and which are used to derive highway fuel economy data for gasoline-fueled or diesel vehicles.

(9) ''Fuel'' means (i) gasoline and diesel fuel for gasoline- or diesel-powered automobiles or (ii) electrical energy for electrically powered automobiles.

(10) ''Fuel Economy'' means (i) the average number of miles traveled by an automobile or group of automobiles per gallon of gasoline or diesel fuel consumed as computed in §600.113 or §600.207 or (ii) the equivalent petroleum-based fuel economy for an electrically powered automobile as determined by the Secretary of Energy.

(11) ''City Fuel Economy'' means the fuel economy determined by operating a vehicle (or vehicles) over the driving schedule in the Federal emission test procedure.

(12) ''Highway Fuel Economy'' means the fuel economy determined by operating a vehicle (or vehicles) over the driving schedule in the Federal highway fuel economy test procedure.

(13)(i) ''Combined Fuel Economy'' means the fuel economy value determined for a vehicle (or vehicles) by harmonically averaging the city and highway fuel economy values, weighted 0.55 and 0.45 respectively, for gasoline-fueled and diesel vehicles.

(ii) For electric vehicles, the term means the equivalent petroleum-based fuel economy value as determined by the calculation procedure promulgated by the Secretary of Energy.

(14) ''Average Fuel Economy'' means the unique fuel economy value as computed under §600.510 for a specific class of automobiles produced by a manufacturer that is subject to average fuel economy standards.

(15) ''Certification Vehicle'' means a vehicle which is selected under 40 CFR 86.084–24(b)(1) or 40 CFR 86.1824–01 as applicable, and is used to determine compliance under 40 CFR 86.084–30 or 40 CFR 86.1844–01 as applicable for issuance of an original certificate of conformity.

(16) ''Fuel Economy Data Vehicle'' means a vehicle used for the purpose of determining fuel economy which is not a certification vehicle.

(17) ''Label'' means a sticker that contains fuel economy information and is affixed to new automobiles in accordance with subpart D of this part.

(18) ''Dealer'' means a person who resides or is located in the United States, any territory of the United States, or

the District of Columbia and who is engaged in the sale or distribution of new automobiles to the ultimate purchaser.

(19) ''Model Type'' means a unique combination of car line, basic engine, and transmission class.

(20) ''Car Line'' means a name denoting a group of vehicles within a make or car division which has a degree of commonality in construction (e.g., body, chassis). Car line does not consider any level of decor or opulence and is not generally distinguished by characteristics as roof line, number of doors, seats, or windows, except for station wagons or light-duty trucks. Station wagons and light-duty trucks are considered to be different car lines than passenger cars.

(21) ''Basic Engine'' means a unique combination of manufacturer, engine displacement, number of cylinders, fuel system (as distinguished by number of carburetor barrels or use of fuel injection), catalyst usage, and other engine and emission control system characteristics specified by the Administrator. For electric vehicles, basic engine means a unique combination of manufacturer and electric traction motor, motor controller, battery configuration, electrical charging system, energy storage device, and other components as specified by the Administrator.

(22) ''Transmission Class'' means a group of transmissions having the following common features: Basic transmission type (manual, automatic, or semi-automatic); number of forward gears used in fuel economy testing (e.g., manual four-speed, three-speed automatic, two-speed semi-automatic); drive system (e.g., front wheel drive, rear wheel drive; four wheel drive), type of overdrive, if applicable (e.g., final gear ratio less than 1.00, separate overdrive unit); torque converter type, if applicable (e.g., non-lockup, lockup, variable ratio); and other transmission characteristics that may be determined to be significant by the Administrator.

(23) ''Base Level'' means a unique combination of basic engine inertia weight class and transmission class.

(24) ''Vehicle Configuration'' means a unique combination of basic engine, engine code, inertia weight class, transmission configuration, and axle ratio within a base level.

(25) ''Engine Code'' means, for gasoline-fueled and diesel vehicles, a unique combination, within an engine-system combination (as defined in part 86 of this chapter), of displacement, carburetor (or fuel injection) calibration, distributor calibration, choke calibration, auxiliary emission control devices, and other engine and emission control system components specified by the Administrator. For electric vehicles, engine code means a unique combination of manufacturer, electric traction motor, motor configuration, motor controller, and energy storage device.

(26) ''Inertia Weight Class'' means the class, which is a group of test weights, into which a vehicle is grouped based on its loaded vehicle weight in accordance with the provisions of part 86.

(27) ''Transmission Configuration'' means the Administrator may further subdivide within a transmission class if the Administrator determines that sufficient fuel economy differences exist. Features such as gear ratios, torque converter multiplication ratio, stall speed, shift calibration, or shift speed may be used to further distinguish characteristics within a transmission class.

(28) ''Axle Ratio'' means the number of times the input shaft to the differential (or equivalent) turns for each turn of the drive wheels.

(29) ''Auxiliary Emission Control Device (AECD)'' means an element of design as defined in part 86.

(30) ''Rounded'' means a number shortened to the specific number of decimal places in accordance with the ''Round Off Method'' specified in ASTM E 29–67.

(31) ''Calibration'' means the set of specifications, including tolerances, unique to a particular design, version of application of a component, or component assembly capable of functionally describing its operation over its working range.

(32) ''Production Volume'' means, for a domestic manufacturer, the number of vehicle units domestically produced in a particular model year but not exported, and for a foreign manufacturer,

means the number of vehicle units of a particular model imported into the United States.

(33) ''Body Style'' means a level of commonality in vehicle construction as defined by number of doors and roof treatment (e.g., sedan, convertible, fastback, hatchback) and number of seats (i.e., front, second, or third seat) requiring seat belts pursuant to National Highway Traffic Safety Administration safety regulations. Station wagons and light trucks are identified as car lines.

(34) ''Hatchback'' means a passenger automobile where the conventional luggage compartment, i.e., trunk, is replaced by a cargo area which is open to the passenger compartment and accessed vertically by a rear door which encompasses the rear window.

(35) ''Pickup Truck'' means a nonpassenger automobile which has a passenger compartment and an open cargo bed.

(36) ''Station Wagon'' means a passenger automobile with an extended roof line to increase cargo or passenger capacity, cargo compartment open to the passenger compartment, a tailgate, and one or more rear seats readily removed or folded to facilitate cargo carrying.

(37) ''Gross Vehicle Weight Rating'' means the manufacturer's gross weight rating for the individual vehicle.

(38) ''Ultimate Consumer'' means the first person who purchases an automobile for purposes other than resale or leases an automobile.

(39) ''Van'' means any light truck having an integral enclosure fully enclosing the driver compartment and load-carrying device, and having no body sections protruding more than 30 inches ahead of the leading edge of the windshield.

(40) ''Base Vehicle'' means the lowest priced version of each body style that makes up a car line.

(41) ''Nonpassenger Automobile'' means an automobile that is not a passenger automobile, as defined by the Secretary of Transportation at 49 CFR 523.5.

(42) ''Four-Wheel-Drive General Utility Vehicle'' means a four-wheel-drive, general purpose automobile capable of off-highway operation that has a wheelbase not more than 110 inches and that has a body shape similar to a 1977 Jeep CJ–5 or CJ–7, or the 1977 Toyota Land Cruiser, as defined by the Secretary of Transportation at 49 CFR 553.4.

(43) ''Test Weight'' means the weight within an inertia weight class which is used in the dynamometer testing of a vehicle, and which is based on its loaded vehicle weight in accordance with the provisions of part 86.

(44) ''Secretary of Energy'' means the Secretary of Energy or his authorized representative.

(45) ''Electric Traction Motor'' means an electrically powered motor which provides tractive energy to the wheels of a vehicle.

(46) ''Energy Storage Device'' means a rechargeable means of storing tractive energy on board a vehicle such as storage batteries or a flywheel.

(47) ''Motor Controller'' means an electronic or electro-mechanical device to convert energy stored in an energy storage device into a form suitable to power the traction motor.

(48) ''Electrical Charging System'' means a device to convert 60Hz alternating electric current, as commonly available in residential electric service in the United States, to a proper form for recharging the energy storage device.

(49) ''Battery Configuration'' means the electrochemical type, voltage, capacity (in Watt-hours at the c/3 rate), and physical characteristics of the battery used as the tractive energy storage device.

(50) ''Drive System'' is determined by the number and location of drive axles (e.g., front wheel drive, rear wheel drive, four wheel drive) and any other feature of the drive system if the Administrator determines that such other features may result in a fuel economy difference.

(51) ''Subconfiguration'' means a unique combination, within a vehicle configuration of equivalent test weight, road-load horsepower, and any other operational characteristics or parameters which the Administrator determines may significantly affect fuel

economy within a vehicle configuration.

[49 FR 13841, Apr. 6, 1984, as amended at 49 FR 48049, Dec. 10, 1984; 64 FR 23973, May 4, 1999]

§ 600.002–93 Definitions.

(a) As used in this subpart, all terms not defined in this section shall have the meaning given them in the Act:

(1) *Act* means part I of title V of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 1901 *et seq.*).

(2) *Administrator* means the Administrator of the Environmental Protection Agency or his authorized representative.

(3) *Secretary* means the Secretary of Transportation or his authorized representative.

(4) *Automobile* means:

(i) Any four-wheel vehicle propelled by a combustion engine using onboard fuel, or by an electric motor drawing current from rechargeable storage batteries or other portable energy storage devices (rechargeable using energy from a source off the vehicle such as residential electric service);

(ii) Which is manufactured primarily for use on public streets, roads, or highways (except any vehicle operated on a rail or rails);

(iii) Which is rated at not more than 8,500 pounds gross vehicle weight, which has a curb weight of not more than 6,000 pounds, and which has a basic vehicle frontal area of not more than 45 square feet; or

(iv) Is a type of vehicle which the Secretary determines is substantially used for the same purposes.

(5) *Passenger automobile* means any automobile which the Secretary determines is manufactured primarily for use in the transportation of no more than 10 individuals.

(6) *Model year* means the manufacturer's annual production period (as determined by the Administrator) which includes January 1 of such calendar year. If a manufacturer has no annual production period, the term ''model year'' means the calendar year.

(7) *Federal emission test procedure* refers to the dynamometer driving schedule, dynamometer procedure, and sampling and analytical procedures described in part 86 for the respective model year, which are used to derive city fuel economy data.

(8) *Federal highway fuel economy test procedure* refers to the dynamometer driving schedule, dynamometer procedure, and sampling and analytical procedures described in subpart B of this part and which are used to derive highway fuel economy data.

(9) *Fuel* means:

(i) Gasoline and diesel fuel for gasoline- or diesel-powered automobiles; or

(ii) Electrical energy for electrically powered automobiles; or

(iii) Alcohol for alcohol-powered automobiles; or

(iv) Natural gas for natural gas-powered automobiles.

(10) *Fuel economy* means:

(i) The average number of miles traveled by an automobile or group of automobiles per volume of fuel consumed as computed in § 600.113 or § 600.207; or

(ii) The equivalent petroleum-based fuel economy for an electrically powered automobile as determined by the Secretary of Energy.

(11) *City fuel economy* means the fuel economy determined by operating a vehicle (or vehicles) over the driving schedule in the Federal emission test procedure.

(12) *Highway fuel economy* means the fuel economy determined by operating a vehicle (or vehicles) over the driving schedule in the Federal highway fuel economy test procedure.

(13) *Combined fuel economy* means:

(i) The fuel economy value determined for a vehicle (or vehicles) by harmonically averaging the city and highway fuel economy values, weighted 0.55 and 0.45 respectively.

(ii) For electric vehicles, the term means the equivalent petroleum-based fuel economy value as determined by the calculation procedure promulgated by the Secretary of Energy.

(14) *Average fuel economy* means the unique fuel economy value as computed under § 600.510 for a specific class of automobiles produced by a manufacturer that is subject to average fuel economy standards.

(15) *Certification vehicle* means a vehicle which is selected under § 86.084–24(b)(1) of this chapter and used to determine compliance under § 86.084–30 of

this chapter for issuance of an original certificate of conformity.

(16) *Fuel economy data vehicle* means a vehicle used for the purpose of determining fuel economy which is not a certification vehicle.

(17) *Label* means a sticker that contains fuel economy information and is affixed to new automobiles in accordance with subpart D of this part.

(18) *Dealer* means a person who resides or is located in the United States, any territory of the United States, or the District of Columbia and who is engaged in the sale or distribution of new automobiles to the ultimate purchaser.

(19) *Model type* means a unique combination of car line, basic engine, and transmission class.

(20) *Car line* means a name denoting a group of vehicles within a make or car division which has a degree of commonality in construction (e.g., body, chassis). Car line does not consider any level of decor or opulence and is not generally distinguished by characteristics as roof line, number of doors, seats, or windows, except for station wagons or light-duty trucks. Station wagons and light-duty trucks are considered to be different car lines than passenger cars.

(21) *Basic engine* means a unique combination of manufacturer, engine displacement, number of cylinders, fuel system (as distinguished by number of carburetor barrels or use of fuel injection), catalyst usage, and other engine and emission control system characteristics specified by the Administrator. For electric vehicles, basic engine means a unique combination of manufacturer and electric traction motor, motor controller, battery configuration, electrical charging system, energy storage device, and other components as specified by the Administrator.

(22) *Transmission class* means a group of transmissions having the following common features: Basic transmission type (manual, automatic, or semi-automatic); number of forward gears used in fuel economy testing (e.g., manual four-speed, three-speed automatic, two-speed semi-automatic); drive system (e.g., front wheel drive, rear wheel drive; four wheel drive), type of overdrive, if applicable (e.g., final gear ratio less than 1.00, separate overdrive unit); torque converter type, if applicable (e.g., non-lockup, lockup, variable ratio); and other transmission characteristics that may be determined to be significant by the Administrator.

(23) *Base level* means a unique combination of basic engine, inertia weight class and transmission class.

(24) *Vehicle configuration* means a unique combination of basic engine, engine code, inertia weight class, transmission configuration, and axle ratio within a base level.

(25) *Engine code* means a unique combination, within an engine-system combination (as defined in part 86 of this chapter), of displacement, carburetor (or fuel injection) calibration, distributor calibration, choke calibration, auxiliary emission control devices, and other engine and emission control system components specified by the Administrator. For electric vehicles, engine code means a unique combination of manufacturer, electric traction motor, motor configuration, motor controller, and energy storage device.

(26) *Inertia weight class* means the class, which is a group of test weights, into which a vehicle is grouped based on its loaded vehicle weight in accordance with the provisions of part 86 of this chapter.

(27) *Transmission configuration* means the Administrator may further subdivide within a transmission class if the Administrator determines that sufficient fuel economy differences exist. Features such as gear ratios, torque converter multiplication ratio, stall speed, shift calibration, or shift speed may be used to further distinguish characteristics within a transmission class.

(28) *Axle ratio* means the number of times the input shaft to the differential (or equivalent) turns for each turn of the drive wheels.

(29) *Auxiliary emission control device (AECD)* means an element of design as defined in part 86 of this chapter.

(30) *Rounded* means a number shortened to the specific number of decimal places in accordance with the ''Round Off Method'' specified in ASTM E 29 (Incorporated by reference as specified in § 600.011–93).

(31) *Calibration* means the set of specifications, including tolerances, unique to a particular design, version of application of a component, or component assembly capable of functionally describing its operation over its working range.

(32) *Production volume* means, for a domestic manufacturer, the number of vehicle units domestically produced in a particular model year but not exported, and for a foreign manufacturer, means the number of vehicle units of a particular model imported into the United States.

(33) *Body style* means a level of commonality in vehicle construction as defined by number of doors and roof treatment (e.g., sedan, convertible, fastback, hatchback) and number of seats (i.e., front, second, or third seat) requiring seat belts pursuant to National Highway Traffic Safety Administration safety regulations in 49 CFR part 571. Station wagons and light trucks are identified as car lines.

(34) *Hatchback* means a passenger automobile where the conventional luggage compartment, i.e., trunk, is replaced by a cargo area which is open to the passenger compartment and accessed vertically by a rear door which encompasses the rear window.

(35) *Pickup truck* means a nonpassenger automobile which has a passenger compartment and an open cargo bed.

(36) *Station wagon* means a passenger automobile with an extended roof line to increase cargo or passenger capacity, cargo compartment open to the passenger compartment, a tailgate, and one or more rear seats readily removed or folded to facilitate cargo carrying.

(37) *Gross vehicle weight rating* means the manufacturer's gross weight rating for the individual vehicle.

(38) *Ultimate consumer* means the first person who purchases an automobile for purposes other than resale or leases an automobile.

(39) *Van* means any light truck having an integral enclosure fully enclosing the driver compartment and load carrying device, and having no body sections protruding more than 30 inches ahead of the leading edge of the windshield.

(40) *Base vehicle* means the lowest priced version of each body style that makes up a car line.

(41) *Nonpassenger automobile* means an automobile that is not a passenger automobile, as defined by the Secretary of Transportation at 49 CFR 523.5.

(42) *Four-wheel-drive general utility vehicle* means a four-wheel-drive, general purpose automobile capable of off-highway operation that has a wheelbase not more than 110 inches and that has a body shape similar to a 1977 Jeep CJ–5 or CJ–7, or the 1977 Toyota Land Cruiser, as defined by the Secretary of Transportation at 49 CFR 553.4.

(43) *Test weight* means the weight within an inertia weight class which is used in the dynamometer testing of a vehicle, and which is based on its loaded vehicle weight in accordance with the provisions of part 86 of this chapter.

(44) *Secretary of Energy* means the Secretary of Energy or his authorized representative.

(45) *Electric traction motor* means an electrically powered motor which provides tractive energy to the wheels of a vehicle.

(46) *Energy storage device* means a rechargeable means of storing tractive energy on board a vehicle such as storage batteries or a flywheel.

(47) *Motor controller* means an electronic or electro-mechanical device to convert energy stored in an energy storage device into a form suitable to power the traction motor.

(48) *Electrical charging system* means a device to convert 60Hz alternating electric current, as commonly available in residential electric service in the United States, to a proper form for recharging the energy storage device.

(49) *Battery configuration* means the electrochemical type, voltage, capacity (in Watt-hours at the c/3 rate), and physical characteristics of the battery used as the tractive energy device.

(50) *Drive system* is determined by the number and location of drive axles (e.g., front wheel drive, rear wheel drive, four wheel drive) and any other feature of the drive system if the Administrator determines that such other features may result in a fuel economy difference.

(51) *Subconfiguration* means a unique combination within a vehicle configuration of equivalent test weight, road-load horsepower, and any other operational characteristics or parameters which the Administrator determines may significantly affect fuel economy within a vehicle configuration.

(52) *Alcohol* means a mixture containing 85 percent or more by volume methanol, ethanol, or other alcohols, in any combination.

(53) *Alcohol-fueled automobile* means an automobile designed to operate exclusively on alcohol.

(54) *Alcohol dual fuel automobile* means an automobile:

(i) Which is designed to operate on alcohol and on gasoline or diesel fuel;

(ii) Which provides equal or greater energy efficiency as calculated in accordance with § 600.510(g)(1) while operating on alcohol as it does while operating on gasoline or diesel fuel;

(iii) Which, for model years 1993 through 1995, provides equal or superior energy efficiency, as determined in § 600.510(g)(2) while operating on a mixture of alcohol and gasoline or diesel fuel containing 50 percent gasoline or diesel fuel as it does while operating on gasoline or diesel fuel; and

(iv) Which, in the case of passenger automobiles, meets or exceeds the minimum driving range established by the Department of Transportation in 49 CFR part 538.

(55) ''Natural gas-fueled automobile'' means an automobile designed to operate exclusively on natural gas.

(56) ''Natural gas dual fuel automobile'' means an automobile:

(i) Which is designed to operate on natural gas and on gasoline or diesel fuel;

(ii) Which provides equal or greater energy efficiency as calculated in § 600.510(g)(1) while operating on natural gas as it does while operating on gasoline or diesel fuel; and

(iii) Which, in the case of passenger automobiles, meets or exceeds the minimum driving range established by the Department of Transportation in 49 CFR part 538.

(b) [Reserved]

[59 FR 39650, Aug. 3, 1994]

§ 600.003–77 Abbreviations.

(a) The abbreviations used in this subpart have the same meaning as those in 40 CFR part 86, with the addition of the following: ''MPG'' means miles per gallon. GVWR—Gross Vehicle Weight Rating.

[41 FR 38685, Sept. 10, 1976, as amended at 41 FR 49759, Nov. 10, 1976]

§ 600.004–77 Section numbering, construction.

(a) The model year of initial applicability is indicated by the section number. The two digits following the hyphen designate the first model year for which a section is effective. A section is effective until superseded.

Example: Section 600.111–78 applies to the 1978 and subsequent model years until superseded. If a § 600.111–81 is promulgated, it would take effect beginning with the 1981 model year; § 600.111–78 would apply to model years 1978 through 1980.

(b) A section reference without a model year suffix refers to the section applicable for the appropriate model year.

[59 FR 39651, Aug. 3, 1994]

§ 600.005–81 Maintenance of records and rights of entry.

The provisions of this section are applicable to all fuel economy data vehicles. Certification vehicles are required to meet the provisions of 40 CFR 86.000–7 or 40 CFR 86.1844–01, as applicable:

(a) The manufacturer of any new motor vehicle subject to any of the standards or procedures prescribed in this part shall establish, maintain, and retain the following adequately organized and indexed records:

(1) *General records.* (i) Identification and description of all vehicles for which data are submitted to meet the requirements of this part.

(ii) A description of all procedures used to test each vehicle.

(iii) A copy of the information required to be submitted under § 600.006 fulfills the requirements of paragraph (a)(1)(i) of this section.

(2) *Individual records.* (i) A brief history of each vehicle for which data are submitted to meet the requirements of this part, in the form of a separate booklet or other document for each

separate vehicles, in which must be recorded:

(A) The steps taken to ensure that the vehicle with respect to its engine, drive train, fuel system, emission control system components, exhaust after treatment device, vehicle weight, or any other device or component, as applicable, will be representative of production vehicles. In the case of electric vehicles, the manufacturer should describe the steps taken to ensure that the vehicle with respect to its electic traction motor, motor controller, battery configuration, or any other device or component, as applicable, will be representative of production vehicles.

(B) A complete record of all emission tests performed under part 86, all fuel economy tests performed under part 600 (except tests actually performed by EPA personnel), and all electic vehicle tests performed according to procedures promulgated by DOE, including all individual worksheets and other documentation relating to each such test or exact copies thereof; the date, time, purpose, and location of each test; the number of miles accumulated on the vehicle when the tests began and ended; and the names of supervisory personnel responsible for the conduct of the tests.

(C) A description of mileage accumulated since selection of buildup of such vehicles including the date and time of each mileage accumulation listing both the mileage accumulated and the name of each driver, or each operator of the automatic mileage accumulation device, if applicable. Additionally, a description of mileage accumulated prior to selection or buildup of such vechicle must be maintained in such detail as is available.

(D) If used, the record of any devices employed to record the speed of mileage, or both, of the test vehicle in relationship to time.

(E) A record and description of all maintenance and other servicing performed, within 2,000 miles prior to fuel economy testing under this part, giving the date and time of the maintenance or service, the reason for it, the person authorizing it, and the names of supervisory personnel responsible for the conduct of the maintenance or service. A copy of the maintenance information to be submitted under § 600,006–81 fulfills the requirements of this paragraph.

(F) A brief description of any significant events affecting the vehicle during any time of the period covered by the history not described in an entry under one of the previous headings including such extraordinary events as vehicle accidents or driver speeding citations or warnings.

(3) The manufacturer shall retain all records required under this subpart for a period of five years after the end of the model year to which they relate. Records may be retained as hard copy or reduced to microfilm, punch cards, etc., depending on the record retention procedures of the manufacturer, provided that in every case all the information contained in hard copy shall be retained.

(b)(1) Any manufacturer who has supplied fuel economy data to meet the requirements of this part shall admit any EPA Enforcement Officer during operating hours upon presentation of credentials at any of the following:

(i) Any facility where any fuel economy tests from which data are submitted or any procedures or activities connected with these tests are performed.

(ii) Any facility where any new motor vehicle which is being, was, or is to be tested is present.

(iii) Any facility where any construction process used in the modification or buildup of a vehicle into a fuel economy data vehicle is taking place or has taken place.

(iv) Any facility where any record or other document relating to any of the above is located.

(2) Upon admission to any facility referred to in paragraph (b)(1) of this section, the manufacturer shall allow any EPA Enforcement Officer:

(i) To inspect and monitor any part or aspect of procedures, activities, and testing facilities, including, but not limited to, monitoring vehicle preconditioning; emission and fuel economy tests and mileage accumulation; maintenance; vehicle soak and storage procedures; and to verify correlation of calibration of test equipment;

(ii) To inspect and make copies of any required records, designs, or other documents; and

(iii) To inspect and photograph any part or aspect of any fuel economy vehicle and any components to be used in the construction thereof.

(3) Any EPA Enforcement Officer will be furnished, by those in charge of facility being inspected, with such reasonable assistance as may be required to help discharge any function listed in this paragraph (b). Each manufacturer is required to have those in charge of the facility furnish such reasonable assistance without charge to EPA whether or not the manufacturer controls the facility.

(4) The duty to admit any EPA Enforcement Officer shall be applicable whether or not the manufacturer owns or controls the facility in question and is applicable to both domestic and foreign manufacturers and facilities. An EPA Enforcement Officer will not attempt to make any inspections which the officer has been informed are in contravention of any law. However, if local law makes it impossible for the EPA Enforcement Officer to verify or to ensure the accuracy of data generated at a facility such that no informed judgment can properly be made as to the accuracy or reliability of data generated by or obtained for the facility, then a vehicle or data from that vehicle shall not be accepted for use in subpart C or F of this part (unless the Administrator is otherwise convinced of the accuracy and reliability of such data).

(5) For purposes of this paragraph (b):

(i) ''Presentation of credentials'' means display of the document designating a person as an EPA Enforcement Officer.

(ii) Where vehicle, component, or engine storage areas or facilities are concerned, ''operating hours'' shall mean all times during which personnel other than custodial personnel are at work in the vicinity of the area or facility and have access to it.

(iii) For facilities or areas other than those covered by paragraph (b)(5)(ii) of this section, the term, ''operating hours'' will mean all times during which an assembly line is in operation or all times during which testing, maintenance, mileage accumulation, production or compilation of records, or any other procedure or activity related to fuel economy testing, or to vehicle manufacturer or assembly, is being carried out in a facility.

(iv) ''Reasonable assistance'' means providing timely and unobstructed access to and opportunity for the copying of any record, book, paper, or document required to be maintained under this section and providing timely and unobstructed access to any motor vehicle, testing facility, or testing equipment.

(v) Any entry without 24 hours prior written or oral notification to the affected manufacturer shall be authorized in writing by the Assistant Administrator for Enforcement.

[45 FR 49259, July 24, 1980, as amended at 64 FR 23973, May 4, 1999]

§ 600.006–86 Data and information requirements for fuel economy vehicles.

(a) For certification vehicles with less than 10,000 miles, the requirements of this section are considered to have been met except as noted in paragraph (c) of this section.

(b)(1) The manufacturer shall submit the following information for each fuel economy data vehicle:

(i) A description of the vehicle, exhaust emission test results, applicable deterioration factors, and adjusted exhaust emission levels.

(ii) A statement of the origin of the vehicle including total mileage accumulation, and modifications (if any) from the vehicle configuration in which the mileage was accumulated. (For modifications requiring advance approval by the Administrator, the name of the Administrator's representative approving the modification and date of approval are required.) If the vehicle was previously used for testing for compliance with part 86 of this chapter or previously accepted by the Administrator as a fuel economy data vehicle in a different configuration, the requirements of this paragraph may be satisfied by reference to the vehicle number and previous configuration.

(iii) A statement that the fuel economy data vehicle, with respect to which data are submitted:

(A) Has been tested in accordance with applicable test procedures,

(B) Is, to the best of the manufacturer's knowledge, representative of the vehicle configuration listed, and

(C) Is in compliance with the applicable exhaust emission standards.

(2) The manufacturer shall retain the following information for each fuel economy data vehicle, and make it available to the Administrator upon request:

(i) A description of all maintenance to engine, emission control system, or fuel system components performed within 2,000 miles prior to fuel economy testing.

(ii) In the case of electric vehicles, the manufacturer should provide a description of all maintenance to electric motor, motor controller, battery configuration, or other components performed within 2,000 miles prior to fuel economy testing.

(iii) A copy of calibrations for engine, fuel system, and emission control devices, showing the calibration of the actual components on the test vehicle as well as the design tolerances.

(iv) In the case of electric vehicles, the manufacturer should provide a copy of calibrations for the electric motor, motor controller, battery configuration, or other components on the test vehicle as well as the design tolerances.

(v) If calibrations for components in paragraph (b) of this section were submitted previously as part of the description of another vehicle or configuration, the original submittal may be referenced.

(c) The manufacturer shall submit the following fuel economy data:

(1) For vehicles tested to meet the requirements of part 86 (other than those chosen in accordance with § 86.084–24 (c) and (h)), the city and highway fuel economy results from all tests on that vehicle, and the test results adjusted in accordance with paragraph (g) of this section.

(2) For each fuel economy data vehicle, all individual test results (excluding results of invalid and zero mile tests) and, if the data are used in fuel economy label calculations, the test results adjusted in accordance with paragraph (g) of this section.

(d) The manufacturer shall submit an indication of the intended purpose of the data (e.g., data required by the general labeling program or voluntarily submitted for specific labeling).

(e) In lieu of submitting actual data from a test vehicle, a manufacturer may provide fuel economy values derived from an analytical expression, e.g., regression analysis. In order for fuel economy values derived from analytical methods to be accepted, the expression (form and coefficients) must have been approved by the Administrator.

(f) If, in conducting tests required or authorized by this part, the manufacturer utilizes procedures, equipment, or facilities not described in the Application for Certification required in § 86.084–21, the manufacturer shall submit to the Administrator a description of such procedures, equipment, and facilities.

(g)(1) The manufacturer shall adjust all test data used for fuel economy label calculations generated by vehicles with engine-drive system combinations with more than 6,200 miles by using the following equation:

$$FE_{4,000mi} = FE_T\,[0.979 + 5.25\times10^{-6}(mi)]^{-1}$$

Where:

$FE_{4,000mi}$ = Fuel economy data adjusted to 4,000-mile test point rounded to the nearest 0.1 mpg.

FE_T = Tested fuel economy value rounded to the nearest 0.1 mpg.

mi = System miles accumulated at the start of the test rounded to the nearest whole mile.

(2) For vehicles with 6,200 miles (10,000 kilometers) or less accumulated, the manufacturer is not required to adjust the data.

[49 FR 13848, Apr. 6, 1984, as amended at 50 FR 27185, July 1, 1985]

§ 600.006–87 Data and information requirements for fuel economy vehicles.

(a) For certification vehicles with less than 10,000 miles, the requirements of this section are considered to have been met except as noted in paragraph (c) of this section.

(b)(1) The manufacturer shall submit the following information for each fuel economy data vehicle:

(i) A description of the vehicle, exhaust emission test results, applicable deterioration factors, and adjusted exhaust emission levels.

(ii) A statement of the origin of the vehicle including total mileage accumulation, and modifications (if any) from the vehicle configuration in which the mileage was accumulated. (For modifications requiring advance approval by the Administrator, the name of the Administrator's representative approving the modification and date of approval are required.) If the vehicle was previously used for testing for compliance with part 86 of this chapter or previously accepted by the Administrator as a fuel economy data vehicle in a different configuration, the requirements of this paragraph may be satisfied by reference to the vehicle number and previous configuration.

(iii) A statement that the fuel economy data vehicle, with respect to which data are submitted:

(A) Has been tested in accordance with applicable test procedures,

(B) Is, to the best of the manufacturer's knowledge, representative of the vehicle configuration listed, and

(C) Is in compliance with applicable exhaust emission standards.

(2) The manufacturer shall retain the following information for each fuel economy data vehicle, and make it available to the Administrator upon request:

(i) A description of all maintenance to engine, emission control system, or fuel system components performed within 2,000 miles prior to fuel economy testing.

(ii) In the case of electric vehicles, a description of all maintenance to electric motor, motor controller, battery configuration, or other components performed within 2,000 miles prior to fuel economy testing.

(iii) A copy of calibrations for engine, fuel system, and emission control devices, showing the calibration of the actual components on the test vehicle as well as the design tolerances.

(iv) In the case of electric vehicles, a copy of calibrations for the electric motor, motor controller, battery configuration, or other components on the test vehicle as well as the design tolerances.

(v) If calibrations for components specified in paragraph (b)(2) (iii) or (iv) of this section were submitted previously as part of the description of another vehicle or configuration, the original submittal may be referenced.

(c) The manufacturer shall submit the following fuel economy data:

(1) For vehicles tested to meet the requirements of part 86 (other than those chosen in accordance with §86.085–24 (c) and (h)), the city and highway fuel economy results from all tests on that vehicle, and the test results adjusted in accordance with paragraph (g) of this section.

(2) For each fuel economy data vehicle, all individual test results (excluding results of invalid and zero mile tests) and these test results adjusted in accordance with paragraph (g) of this section.

(d) The manufacturer shall submit an indication of the intended purpose of the data (e.g., data required by the general labeling program or voluntarily submitted for specific labeling).

(e) In lieu of submitting actual data from a test vehicle, a manufacturer may provide fuel economy values derived from an analytical expression, e.g., regression analysis. In order for fuel economy values derived from analytical methods to be accepted, the expression (form and coefficients) must have been approved by the Administrator.

(f) If, in conducting tests required or authorized by this part, the manufacturer utilizes procedures, equipment, or facilities not described in the Application for Certification required in §86.087–21, the manufacturer shall submit to the Administrator a description of such procedures, equipment, and facilities.

(g)(1) The manufacturer shall adjust all test data used for fuel economy label calculations in subpart D and average fuel economy calculations in subpart F for passenger automobiles within the categories identified in paragraphs (a)(1) and (a)(2) of §600.510. The test data shall be adjusted in accordance with (g)(3) or (g)(4) as applicable.

(2) The manufacturer shall only adjust the test data used for fuel economy label calculations, in subpart D for light trucks within the categories

identified in paragraphs (a)(3) through (a)(6) of § 600.510. The test data shall be adjusted in accordance with (g)(3) or (g)(4) as applicable.

(3) The manufacturer shall adjust all test data generated by vehicles with engine-drive system combinations with more than 6,200 miles by using the following equation:

$$FE_{4,000mi} = FE_T[0.979 + 5.25 \times 10^{-6} (mi)]^{-1}$$

Where:

$FE_{4,000mi}$=Fuel economy data adjusted to 4,000-mile test point rounded to the nearest 0.1 mpg.

FE_T=Tested fuel economy value rounded to the nearest 0.1 mpg.

mi=System miles accumulated at the start of the test rounded to the nearest whole mile.

(4) For vehicles with 6,200 miles or less accumulated, the manufacturer is not required to adjust the data.

[50 FR 27185, July 1, 1985]

§ 600.006–89 Data and information requirements for fuel economy vehicles.

(a) For certification vehicles with less than 10,000 miles, the requirements of this section are considered to have been met except as noted in paragraph (c) of this section.

(b)(1) The manufacturer shall submit the following information for each fuel economy data vehicle:

(i) A description of the vehicle, exhaust emission test results, applicable deterioration factors, adjusted exhaust emission levels, and test fuel property values as specified in § 600.113–93 except as specified in paragraph (h) of this section.

(ii) A statement of the origin of the vehicle including total mileage accumulation, and modification (if any) form the vehicle configuration in which the mileage was accumulated. (For modifications requiring advance approval by the Administrator, the name of the Administrator's representative approving the modification and date of approval are required.) If the vehicle was previously used for testing for compliance with part 86 of this chapter or previously accepted by the Administrator as a fuel economy data vehicle in a different configuration, the requirements of this paragraph may be satisfied by reference to the vehicle number and previous configuration.

(iii) A statement that the fuel economy data vehicle, with respect to which data are submitted:

(A) Has been tested in accordance with applicable test procedures,

(B) Is, to the best of the manufacturer's knowledge, representative of the vehicle configuration listed, and

(C) Is in compliance with applicable exhaust emission standards.

(2) The manufacturer shall retain the following information for each fuel economy data vehicle, and make it available to the Administrator upon request:

(i) A description of all maintenance to engine, emission control system, or fuel system, or fuel system components performed within 2,000 miles prior to fuel economy testing.

(ii) In the case of electric vehicles, a description of all maintenance to electric motor, motor controller, battery configuration, or other components performed within 2,000 miles prior to fuel economy testing.

(iii) A copy of calibrations for engine, fuel system, and emission control devices, showing the calibration of the actual components on the test vehicle as well as the design tolerances.

(iv) In the case of electric vehicles, a copy of calibrations for the electric motor, motor controller, battery configuration, or other components on the test vehicle as well as the design tolerances.

(v) If calibrations for components specified in paragraph (b)(2) (iii) or (iv) of this section were submitted previously as part of the description of another vehicle or configuration, the original submittal may be referenced.

(c) The manufacturer shall submit the following fuel economy data:

(1) For vehicles tested to meet the requirements of 40 CFR part 86 (other than those chosen in accordance with 40 CFR 86.1829–01(a) or 40 CFR 86.1844–01), the city and highway fuel economy results from all tests on that vehicle, and the test results adjusted in accordance with paragraph (g) of this section.

(2) For each fuel economy data vehicle, all individual test results (excluding results of invalid and zero mile tests) and these test results adjusted in

accordance with paragraph (g) of this section.

(d) The manufacturer shall submit an indication of the intended purpose of the data (e.g., data required by the general labeling program or voluntarily submitted for specific labeling).

(e) In lieu of submitting actual data from a test vehicle, a manufacturer may provide fuel economy values derived from an analytical expression, e.g., regression analysis. In order for fuel economy values derived from analytical methods to be accepted, the expression (form and coefficients) must have been approved by the Administrator.

(f) If, in conducting tests required or authorized by this part, the manufacturer utilizes procedures, equipment, or facilities not described in the Application for Certification required in 40 CFR 86.087–21 or 40 CFR 86.1844–01 as applicable, the manufacturer shall submit to the Administrator a description of such procedures, equipment, and facilities.

(g)(1) The manufacturer shall adjust all test data used for fuel economy label calculations in subpart D and average fuel economy calculations in subpart F for the classes of automobiles within the categories identified in paragraphs (a)(1) through (6) of § 600.510. The test data shall be adjusted in accordance with paragraph (g) (3) or (4) as applicable.

(2) [Reserved]

(3) The manufacturer shall adjust all test data generated by vehicles with engine-drive system combinations with more than 6,200 miles by using the following equation:

$$FE_{4,000mi} = FE_T[0.979 + 5.25 \times 10^{-6} (mi)]^{-1}$$

Where:

$FE_{4,000mi}$ = Fuel economy data adjusted to 4,000-mile test point rounded to the nearest 0.1 mpg.

FE_T = Tested fuel economy value rounded to the nearest 0.1 mpg.

mi = System miles accumulated at the start of the test rounded to the nearest whole mile.

(4) For vehicles with 6,200 miles or less accumulated, the manufacturer is not required to adjust the data.

(h) For light-duty fuel economy trucks over 6000 lbs GVWR, the manufacturer must submit emissions data generated while using the following test weight basis:

(1) Adjusted Loaded Vehicle Weight (ALVW) as defined in § 86.094–2 of this chapter; or

(2) Loaded Vehicle Weight (LVW) as defined in § 86.082–2 of this chapter, in which case the Administrator reserves the right to either require the manufacturer to test using ALVW and submit the data or submit the vehicle for testing by the Administrator for emission standards compliance.

[51 FR 37850, Oct. 24, 1986, as amended at 59 FR 39652, Aug. 3, 1994; 64 FR 23973, May 4, 1999]

§ 600.007–80 Vehicle acceptability.

(a) All certification vehicles and other vehicles tested to meet the requirements of 40 CFR part 86 (other than those chosen per 40 CFR 86.080–24(c) or 40 CFR 86.1829–01(a) as applicable, are considered to have met the requirements of this section.

(b) Any vehicle not meeting the provisions of paragraph (a) must be judged acceptable by the Administrator under this section in order for the test results to be reviewed for use in subpart C or F of this part. The Administrator will judge the acceptability of a fuel economy data vehicle on the basis of the information supplied by the manufacturer under § 600.006(b). The criteria to be met are:

(1) A fuel economy data vehicle may have accumulated not more than 10,000 miles. A vehicle will be considered to have met this requirement if the engine and drivetrain have accumulated 10,000 or fewer miles. The components installed for a fuel economy test are not required to be the ones with which the mileage was accumulated, e.g., axles, transmission types, and tire sizes may be changed. The Administrator will determine if vehicle/engine component changes are acceptable.

(2) A vehicle may be tested in different vehicle configurations by change of vehicle components, as specified in paragraph (b)(1) of this section, or by testing in different inertia weight classes. Also, a single vehicle may be tested under different test conditions, i.e., test weight and/or road load horsepower, to generate fuel economy data

representing various situations within a vehicle configuration. For purposes of this part, data generated by a single vehicle tested in various test conditions will be treated as if the data were generated by the testing of multiple vehicles.

(3) The mileage on a fuel economy data vehicle must be, to the extent possible, accumulated according to 40 CFR 86.079–26(a)(2) or 40 CFR 86.1831–01 as applicable.

(4) Each fuel economy data vehicle must meet the same exhaust emission standards as certification vehicles of the respective engine-system combination during the test in which the city fuel economy test results are generated. The deterioration factors established for the respective engine-system combination per § 86.079–28 or § 86.1841–01 as applicable will be used.

(5) The calibration information submitted under § 600.006(b) must be representative of the vehicle configuration for which the fuel economy data were submitted.

(6) Any vehicle tested for fuel economy purposes must be representative of a vehicle which the manufacturer intends to produce under the provisions of a certificate of conformity.

(7) For vehicles imported under § 85.1509 or § 85.1511 (b)(2), (b)(4), (c)(2), (c)(4), or (e)(2) (when applicable) only the following requirements must be met:

(i) For vehicles imported under § 85.1509, a highway fuel economy value must be generated contemporaneously with the emission test used for purposes of demonstrating compliance with § 85.1509. No modifications or adjustments should be made to the vehicles between the highway fuel economy and the FTP emissions test.

(ii) For vehicles imported under § 85.1509 or § 85.1511 (b)(2), (b)(4), (c)(2), (c)(4) or (e)(2) (when applicable) with over 10,000 miles, the equation in § 600.006–86 (g)(1) shall be used as though only 10,000 miles had been accumulated.

(iii) Any required fuel economy testing must take place after any safety modifications are completed for each vehicle as required by regulations of the Department of Transportation.

(iv) Every vehicle imported under § 85.1509 or § 85.1511 (b)(2), (b)(4), (c)(2), (c)(4) or (e)(2) (when applicable) shall be considered a separate type for the purposes of calculating a fuel economy label for a manufacturer's average fuel economy.

(c) If, based on review of the information submitted under § 600.006(b), the Administrator determines that a fuel economy data vehicle meets the requirements of this section, the fuel economy data vehicle will be judged to be acceptable and fuel economy data from that fuel economy data vehicle will be reviewed pursuant to § 600.008.

(d) If, based on the review of the information submitted under § 600.006(b), the Administrator determines that a fuel economy data vehicle does not meet the requirements of this section, the Administrator will reject that fuel economy data vehicle and inform the manufacturer of the rejection in writing.

(e) If, based on a review of the emission data for a fuel economy data vehicle, submitted under § 600.006(b), or emission data generated by a vehicle tested under § 600.008(e), the Administrator finds an indication of non-compliance with section 202 of the Clean Air Act, 42 U.S.C. 1857 et seq. of the regulation thereunder, he may take such investigative actions as are appropriate to determine to what extent emission non-compliance actually exists.

(1) The Administrator may, under the provisions of 40 CFR 86.079–37(a) or 40 CFR 86.1830–01 as applicable, request the manufacturer to submit production vehicles of the configuration(s) specified by the Administrator for testing to determine to what extent emission noncompliance of a production vehicle configuration or of a group of production vehicle configurations may actually exist.

(2) If the Administrator determines, as a result of his investigation, that substantial emission non-compliance is exhibited by a production vehicle configuration or group of production vehicle configurations, he may proceed with respect to the vehicle configuration(s) as provided under section

206(b)(2) or section 207(c)(1), as applicable of the Clean Air Act, 42 U.S.C. 1857 et seq.

(f) All vehicles used to generate fuel economy data, and for which emission standards apply, must be covered by a certificate of conformity under part 86 of this chapter before:

(1) The data may be used in the calculation of any approved general or specific label value, or

(2) The data will be used in any calculations under subpart F, except that vehicles imported under §§ 85.1509 and 85.1511 need not be covered by a certificate of conformity.

[42 FR 45657, Sept. 12, 1977, as amended at 43 FR 52928, Nov. 14, 1978; 49 FR 48149, Dec. 10, 1984; 52 FR 36164, Sept. 25, 1987; 59 FR 39652, Aug. 3, 1994; 64 FR 23973, May 4, 1999]

§ 600.008–01 Review of fuel economy data, testing by the Administrator.

(a) *Testing by the Administrator.* (1) The Administrator may require that any one or more of the test vehicles be submitted to the Agency, at such place or places as the Agency may designate, for the purposes of conducting fuel economy tests. The Administrator may specify that such testing be conducted at the manufacturer's facility, in which case instrumentation and equipment specified by the Administrator shall be made available by the manufacturer for test operations. Any testing conducted at a manufacturer's facility pursuant to this paragraph shall be scheduled by the manufacturer as promptly as possible.

(2) Retesting and official data determination. For any vehicles selected for confirmatory testing under the provisions of paragraph (a)(1) of this section, the Administrator will follow this procedure:

(i) The manufacturer's data (or harmonically averaged data if more than one test was conducted) will be compared with the results of the Administrator's test.

(ii) If, in the Administrator's judgment, the comparison in paragraph (a)(2)(i) of this section indicates a disparity in the data, the Administrator will repeat the city test or the highway test or both as applicable.

(A) The manufacturer's average test results and the results of the Administrator's first test will be compared with the results of the Administrator's second test as in paragraph (a)(2)(i) of this section.

(B) If, in the Administrator's judgment, both comparisons in paragraph (a)(2)(i)(A) of this section, indicate a disparity in the data, the Administrator will repeat the city fuel economy test or highway fuel economy test or both as applicable until:

(*1*) In the Administrator's judgment no disparity in the data is indicated by comparison of two tests by the Administrator or by comparison of the manufacturer's average test results and a test by the Administrator; or

(*2*) Four city tests or four highway tests or both, as applicable, are conducted by the Administrator in which a disparity in the data is indicated when compared as in paragraph (a)(2)(ii) of this section.

(iii) If there is, in the Administrator's judgment, no disparity indicated by comparison of manufacturer's average test results with a test by the Administrator, the test values generated by the Administrator will be used to represent the vehicle.

(iv) If there is, in the Administrator's judgment, no disparity indicated by comparison of two tests by the Administrator, the harmonic averages of the city and highway fuel economy results from those tests will be used to represent the vehicle.

(v) If the situation in paragraph (a)(2)(ii)(B)(*2*) of this section occurs, the Administrator will notify the manufacturer, in writing, that the Administrator rejects that fuel economy data vehicle.

(b) *Manufacturer-conducted confirmatory testing.* (1) If the Administrators determines not to conduct a confirmatory test under the provisions of paragraph (a) of this section, manufacturers will conduct a confirmatory test at their facility after submitting the original test data to the Administrator whenever any of the following conditions exist:

(i) The vehicle configuration has previously failed an emission standard;

(ii) The test exhibits high emission levels determined by exceeding a percentage of the standards specified by the Administrator for that model year;

(iii) The fuel economy value of the test is higher than expected based on procedures approved by the Administrator;

(iv) The fuel economy value is close to a Gas Guzzler Tax threshold value based on tolerances established by the Administrator for that model year; or

(v) The fuel economy value is a potential fuel economy leader for a class of vehicles based on Administrator provided cut points for that model year.

(2) If the Administrator selects the vehicle for confirmatory testing based on the manufacturer's original test results, the testing shall be conducted as ordered by the Administrator. In this case, the manufacturer-conducted confirmatory testing specified under paragraph (b)(1) of this section would not be required.

(3) The manufacturer shall conduct a retest of the FTP or highway test if the difference between the fuel economy of the confirmatory test and the original manufacturer's test equals or exceeds three percent (or such lower percentage to be applied consistently to all manufacturer conducted confirmatory testing as requested by the manufacturer and approved by the Administrator).

(i) The manufacturer may, in lieu of conducting a retest, accept the lower of the original and confirmatory test fuel economy results for use in subpart C or F of this part.

(ii) The manufacturer shall conduct a second retest of the FTP or highway test if the fuel economy difference between the second confirmatory test and the original manufacturer test equals or exceeds three percent (or such lower percentage as requested by the manufacturer and approved by the Administrator) and the fuel economy difference between the second confirmatory test and the first confirmatory test equals or exceeds three percent (or such lower percentage as requested by the manufacturer and approved by the Administrator). The manufacturer may, in lieu of conducting a second retest, accept the lowest of the original test, the first confirmatory test, and the second confirmatory test fuel economy results for use in subpart C or F of this part.

(c) *Review of fuel economy data.* (1) Fuel economy data must be judged reasonable and representative by the Administrator in order for the test results to be used for the purposes of subpart C or F of this part. In making this determination, the Administrator will, when possible, compare the results of a test vehicle to those of other similar test vehicles.

(2) If testing was conducted by the Administrator under the provisions of paragraph (a) of this section, the fuel economy data determined by the Administrator under paragraph (a) of this section, together with all other fuel economy data submitted for that vehicle under § 600.006(c) or (e) will be evaluated for reasonableness and representativeness per paragraph (c)(1) of this section.

(i) The fuel economy data which are determined to best meet the criteria of paragraph (c) (1) of this section will be accepted for use in subpart C or F of this part.

(ii) City and highway test data will be considered separately.

(iii) If more than one test was conducted, the Administrator may select an individual test result or the harmonic average of selected test results to satisfy the requirements of paragraph (c)(2)(i) of this section.

(3) If confirmatory testing was not conducted by the Administrator but confirmatory testing was conducted by the manufacturer under the provisions of paragraph (b) of this section, the fuel economy data determined by the Administrator under paragraph (b) of this section, will be evaluated for reasonableness and representativeness per paragraph (c)(1) of this section.

(i) The fuel economy data which are determined to best meet the criteria of paragraph (c)(1) of this section will be accepted for use in subpart C or F of this part.

(ii) City and highway test data will be considered separately.

(iii) If more than one test was conducted, the Administrator may select an individual test result or the harmonic average of selected test results to satisfy the requirements of paragraph (c)(2)(i) of this section.

(4) If no confirmatory testing was conducted by either the Administrator

or the manufacturer under the provisions of paragraph (a) and (b) of this section, respectively, then the data submitted under the provisions of §600.006(c) or (e) shall be accepted for use in subpart C or F of this part.

(i) City and highway test data will be considered separately.

(ii) If more than one test was conducted, the harmonic average of the test results shall be accepted for use in subpart C or F of this part.

(d) If, based on a review of the fuel economy data generated by testing under paragraph (a) of this section, the Administrator determines that an unacceptable level of correlation exists between fuel economy data generated by a manufacturer and fuel economy data generated by the Administrator, he/she may reject all fuel economy data submitted by the manufacturer until the cause of the discrepancy is determined and the validity of the data is established by the manufacturer.

(e)(1) If, based on the results of an inspection conducted under §600.005(b) or any other information, the Administrator has reason to believe that the manufacturer has not followed proper testing procedures or that the testing equipment is faulty or improperly calibrated, or if records do not exist that will enable him to make a finding of proper testing, the Administrator may notify the manufacturer in writing of his finding and require the manufacturer to:

(i) Submit the test vehicle(s) upon which the data are based or additional test vehicle(s) at a place he may designate for the purpose of fuel economy testing.

(ii) Conduct such additional fuel economy testing as may be required to demonstrate that prior fuel economy test data are reasonable and representative.

(2) Previous acceptance by the Administrator of any fuel economy test data submitted by the manufacturer shall not limit the Administrator's right to require additional testing under paragraph (h)(1) of this section.

(3) If, based on tests required under paragraph (e)(1) of this section, the Administrator determines that any fuel economy data submitted by the manufacturer and used to calculate the manufacturer's fuel economy average was unrepresentative, the Administrator may recalculate the manufacturer's fuel economy average based on fuel economy data that he/she deems representative.

(4) A manufacturer may request a hearing as provided in §600.009 if the Administrator decides to recalculate the manufacturer's average pursuant to determinations made relative to this section.

[64 FR 23973, May 4, 1999]

§600.008–77 Review of fuel economy data, testing by the Administrator.

(a) Fuel economy data must be judged acceptable by the Administrator in order for the test results to be used for the purposes of subpart C or F of this part. The Administrator will evaluate the acceptability of the fuel economy data from either a fuel economy data vehicle or a certification vehicle on the basis of the data submitted under §600.006 or test data generated by the Administrator, as applicable, in accordance with good engineering practice.

(b) If, in the Administrator's judgment, the city and highway fuel economy results (or the harmonic averages, as applicable, if more than one test were conducted) for a fuel economy data vehicle, or for a certification vehicle, are reasonable and representative, the Administrator will accept the fuel economy data (or harmonic averages, as applicable, of the city and highway fuel economy data if more than one test was conducted) for use in subpart C or F of this part. In making this determination, the Administrator will, when possible, compare the results of a test vehicle to those of other similar test vehicles.

(c) If, in the Administrator's judgment, the city and highway fuel economy results (or the harmonic averages if more than one test were conducted) for a fuel economy data vehicle or for a certification vehicle are not reasonable or representative, the Administrator will notify the manufacturer in writing of his finding and require the manufacturer to submit the test vehicle(s) in question, at a place he may designate, for the purpose of fuel economy testing.

(d) The Administrator may require that any fuel economy data vehicle or certification vehicle be submitted, at a place he may designate, for the purpose of confirmation of fuel economy testing.

(e) For any fuel economy data vehicle that the Administrator has required to be submitted, at a place he may designate for the purpose of fuel economy testing, and for any certification vehicle, the Administrator will follow this procedure:

(1) The manufacturer's data (or harmonically averaged data if more than one test was conducted) will be compared with the results of the Administrator's test.

(2) If, in the Administrator's judgment, the comparison in paragraph (e)(1) of this section indicates a disparity in the data, the Administrator will repeat the city test or the highway test or both as applicable.

(i) The manufacturer's average test results and the results of the Administrator's first test will be compared with the results of the Administrator's second test as in paragraph (e)(1) of this section.

(ii) If, in the Administrator's judgment, both comparisons in (e)(2)(i) of this section, indicate a disparity in the data, the Administrator will repeat the city fuel economy test or highway fuel economy test or both as applicable until:

(A) In the Administrator's judgment no disparity in the data is indicated by comparison of two tests by the Administrator or by comparison of the manufacturer's average test results and a test by the Administrator, or

(B) Four city tests or four highway tests or both, as applicable, are conducted by the Administrator in which a disparity in the data is indicated when compared as in paragraph (e)(2) of this section.

(3) If there is, in the Administrator's judgment, no disparity indicated by comparison of manufacturer's average test results with a test by the Administrator, the test values generated by the Administrator will be used to represent the vehicle.

(4) If there is, in the Administrator's judgment, no disparity indicated by comparison of two tests by the Administrator, the harmonic averages of the city and highway fuel economy results from those tests will be used to represent the vehicle.

(5) If the situation in paragraph (e)(2)(ii)(B) of this section occurs, the Administrator will notify the manufacturer, in writing, that the Administrator rejects that fuel economy data vehicle.

(f) The fuel economy data determined by the Administrator under paragraph (e) (3) or (4) of this section, together with all other fuel economy data submitted for that vehicle under § 600.006 (c) or (e) will be evaluated for reasonableness and representativeness per paragraph (b) of this section. The fuel economy data which are determined to best meet the criteria of paragraph (b) of this section will be accepted for use in subpart C or F of this part.

(g) If, based on a review of the fuel economy data generated by testing under paragraph (e) of this section, the Administrator determines that an unacceptable level of correlation exists between fuel economy data generated by a manufacturer and fuel economy data generated by the Administrator, he may reject all fuel economy data submitted by the manufacturer until the cause of the discrepancy is determined and the validity of the data is established by the manufacturer.

(h)(1) If, based on the results of an inspection conducted under § 600.005(b) or any other information, the Administrator has reason to believe that the manufacturer has not followed proper testing procedures or that the testing equipment is faulty or improperly calibrated, or if records do not exist that will enable him to make a finding of proper testing, the Administrator may notify the manufacturer in writing of his finding and require the manufacturer to:

(i) Submit the test vehicle(s) upon which the data are based or additional test vehicle(s) at a place he may designate for the purpose of fuel economy testing.

(ii) Conduct such additional fuel economy testing as may be required to demonstrate that prior fuel economy test data are reasonable and representative.

(2) Previous acceptance by the Administrator of any fuel economy test data submitted by the manufacturer shall not limit the Administrator's right to require additional testing under paragraph (h)(1) of this section.

(3) If, based on tests required under paragraph (h)(1) of this section, the Administrator determines that any fuel economy data submitted by the manufacturer and used to calculate the manufacturer's fuel economy average was unrepresentative, the Administrator may recalculate the manufacturer's fuel economy average based on fuel economy data that he deems representative.

(4) A manufacturer may request a hearing as provided in §600.009 if the Administrator decides to recalculate the manufacturer's average pursuant to determinations made relative to this section.

[41 FR 38685, Sept. 10, 1976, as amended at 41 FR 49760, Nov. 10, 1976]

§600.009–85 Hearing on acceptance of test data.

(a)(1) If the Administrator rejects the following:

(i) The use of a manufacturer's fuel economy data vehicle, in accordance with§600.008 (e) or (g), or

(ii) The use of fuel economy data, in accordance with §600.008 (c), or (f), or

(iii) The determination of a vehicle configuration, in accordance with §600.206(a), or

(iv) The identification of a car line, in accordance with §600.002(a)(20), or

(v) The fuel economy label values determined by the manufacturer under §600.312(a), then

(2)(i) The manufacturer may, within 30 days following receipt of notification of rejection, request a hearing on the Administrator's decision.

(ii) The request must be in writing, signed by an authorized representative of the manufacturer, and include a statement specifying the manufacturer's objections to the Administrator's determinations, and data in support of such objection.

(iii) If, after the review of the request and supporting data, the Administrator finds that the request raises a substantial factual issue(s), the Administrator shall provide the manufacturer with an opportunity to request a hearing in accordance with the provisions of this section with respect to such issue(s).

(b)(1) After granting a request for a hearing under paragraph (a) of this section the Administrator will designate a Presiding Officer for the hearing.

(2) The General Counsel will represent the Environmental Protection Agency in any hearing under this section.

(3) If a time and place for the hearing has not been fixed by the Administrator under paragraph (a) of this section the hearing will be held as soon as practicable at a time and place fixed by the Administrator or by the Presiding Officer.

(c)(1) Upon his appointment pursuant to paragraph (a) of this section, the Presiding Officer shall establish a hearing file. The file consists of the notice issued by the Administrator under paragraph (a) of this section together with any accompanying material, the request for a hearing and the supporting data submitted therewith and correspondence and other data material to the hearing.

(2) The hearing file will be available for inspection by the applicant at the office of the Presiding Officer.

(d) A manufacturer may appear in person, or may be represented by counsel or by any other duly authorized representative.

(e)(1) The Presiding Officer upon the request of any party, or in his discretion, may arrange for a prehearing conference at a time and place specified by the Presiding Officer to consider the following:

(i) Simplification and clarification of the issue;

(ii) Stipulations, admissions of fact, and the introduction of documents;

(iii) Limitation of the number of expert witnesses;

(iv) Possibility of agreement disposing of all or any of the issues in dispute;

(v) Such other matters as may aid in the disposition of the hearing, including such additional tests as may be agreed upon by the parties.

(2) The results of the conference shall be reduced to writing by the Presiding Officer and made part of the record.

(f)(1) Hearings shall be conducted by the Presiding Officer in an informal but orderly and expeditious manner. The parties may offer oral or written evidence, subject to the exclusion by the Presiding Officer of irrelevant, immaterial and repetitious evidence.

(2) Witnesses will not be required to testify under oath. However, the Presiding Officer shall call to the attention of witnesses that their statements may be subject to the provisions of 19 U.S.C. 1001 which imposes penalties for knowingly making false statements or representations, or using false documents in any matter within the jurisdiction of any department or agency of the United States.

(3) Any witnesses may be examined or cross-examined by the Presiding Officer, the parties, or their representatives.

(4) Hearings shall be reported verbatim. Copies of transcripts of proceedings may be purchased by the applicant from the reporter.

(5) All written statements, charts, tabulations, and similar data offered in evidence at the hearing shall, upon a showing satisfactory to the Presiding Officer of their authority, relevancy, and materiality, be received in evidence and shall constitute a part of the record.

(6) Oral argument may be permitted in the discretion of the Presiding Officer and will be reported as part of the record unless otherwise ordered.

(g)(1) The Presiding Officer will make an initial decision which shall include written findings and conclusions and the reasons or basis therefore on all material issues of fact, law or discretion presented on the record. The findings, conclusions, and written decisions shall be provided to the parties and made a part of the record. The initial decision shall become the decision of the Administrator without further proceedings unless there is an appeal to the Administrator or motion for review by the Administrator within 20 days of the date the initial decision was filed.

(2) On appeal from or review of the initial decision the Administrator will have all the powers which he would have in making the initial decision including the discretion to require or allow briefs, oral argument, the taking of additional evidence or the remanding to the Presiding Officer for additional proceedings. The decision by the Administration will include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law or discretion presented on the appeal or considered in the review.

(h) A manufacturer's use of any fuel economy data which the manufacturer challenges pursuant to this section shall not constitute final acceptance by the manufacturer nor prejudice the manufacturer in the exercise of any appeal pursuant to this section challenging such fuel economy data.

[49 FR 13844, Apr. 6, 1984; 49 FR 48149, Dec. 10, 1984]

§ 600.010–86 Vehicle test requirements and minimum data requirements.

(a) For each certification vehicle defined in this part, and for each vehicle tested according to the emission test procedures in 40 CFR part 86 for addition of a model after certification or approval of a running change (40 CFR 86.079–32, 86.079–33 and 86.082–34 or 40 CFR 86.1842–01 as applicable):

(1) The manufacturer shall generate city fuel economy data by testing according to the applicable procedures.

(2) The manufacturer shall generate highway fuel economy data by:

(i) Testing according to applicable procedures, or

(ii) Using an analytical technique, as described in § 600.006(e).

(3) The data generated in paragraphs (a) (1) and (2) of this section, shall be submitted to the Administrator in combination with other data for the vehicle required to be submitted in part 86.

(b) For each fuel economy data vehicle:

(1) The manufacturer shall generate city fuel economy data and highway fuel economy data by:

(i) Testing according to applicable procedures, or

(ii) Use of an analytical technique as described in § 600.006(e), in addition to testing (e.g., city fuel economy data by testing, highway fuel economy data by analytical technique).

(2) The data generated shall be submitted to the Administrator according to the procedures in §600.006.

(c) *Minimum data requirements for labeling.* (1) In order to establish fuel economy label values under §600.306, the manufacturer shall use only test data accepted in accordance with §600.008 (b) and (f) and meeting the minimum coverage of:

(i) Data required for emission certification under 40 CFR 86.084–24, 86.079–32, 86.079–33, and 86.082–34 or 40 CFR 86.1828–01 and 86.1842–01 as applicable,

(ii) Data from the highest projected model year sales subconfiguration within the highest projected model year sales configuration for each base level, and

(iii) For additional model types established under §600.207(a)(2), data from each subconfiguration included within the model type.

(2) For the purpose of recalculating fuel economy label values as required under §600.314(b), the manufacturer shall submit data required under §600.507.

(d) *Minimum data requirements for the manufacturer's average fuel economy.* For the purpose of calculating the manufacturer's average fuel economy under §600.510, the manufacturer shall submit data representing at least 90 percent of the manufacturer's actual model year production, by configuration, for each category identified for calculation under §600.510(a).

[49 FR 13848, Apr. 6, 1984, as amended at 64 FR 23975, May 4, 1999]

§600.011–93 Reference materials.

(a) *Incorporation by reference.* The documents in paragraph (b) of this section have been incorporated by reference. The incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at USEPA, OAR, 401 M Street, SW., Washington DC 20460, or at the Office of the Federal Register, 800 N. Capitol Street, NW., suite 700, Washington, DC.

(b) The following paragraphs and tables set forth the material that has been incorporated by reference in this part.

(1) *ASTM material.* The following table sets forth material from the American Society for Testing and Materials which has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than §600.011, in which the matter is referenced. Copies of these materials may be obtained from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Document number and name	40 CFR part 600 reference
ASTM E 29–67 (Reapproved 1973) Standard Recommended Practice for Indicating which Places of Figures are to be Considered Significant in Specified Limiting Values.	600.002–93(a)(30); 600.113–93(d)
ASTM D 1298–85 (Reapproved 1990) Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method.	600.113–93(c)(1)(i), (c)(2)(i)(A), (c)(2)(i)(B), (c)(2)(ii); 600.510–93 (g)(1)(ii)(B), (g)(2)(ii)(B).
ASTM D 3343–90 Standard Test Method for Estimation of Hydrogen Content of Aviation Fuels ..	600.113–93(c)(1)(ii), (c)(2)(ii).
ASTM D 3338–92 Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels.	600.113–93(c)(1)(iii).
ASTM D 240–92 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter.	600.113–93(c)(2)(iii); 600.510–93 (g)(1)(ii)(A), (g)(2)(ii)(A).

(2) [Reserved]

[59 FR 39652, Aug. 3, 1994]

Subpart B—Fuel Economy Regulations for 1978 and Later Model Year Automobiles—Test Procedures

SOURCE: 42 FR 45657, Sept. 12, 1977, unless otherwise noted.

§ 600.101–86 General applicability.

(a) The provisions of this subpart are applicable to 1986 and later model year gasoline-fueled and diesel automobiles.

[49 FR 13849, Apr. 6, 1984]

§ 600.101–93 General applicability.

The provisions of this subpart are applicable to 1993 and later model year gasoline-fueled, diesel-fueled, alcohol-fueled, natural gas-fueled, alcohol dual fuel, and natural gas dual fuel automobiles.

[59 FR 39652, Aug. 3, 1994]

§ 600.102–78 Definitions.

The definitions in § 600.002 apply to this subpart.

§ 600.103–78 Abbreviations.

The abbreviations in § 600.003 apply to this subpart.

§ 600.104–78 Section numbering, construction.

The section numbering system set forth in § 600.004 applies to this subpart.

§ 600.105–78 Recordkeeping.

The recordkeeping requirements set forth in § 600.005 apply to this subpart.

§ 600.106–78 Equipment requirements.

The requirements for test equipment to be used for all fuel economy testing are given in §§ 86.106, 86.107, 86.108, 86.109, and 86.111 of this chapter, as applicable.

§ 600.107–78 Fuel specifications.

(a) The test fuel specifications for gasoline-fueled automobiles are given in paragraph (a)(1) of § 86.113 of this chapter.

(b) The test fuel specifications for diesel automobiles are given in paragraphs (b) (1) and (2) of § 86.113 of this chapter.

§ 600.107–93 Fuel specifications.

(a) The test fuel specifications for gasoline-fueled automobiles are given in § 86.113(a) (1) and (2) of this chapter.

(b) The test fuel specifications for diesel-fueled automobiles are given in § 86.113(b) (1) through (3) of this chapter.

(c) The test fuel specifications for methanol fuel used in Otto-cycle automobiles are given in § 86.113(a) (3) and (4) of this chapter.

(d) The test fuel specifications for methanol fuel used in diesel cycle automobiles are given in § 86.113(b) (4) through (6) of this chapter.

(e) The test fuel specifications for mixtures of petroleum and methanol fuels for methanol dual fuel vehicles are given in § 86.113(d) of this chapter.

(f) The specification range of the fuels to be used under paragraphs (c) and (d) of this section shall be reported in accordance with § 86.090–21(b)(3) of this chapter.

[59 FR 39652, Aug. 3, 1994]

§ 600.108–78 Analytical gases.

The analytical gases for all fuel economy testing must meet the criteria given in § 86.114 of this chapter.

§ 600.109–78 EPA driving cycles.

(a) The driving cycle to be utilized for generation of the city fuel economy data is prescribed in § 86.115 of this chapter.

(b) The driving cycle to be utilized for generation of the highway fuel economy data is specified in this paragraph.

(1) The Highway Fuel Economy Driving Schedule is set forth in appendix I to this part. The driving schedule is defined by a smooth trace drawn through the specified speed versus time relationships.

(2) The speed tolerance at any given time on the dynamometer driving schedule specified in appendix I, or as printed on a driver's aid chart approved by the Administrator, when conducted to meet the requirements of paragraph (b) of § 600.111 is defined by upper and lower limits. The upper limit is 2 mph higher than the highest point on trace within 1 second of the given time. The lower limit is 2 mph lower than the lowest point on the trace within 1 second of the given time. Speed variations greater than the tolerances (such as may occur during gear changes) are acceptable provided they occur for less than 2 seconds on any occasion. Speeds

lower than those prescribed are acceptable provided the vehicle is operated at maximum available power during such occurrences.

(3) A graphic representation of the range of acceptable speed tolerances is found in paragraph (c) of §86.115 of this chapter.

§600.110–78 Equipment calibration.

The equipment used for fuel economy testing must be calibrated according to the provisions of §86.116 of this chapter.

§600.111–80 Test procedures.

(a) The test procedures to be followed for generation of the city fuel economy data are those prescribed in §§86.127–94 through 86.138–78 of this chapter, as applicable. (The evaporative and refueling loss portions of the test procedure may be omitted unless specifically required by the Administrator.)

(b) The test procedures to be followed for generation of the highway fuel economy data are those specified in §600.111–78 (b) through (h) inclusive.

(1) The Highway Fuel Economy Dynamometer Procedure consists of a preconditioning highway driving sequence and a measured highway driving sequence.

(2) The highway fuel economy test is designated to simulate non-metropolitan driving with an average speed of 48.6 mph and a maximum speed of 60 mph. The cycle is 10.2 miles long with 0.2 stops per mile and consists of warmed-up vehicle operation on a chassis dynamometer through a specified driving cycle. A proportional part of the diluted exhaust emissions is collected continuously for subsequent analysis using a constant volume (variable dilution) sampler. Diesel dilute exhaust is continuously analyzed for hydrocarbons using a heated sample line and analyzer.

(3) Except in cases of component malfunction or failure, all emission control systems installed on or incorporated in a new motor vehicle must be functioning during all procedures in this subpart. The Administrator may authorize maintenance to correct component malfunction or failure.

(c) *Transmission.* The provisions of §86.128 of this chapter apply for vehicle transmission operation during highway fuel economy testing under this subpart.

(d) *Road load power and test weight determination.* Section 86.129 of this chapter applies for determination of road load power and test weight for highway fuel economy testing. The test weight for the testing of a certification vehicle will be that test weight specified by the Administrator under the provisions of part 86. The test weight for a fuel economy data vehicle will be that test weight specified by the Administrator from the test weights covered by that vehicle configuration. The Administrator will base his selection of a test weight on the relative projected sales volumes of the various test weights within the vehicle configuration.

(e) *Vehicle preconditioning.* The Highway Fuel Economy Dynamometer Procedure is designed to be performed immediately following the Federal Emission Test Procedure, §§86.127 through 86.138 of this chapter. When conditions allow, the tests should be scheduled in this sequence. In the event the tests cannot be scheduled within three hours of the Federal Emission Test Procedure (including one hour hot soak evaporation loss test, if applicable) the vehicle should be preconditioned as in paragraph (e)(1) or (2) of this section, as applicable.

(1) If the vehicle has experienced more than three hours of soak (68° F–86° F) since the completion of the Federal Emission Test Procedure, or has experienced periods of storage outdoors, or in environments where soak temperature is not controlled to 68° F–86° F, the vehicle must be preconditioned by operation on a dynamometer through one cycle of the EPA Urban Dynamometer Driving Schedule, §86.115 of this chapter.

(2) In unusual circumstances where additional preconditioning is desired by the manufacturer, the provisions of paragraph (a)(3) of §86.132 of this chapter apply.

(f) *Highway fuel economy dynamometer procedure.* (1) The dynamometer procedure consists of two cycles of the Highway Fuel Economy Driving Schedule (§600.109 (b)) separated by 15 seconds of idle. The first cycle of the Highway Fuel Economy Driving Schedule is

driven to precondition the test vehicle and the second is driven for the fuel economy measurement.

(2) The provisions of paragraphs (b), (c), (e), (f), (g), and (h) of § 86.135 *Dynamometer procedure* of this chapter, apply for highway fuel economy testing.

(3) Only one exhaust sample and one background sample are collected and analyzed for hydrocarbons (except diesel hydrocarbons which are analyzed continuously), carbon monoxide, and carbon dioxide.

(4) The fuel economy measurement cycle of the test includes two seconds of idle indexed at the beginning of the second cycle and two seconds of idle indexed at the end of the second cycle.

(g) *Engine starting and restarting.* (1) If the engine is not running at the initiation of the highway fuel economy test (preconditioning cycle), the start-up procedure must be according to the manufacturer's recommended procedures.

(2) False starts and stalls during the preconditioning cycle must be treated as in paragraphs (d) and (e) of § 86.136 of this chapter. If the vehicle stalls during the measurement cycle of the highway fuel economy test, the test is voided, corrective action may be taken according to § 86.079-25 of this chapter, and the vehicle may be rescheduled for test. The person taking the corrective action shall report the action so that the test records for the vehicle contain a record of the action.

(h) *Dynamometer test run.* The following steps must be taken for each test:

(1) Place the drive wheels of the vehicle on the dynamometer. The vehicle may be driven onto the dynamometer.

(2) Open the vehicle engine compartment cover and position the cooling fan(s) required. Manufacturers may request the use of additional cooling fans for additional engine compartment or under-vehicle cooling and for controlling high tire or brake temperatures during dynamometer operation.

(3) Preparation of the CVS must be performed before the measurement highway driving cycle.

(4) Equipment preparation. The provisions of paragraphs (b) (3) through (5) inclusive of § 86.137 of this chapter apply for highway fuel economy test except that only one exhaust sample collection bag and one dilution air sample collection bag need be connected to the sample collection systems.

(5) Operate the vehicle over one Highway Fuel Economy Driving Schedule cycle according to the dynamometer driving schedule specified in paragraph (b) of § 600.109.

(6) When the vehicle reaches zero speed at the end of the preconditioning cycle, the driver has 17 seconds to prepare for the emission measurement cycle of the test. Reset and enable the roll revolution counter.

(7) Operate the vehicle over one Highway Fuel Economy Driving Schedule cycle according to the dynamometer driving schedule specified in paragraph (b) of § 600.109 while sampling the exhaust gas.

(8) Sampling must begin two seconds before beginning the first acceleration of the fuel economy measurement cycle and must end two seconds after the end of the deceleration to zero. At the end of the deceleration to zero speed, the roll or shaft revolutions must be recorded.

[42 FR 45657, Sept. 12, 1977, as amended at 43 FR 52929, Nov. 14, 1978; 59 FR 16309, Apr. 6, 1994]

§ 600.111–93 Test procedures.

(a) The test procedures to be followed for generation of the city fuel economy data are those prescribed in §§ 86.127 through 86.138 of this chapter, as applicable, except as provided for in paragraph (d) of this section. (The evaporative loss portion of the test procedure may be omitted unless specifically required by the Administrator.)

(b) The test procedures to be followed for generation of the highway fuel economy data are those specified in paragraphs (b) through (j) of this section.

(1) The Highway Fuel Economy Dynamometer Procedure consists of preconditioning highway driving sequence and a measured highway driving sequence.

(2) The highway fuel economy test is designated to simulate non-metropolitan driving with an average speed of 48.6 mph and a maximum speed of 60 mph. The cycle is 10.2 miles long with

0.2 stop per mile and consists of warmed-up vehicle operation on a chassis dynamometer through a specified driving cycle. A proportional part of the diluted exhaust emission is collected continuously for subsequent analysis of hydrocarbons, carbon monoxide, carbon dioxide using a constant volume (variable dilution) sampler. Diesel dilute exhaust is continuously analyzed for hydrocarbons using a heated sample line and analyzer. Methanol and formaldehyde samples are collected and individually analyzed for methanol-fueled vehicles (measurement of methanol and formaldehyde may be omitted for 1993 through 1994 model year methanol-fueled vehicles provided a HFID calibrated on methanol is used for measuring HC plus methanol).

(3) Except in cases of component malfunction or failure, all emission control systems installed on or incorporated in a new motor vehicle must be functioning during all procedures in this subpart. The Administrator may authorize maintenance to correct component malfunction or failure.

(c) *Transmission.* The provisions of §86.128 of this chapter apply for vehicle transmission operation during highway fuel economy testing under this subpart.

(d) *Road load power and test weight determination.* Section 86.129 of this chapter applies for determination of road load power and test weight for highway fuel economy testing. The test weight for the testing of a certification vehicle will be that test weight specified by the Administrator under the provisions of part 86 of this chapter. The test weight for a fuel economy data vehicle will be that test weight specified by the Administrator from the test weights covered by that vehicle configuration. The Administrator will base his selection of a test weight on the relative projected sales volumes of the various test weights within the vehicle configuration.

(e) *Vehicle preconditioning.* The Highway Fuel Economy Dynamometer Procedure is designed to be performed immediately following the Federal Emission Test Procedure, §§86.127 through 86.138 of this chapter. When conditions allow, the tests should be scheduled in this sequence. In the event the tests cannot be scheduled within three hours of the Federal Emission Test Procedure (including one hour hot soak evaporative loss test, if applicable) the vehicle should be preconditioned as in paragraph (e) (1) or (2) of this section, as applicable.

(1) If the vehicle has experienced more than three hours of soak (68 °F–86 °F) since the completion of the Federal Emission Test Procedure, or has experienced periods of storage outdoors, or in environments where soak temperature is not controlled to 68 °F–86 °F, the vehicle must be preconditioned by operation on a dynamometer through one cycle of the EPA Urban Dynamometer Driving Schedule, §86.115 of this chapter.

(2) In unusual circumstances where additional preconditioning is desired by the manufacturer, the provisions of §86.132(a)(3) of this chapter apply.

(f) *Highway fuel economy dynamometer procedure.* (1) The dynamometer procedure consists of two cycles of the Highway Fuel Economy Driving Schedule (§600.109(b)) separated by 15 seconds of idle. The first cycle of the Highway Fuel Economy Driving Schedule is driven to precondition the test vehicle and the second is driven for the fuel economy measurement.

(2) The provisions of paragraphs (b), (c), (e), (f), (g) and (h) of §86.135 *Dynamometer procedure* of this chapter, apply for highway fuel economy testing.

(3) Only one exhaust sample and one background sample are collected and analyzed for hydrocarbons (except diesel hydrocarbons which are analyzed continuously), carbon monoxide, and carbon dioxide. Methanol and formaldehyde samples (exhaust and dilution air) are collected and analyzed for methanol-fueled vehicles (measurement of methanol and formaldehyde may be omitted for 1993 through 1994 model year methanol-fueled vehicles provided a HFID calibrated on methanol is used for measuring HC plus methanol).

(4) The fuel economy measurement cycle of the test includes two seconds of idle indexed at the beginning of the second cycle and two seconds of idle indexed at the end of the second cycle.

(g) *Engine starting and restarting.* (1) If the engine is not running at the initiation of the highway fuel economy test (preconditioning cycle), the start-up procedure must be according to the manufacturer's recommended procedures.

(2) False starts and stalls during the preconditioning cycle must be treated as in 40 CFR 86.136 (d) and (e). If the vehicle stalls during the measurement cycle of the highway fuel economy test, the test is voided, corrective action may be taken according to 40 CFR 86.079–25 or 40 CFR 86.1834–01 as applicable, and the vehicle may be rescheduled for test. The person taking the corrective action shall report the action so that the test records for the vehicle contain a record of the action.

(h) *Dynamometer test run.* The following steps must be taken for each test:

(1) Place the drive wheels of the vehicle on the dynamometer. The vehicle may be driven onto the dynamometer.

(2) Open the vehicle engine compartment cover and position the cooling fans(s) required. Manufacturers may request the use of additional cooling fans for additional engine compartment or under-vehicle cooling and for controlling high tire or brake temperatures during dynamometer operation.

(3) Preparation of the CVS must be performed before the measurement highway driving cycle.

(4) Equipment preparation. The provisions of § 86.137(b)(3) through (6) of this chapter apply for highway fuel economy test except that only one exhaust sample collection bag and one dilution air sample collection bag need be connected to the sample collection systems.

(5) Operate the vehicle over one Highway Fuel Economy Driving Schedule cycle according to the dynamometer driving schedule specified in § 600.109(b).

(6) When the vehicle reaches zero speed at the end of the preconditioning cycle, the driver has 17 seconds to prepare for the emission measurement cycle of the test. Reset and enable the roll revolution counter.

(7) Operate the vehicle over one Highway Fuel Economy Driving Schedule cycle according to the dynamometer driving schedule specified in § 600.109(b) while sampling the exhaust gas.

(8) Sampling must begin two seconds before beginning the first acceleration of the fuel economy measurement cycle and must end two seconds after the end of the deceleration to zero. At the end of the deceleration to zero speed, the roll or shaft revolutions must be recorded.

(i) For methanol dual fuel automobiles, the procedures of § 600.111 (a) and (b) shall be performed for each of the required test fuels:

(1) Gasoline or diesel fuel as specified in § 600.107 (a) and (b); and

(2) Methanol fuel as specified in § 600.107 (c) and (d); and

(3) A mixture containing 50% gasoline or diesel and 50% methanol by volume, applicable during model years 1993 through 1995; or

(4) In lieu of testing using the mixture containing 50% gasoline or diesel and 50% methanol by volume, the manufacturer must provide a written statement attesting that the equal or superior energy efficiency is attained while using the 50% gasoline or diesel and 50% methanol mixture compared to using gasoline.

[59 FR 39652, Aug. 3, 1994, as amended at 64 FR 23975, May 4, 1999]

§ 600.112–78 Exhaust sample analysis.

The exhaust sample analysis must be performed according to § 86.140 of this chapter.

§ 600.113–78 Fuel economy calculations.

The calculations of vehicle fuel economy values require the weighted grams/mile values for HC, CO, and CO_2 for the city fuel economy test and the grams/mile values for HC, CO, and CO_2 for the highway fuel economy test. The city and highway fuel economy values must be calculated by the procedures of this section. A sample calculation appears in appendix II to this part.

(a) Calculate the weighted grams/mile values for the city fuel economy test for HC, CO, and CO_2 as specified in § 86.144 of this chapter.

(b)(1) Calculate the mass values for the highway fuel economy test for HC, CO, and CO_2 as specified in paragraph (b) of § 86.144 of this chapter.

(2) Calculate the grams/mile values for the highway test for HC, CO, and CO_2 by dividing the mass values obtained in (b)(1) by the actual distance traveled, measured in miles, as specified in paragraph (h) of §86.135 of this chapter.

(c) Calculate the city fuel economy and highway fuel economy from grams/mile values for HC, CO, and CO_2. The emission values (obtained per paragraph (a) or (b) as applicable) used in each calculation of this section shall be rounded in accordance with §86.079–26(a)(6)(ii). The CO_2 values (obtained per paragraph (a) or (b) of this section as applicable) used in each calculation in this section are rounded to the nearest gram/mile.

(d) For gasoline-fueled automobiles, calculate the fuel economy in miles per gallon of gasoline by dividing 2421 by the sum of three terms:

(1) 0.866 multiplied by HC (in grams/miles as obtained in paragraph (c)),

(2) 0.429 multiplied by CO (in grams/miles as obtained in paragraph (c), and

(3) 0.273 multiplied by CO_2 (in grams/mile as obtained in paragraph (c) of this section).

Round to quotient to the nearest 0.1 mile per gallon.

(e) For diesel powered automobiles, calculate the fuel economy in miles per gallon of diesel fuel by dividing 2778 by the sum of three terms:

(1) 0.866 multiplied by HC (in grams/mile as obtained in paragraph (c) of this section),

(2) 0.429 multiplied by CO (in grams/mile as obtained in paragraph (c)), and

(3) 0.273 multiplied by CO_2 (in grams/mile as obtained in paragraph (c)).

Round the quotient to the nearest 0.1 mile per gallon.

[42 FR 45657, Sept. 12, 1977, as amended at 43 FR 52929, Nov. 14, 1978]

§600.113–88 Fuel economy calculations.

The Administrator will use the calculation procedure set forth in this paragraph for all official EPA tests. For the 1988 model year, manufacturers may choose to use this procedure or use the calculation procedure described in §600.113–78. However, once a manufacturer uses this procedure, it must be used for all subsequent tests. This procedure must be used by manufacturers for 1989 and later model years. The calculations of the weighted fuel economy values require input of the weighted grams/mile values for HC, CO and CO_2 for both the city fuel economy test and the highway fuel economy test. Additionally, for tests of gasoline-fueled vehicles, the specific gravity, carbon weight fraction and net heating value of the test fuel must be determined. The city and highway fuel economy values shall be calculated as specified in this section. A sample appears in appendix II to this part.

(a) Calculate the weighted grams/mile values for the city fuel economy test for HC, CO, and CO_2 as specified in §86.144 of this chapter. For tests of gasoline-fueled vehicles, measure and record the test fuel's properties as specified in paragraph (c) of this section.

(b)(1) Calculate the mass values for the highway fuel economy test for HC, CO, and CO_2 as specified in paragraph (b) of §86.144 of this chapter. For tests of gasoline-fueled vehicles, measure and record the test fuel's properties as specified in paragraph (c) of this section.

(2) Calculate the grams/mile values for the highway fuel economy test for HC, CO, and CO_2 by dividing the mass values obtained in paragraph (b)(1) of this section, by the actual distance traveled, measured in miles, as specified in paragraph (h) of §86.135 of this chapter.

(c) Gasoline test fuel properties shall be determined by analysis of a fuel sample taken from the fuel supply. A sample shall be taken after each addition of fresh fuel to the fuel supply. Additionally, the fuel shall be resampled once a month to account for any fuel property changes during storage. Less frequent resampling may be permitted if EPA concludes, on the basis of manufacturer-supplied data, that the properties of test fuel in the manufacturer's storage facility will remain stable for a period longer than one month. The fuel samples shall be analyzed to determine the following fuel properties:

(1) Specific gravity per ASTM D 1298.

(2) Carbon weight fraction per ASTM D 3343.

(3) Net heating value (Btu/lb) per ASTM D 3338.

(d) Calculate the city fuel economy and highway fuel economy from the grams/mile values for HC, CO, CO_2 and, for test of gasoline-fueled vehicles, the test fuel's specific gravity, carbon weight fraction and net heating value. The emission values (obtained per paragraph (a) or (b) of this section, as applicable) used in each calculation of this section shall be rounded in accordance with § 86.084–26(a)(6)(iii). The CO_2 values (obtained per paragraph (a) or (b) of this section, as applicable) used in each calculation of this section shall be rounded to the nearest gram/mile. The specific gravity and the carbon weight fraction (obtained per paragraph (c) of this section) shall be recorded using three places to the right of the decimal point. The net heating value (obtained per paragraph (c) of this section) shall be recorded to the nearest whole Btu/lb. These numbers shall be rounded in accordance with the ''Rounding Off Method'' specified in ASTM E 29–67.

(e) For gasoline-fueled automobiles, the fuel economy in miles per gallon is to be calculated using the following equation:

$$mpg=(5174\times10^4\times CWF\times SG)/$$

$$[((CWF\times HC)+(0.429\times CO))+(0.273\times CO_2))\times((0.6\times SG\times NHV)+5471)]$$

Where:

HC=Grams/mile HC as obtained in paragraph (d) of this section.

CO=Grams/mile CO as obtained in paragraph (d) of this section.

CO_2=Grams/mile CO_2 as obtained in paragraph (d) of this section.

CWF=Carbon weight fraction of test fuel as obtained in paragraph (d) of this section.

NHV=Net heating value by mass of test fuel as obtained in paragraph (D) of this section.

SG=Specific gravity of test fuel as obtained in paragraph (d) of this section.

Round the calculated result to the nearest 0.1 miles per gallon.

(f) For diesel automobiles, calculate the fuel economy in miles per gallon of diesel fuel by dividing 2778 by the sum of three terms:

(1) 0.866 multiplied by HC (in grams/miles as obtained in paragraph (d) of this section),

(2) 0.429 multiplied by CO (in grams/mile as obtained in paragraph (d) of this section), and

(3) 0.273 multiplied by CO_2 (in grams/mile as obtained in paragraph (d) of this section).

Round the quotient to the nearest 0.1 mile per gallon.

[51 FR 37851, Oct. 24, 1986]

§ 600.113–93 Fuel economy calculations.

The Administrator will use the calculation procedure set forth in this paragraph for all official EPA testing of vehicles fueled with gasoline, diesel, methanol or natural gas fuel. The calculations of the weighted fuel economy values require input of the weighted grams/mile values for total hydrocarbons (HC), carbon monoxide (CO), and carbon dioxide (CO_2); and, additionally for methanol-fueled automobiles, methanol (CH_3 OH) and formaldehyde (HCHO); and additionally for natural gas-fueled vehicles non-methane hydrocarbons (NMHC) and methane (CH_4) for both the city fuel economy test and the highway fuel economy test. Additionally, the specific gravity, carbon weight fraction and net heating value of the test fuel must be determined. The city and highway fuel economy values shall be calculated as specified in this section. A sample appears in appendix II to this part.

(a) Calculate the weighted grams/mile values for the city fuel economy test for HC, CO and CO_2; and, additionally for methanol-fueled automobiles, CH_3 OH and HCHO; and additionally for natural gas-fueled automobiles NMHC and CH_4 as specified in § 86.144 of this chapter. Measure and record the test fuel's properties as specified in paragraph (c) of this section.

(b)(1) Calculate the mass values for the highway fuel economy test for HC, CO and CO_2, and where applicable CH_3 OH, HCHO, NMHC and CH_4 as specified in § 86.144(b) of this chapter. Measure and record the test fuel's properties as specified in paragraph (c) of this section.

(2) Calculate the grams/mile values for the highway fuel economy test for

HC, CO and CO_2, and where applicable CH_3 OH, HCHO, NMHC and CH_4 by dividing the mass values obtained in paragraph (b)(1) of this section, by the actual distance traveled, measured in miles, as specified in §86.135(h) of this chapter.

(c)(1) Gasoline test fuel properties shall be determined by analysis of a fuel sample taken from the fuel supply. A sample shall be taken after each addition of fresh fuel to the fuel supply. Additionally, the fuel shall be resampled once a month to account for any fuel property changes during storage. Less frequent resampling may be permitted if EPA concludes, on the basis of manufacturer-supplied data, that the properties of test fuel in the manufacturer's storage facility will remain stable for a period longer than one month. The fuel samples shall be analyzed to determine the following fuel properties:

(i) Specific gravity per ASTM D 1298 (Incorporated by reference as specified in §600.011–93).

(ii) Carbon weight fraction per ASTM D 3343 (Incorporated by reference as specified in §600.011–93).

(iii) Net heating value (Btu/lb) per ASTM D 3338 (Incorporated by reference as specified in §600.011–93).

(2) Methanol test fuel shall be analyzed to determine the following fuel properties:

(i) Specific gravity using either:

(A) ASTM D 1298 (incorporated by reference as specified in §600.011–93) for the blend or:

(B) ASTM D 1298 (incorporated by reference as specified in §600.011–93) for the gasoline fuel component and also for the methanol fuel component and combining as follows:

$SG=SG_g \times$volume fraction gasoline$+SG_m \times$volume fraction methanol.

(ii)(A) Carbon weight fraction using the following equation:

$CWF=CWF_g \times MF_g+0.375 \times MF_m$

Where:

CWF_g=Carbon weight fraction of gasoline portion of blend per ASTM D 3343 (incorporated by reference as specified in §600.011–93).

MF_g=Mass fraction gasoline=$(GxSG_g)/(GxSG_g+MxSG_m)$

MF_m=Mass fraction methanol=$(MxSG_m)/(GxSG_g+MxSG_m)$

Where:

G=Volume fraction gasoline

M=Volume fraction methanol

SG_g=Specific gravity of gasoline as measured by ASTM D 1298 (Incorporated by reference as specified in §600.011–93).

SG_m=Specific gravity of methanol as measured by ASTM D 1298 (Incorporated by reference as specified in §600.011–93).

(B) Upon the approval of the Administrator, other procedures to measure the carbon weight fraction of the fuel blend may be used if the manufacturer can show that the procedures are superior to or equally as accurate as those specified in this paragraph (c)(2)(ii).

(iii) Net heating value (BTU/lb) per ASTM D 240 (Incorporated by reference as specified in §600.011–93).

(3) Natural gas test fuel shall be analyzed to determine the following fuel properties:

(i) Fuel composition per ASTM D 1945–91, Standard Test Method for Analysis of Natural Gas By Gas Chromatography. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. Copies may be inspected at U.S. EPA, OAR, 401 M Street, SW., Washington, DC 20460, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(ii) Specific gravity (based on fuel composition per ASTM D 1945).

(iii) Carbon weight fraction based on the carbon contained only in the HC constituents of the fuel=weight of carbon in HC constituents divided by the total weight of fuel.

(iv) Carbon weight fraction of fuel=total weight of carbon in the fuel (i.e., includes carbon contained in HC and in CO_2) divided by total weight of fuel.

(d) Calculate the city fuel economy and highway fuel economy from the grams/mile values for total HC, CO, CO2 and, where applicable, CH3, OH, HCHO, NMHC and CH4 and, the test

fuel's specific gravity, carbon weight fraction, net heating value, and additionally for natural gas, the test fuel's composition. The emission values (obtained per paragraph (a) or (b) of this section, as applicable) used in each calculation of this section shall be rounded in accordance with 40 CFR 86.084–26(a)(6)(iii) or 40 CFR 86.1837–01 as applicable. The CO2 values (obtained per paragraph (a) or (b) of this section, as applicable) used in each calculation of this section shall be rounded to the nearest gram/mile. The specific gravity and the carbon weight fraction (obtained per paragraph (c) of this section) shall be recorded using three places to the right of the decimal point. The net heating value (obtained per paragraph (c) of this section) shall be recorded to the nearest whole Btu/lb.

(e)(1) For gasoline-fueled automobiles, the fuel economy in miles per gallon is to be calculated using the following equation:

$$mpg=(5174\times10^4\times CWF\times SG)/[((CWF\times HC)+(0.429\times CO)+(0.273\times CO_2))\times((0.6\times SG x NHV)+5471)]$$

Where:

HC=Grams/mile HC as obtained in paragraph (d) of this section.

CO=Grams/mile CO as obtained in paragraph (d) of this section.

CO_2=Grams/mile CO_2 as obtained in paragraph (d) of this section.

CWF=Carbon weight fraction of test fuel as obtained in paragraph (d) of this section.

NHV=Net heating value by mass of test fuel as obtained in paragraph (d) of this section.

SG=Specific gravity of test fuel as obtained in paragraph (d) of this section.

(2) Round the calculated result to the nearest 0.1 miles per gallon.

(f)(1) For diesel-fueled automobiles, calculate the fuel economy in miles per gallon of diesel fuel by dividing 2778 by the sum of three terms:

(i) 0.866 multiplied by HC (in grams/miles as obtained in paragraph (d) of this section);

(ii) 0.429 multiplied by CO (in grams/mile as obtained in paragraph (d) of this section); and

(iii) 0.273 multiplied by CO_2 (in grams/mile as obtained in paragraph (d) of this section).

(2) Round the quotient to the nearest 0.1 mile per gallon.

(g) For methanol-fueled automobiles and automobiles designed to operate on mixtures of gasoline and methanol, the fuel economy in miles per gallon is to be calculated using the following equation:

$$mpg=(CWF\times SG\times 3781.8)/((CWF_{exHC}\times HC)+(0.429\times CO)+(0.273\times CO_2)+(0.375\times CH_3OH)+(0.400\times HCHO))$$

Where:

CWF=Carbon weight fraction of the fuel as determined in paragraph (c)(2)(ii) of this section.

SG=Specific gravity of the fuel as determined in paragraph (c)(2)(i) of this section.

CWF_{exHC}=Carbon weight fraction of exhaust hydrocarbons= CWF_g as determined in (c)(2)(ii) of this section (for M100 fuel, CWF_{exHC}=0.866).

HC=Grams/mile HC as obtained in paragraph (d) of this section.

CO=Grams/mile CO as obtained in paragraph (d) of this section.

CO_2=Grams/mile CO_2 as obtained in paragraph (d) of this section.

CH_3OH=Grams/mile CH_3OH (methanol) as obtained in paragraph (d) of this section.

HCHO=Grams/mile HCHO (formaldehyde) as obtained in paragraph (d) of this section.

(h) For automobiles fueled with natural gas, the fuel economy in miles per gallon of natural gas is to be calculated using the following equation:

$$mpg_e=\frac{CWF_{HC/NG}D_{NG}\ 121.5}{(0.749)CH_4+(CWF_{NMHC})NMHC+(0.429)CO+(0.273)(CO_2-CO_{2NG})}$$

Where:

mpg_e=miles per equivalent gallon of natural gas.

$CWF_{HC/NG}$=carbon weight fraction based on the hydrocarbon constituents in the natural gas fuel as obtained in paragraph (d) of this section.

D_{NG}=density of the natural gas fuel [grams/ft³ at 68 °F (20 °C) and 760 mm Hg (101.3 kPa)] pressure as obtained in paragraph (d) of this section.

CH_4, NMHC, CO, and CO_2=weighted mass exhaust emissions [grams/mile] for methane, non-methane HC, carbon monoxide, and carbon dioxide as calculated in §600.113.

CWF_{NMHC}=carbon weight fraction of the non-methane HC constituents in the fuel as determined from the speciated fuel composition per paragraph (c)(2) of this section.

CO_{2NG}=grams of carbon dioxide in the natural gas fuel consumed per mile of travel.

$CO_{2NG}=FC_{NG}\ D_{NG}\ WF_{CO2}$

where:

$$FC_{NG} = \text{cubic feet of natural gas fuel consumed per mile}$$

$$= \frac{(0.749)CH_4 + (CWF_{NMHC})NMHC + (0.429)CO + (0.273)(CO_2)}{CWF_{NG}D_{NG}}$$

where:

CWF_{NG}=the carbon weight fraction of the natural gas fuel as calculated in paragraph (d) of this section.

WF_{CO2}=weight fraction carbon dioxide of the natural gas fuel calculated using the mole fractions and molecular weights of the natural gas fuel constituents per ASTM D 1945.

[59 FR 39654, Aug. 3, 1994; 59 FR 44795, Aug. 30, 1994, as amended at 59 FR 48537, Sept. 21, 1994; 64 FR 23975, May 4, 1999]

Subpart C—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—Procedures for Calculating Fuel Economy Values

§600.201–86 General applicability.

(a) The provisions of this subpart are applicable to 1986 and later model year gasoline-fueled and diesel automobiles.

[49 FR 13849, Apr. 6, 1984]

§600.201–93 General applicability.

The provisions of this subpart are applicable to 1993 and later model year gasoline-fueled, diesel-fueled, alcohol-fueled, natural gas-fueled, alcohol dual fuel, and natural gas dual fuel automobiles.

[59 FR 39655, Aug. 3, 1994]

§600.202–77 Definitions.

The definitions in §600.002 apply to this subpart.

§600.203–77 Abbreviations.

The abbreviations in §600.003 apply to this subpart.

§600.204–77 Section numbering, construction.

The section numbering system set forth in §600.004 applies to this subpart.

§600.205–77 Recordkeeping.

The recordkeeping requirements set forth in §600.005 apply to this subpart.

§600.206–86 Calculation and use of fuel economy values for gasoline-fueled, diesel, and electric vehicle configurations.

(a) Fuel economy values determined for each vehicle, and as approved in §600.008 (b) or (f), are used to determine city, highway, and combined fuel economy values for each vehicle configuration (as determined by the Administrator) for which data are available.

(1) If only one set of city and highway fuel economy values is accepted for a vehicle configuration, these values, rounded to the nearest tenth of a mile per gallon, comprise the city and highway fuel economy values for that configuration.

(2) If more than one city or highway fuel economy value is accepted for a vehicle configuration:

(i) All data shall be grouped according to the subconfiguration for which the data were generated using sales projections supplied in accordance with § 600.207(a)(3).

(ii) Within each group of data, all values are harmonically averaged and rounded to the nearest 0.0001 of a mile per gallon in order to determine city and highway fuel economy values for each subconfiguration at which the vehicle configuration was tested.

(iii) All city fuel economy values and all highway fuel economy values calculated in paragraph (a)(2)(ii) of this section are (separately for city and highway) averaged in proportion to the sales fraction (rounded to the nearest 0.0001) within the vehicle configuration (as provided to the Administrator by the manufacturer) of vehicles of each tested subconfiguration. The resultant values, rounded to the nearest 0.0001 mile per gallon, are the city and highway fuel economy values for the vehicle configuration.

(3) The combined fuel economy value for a vehicle configuration is calculated by harmonically averaging the city and highway fuel economy values, as determined in § 600.206(a) (1) or (2), weighted 0.55 and 0.45 respectively, and rounded to the nearest 0.0001 mile per gallon. A sample of this calculation appears in appendix II to this part.

(b) If only one equivalent petroleum-based fuel economy value exists for an electric configuration, that value, rounded to the nearest tenth of a mile per gallon, will comprise the petroleum-based fuel economy for that configuration.

(c) If more than one equivalent petroleum-based fuel economy value exists for an electric vehicle configuration, all values for that vehicle configuration are harmonically averaged and rounded to the nearest 0.0001 mile per gallon for that configuration.

[49 FR 13849, Apr. 6, 1984]

§ 600.206–93 Calculation and use of fuel economy values for gasoline-fueled, diesel-fueled, electric, alcohol-fueled, natural gas-fueled, alcohol dual fuel, and natural gas dual fuel vehicle configurations.

(a) Fuel economy values determined for each vehicle, and as approved in § 600.008 (b) or (f), are used to determine city, highway, and combined fuel economy values for each vehicle configuration (as determined by the Administrator) for which data are available.

(1) If only one set of city and highway fuel economy values is accepted for a vehicle configuration, these values, rounded to the nearest tenth of a mile per gallon, comprise the city and highway fuel economy values for that configuration.

(2) If more than one city or highway fuel economy value is accepted for a vehicle configuration:

(i) All data shall be grouped according to the subconfiguration for which the data were generated using sales projections supplied in accordance with § 600.207(a)(3).

(ii) Within each group of data, all values are harmonically averaged and rounded to the nearest 0.0001 of a mile per gallon in order to determine city and highway fuel economy values for each subconfiguration at which the vehicle configuration was tested.

(iii) All city fuel economy values and all highway fuel economy values calculated in paragraph (a)(2)(ii) of this section are (separately for city and highway) averaged in proportion to the sales fraction (rounded to the nearest 0.0001) within the vehicle configuration (as provided to the Administrator by the manufacturer) of vehicles of each tested subconfiguration. The resultant values, rounded to the nearest 0.0001 mile per gallon, are the city and highway fuel economy values for the vehicle configuration.

(3) The combined fuel economy value for a vehicle configuration is calculated by harmonically averaging the city and highway fuel economy values, as determined in § 600.206(a) (1) or (2), weighted 0.55 and 0.45 respectively, and

rounded to the nearest 0.0001 mile per gallon. A sample of this calculation appears in Appendix II to this part.

(4) For alcohol dual fuel automobiles and natural gas dual fuel automobiles the procedures of paragraphs (a) (1) through (3) of this section shall be used to calculate two separate sets of city, highway, and combined fuel economy values for each configuration.

(i) Calculate the city, highway, and combined fuel economy values from the tests performed using gasoline or diesel test fuel.

(ii) Calculate the city, highway, and combined fuel economy values from the tests performed using alcohol or natural gas test fuel.

(b) If only one equivalent petroleum-based fuel economy value exists for an electric configuration, that value, rounded to the nearest tenth of a mile per gallon, will compose the petroleum-based fuel economy for that configuration.

(c) If more than one equivalent petroleum-based fuel economy value exists for an electric vehicle configuration, all values for that vehicle configuration are harmonically averaged and rounded to the nearest 0.0001 mile per gallon for that configuration.

[59 FR 39655, Aug. 3, 1994]

EFFECTIVE DATE NOTE: At 59 FR 39655, Aug. 3, 1994, § 600.206–93 was added. This section contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

§ 600.207–86 Calculation of fuel economy values for a model type.

(a) Fuel economy values for a base level are calculated from vehicle configuration fuel economy values as determined in § 600.206(a) for low-altitude tests.

(1) If the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy from those intended for sale in other states, he will calculate fuel economy values for each base level for vehicles intended for sale in California and for each base level for vehicles intended for sale in the rest of the states.

(2) In order to highlight the fuel efficiency of certain designs otherwise included within a model type, a manufacturer may wish to subdivide a model type into one or more additional model types. This is accomplished by separating subconfigurations from an existing base level and placing them into a new base level. The new base level is identical to the existing base level except that it shall be considered, for the purposes of this paragraph, as containing a new basic engine. The manufacturer will be permitted to designate such new basic engines and base level(s) if:

(i) Each additional model type resulting from division of another model type has a unique car line name and that name appears on the label and on the vehicle bearing that label,

(ii) The subconfigurations included in the new base levels are not included in any other base level which differs only by basic engine (i.e., they are not included in the calculation of the original base level fuel economy values), and

(iii) All subconfigurations within the new base level are represented by test data in accordance with § 600.010(c)(ii).

(3) The manufacturer shall supply total model year sales projections for each car line/vehicle subconfiguration combination.

(i) Sales projections must be supplied separately for each car line-vehicle subconfiguration intended for sale in California and each car line/vehicle subconfiguration intended for sale in the rest of the states if required by the Administrator under paragraph (a)(1) of this section.

(ii) Manufacturers shall update sales projections at the time any model type value is calculated for a label value.

(iii) The requirements of this paragraph may be satisfied by providing an amended application for certification, as described in § 86.084–21.

(4) Vehicle configuration fuel economy values, as determined in § 600.206(a), are grouped according to base level.

(i) If only one vehicle configuration within a base level has been tested, the fuel economy value from that vehicle configuration constitutes the fuel economy for that base level.

(ii) If more than one vehicle configuration within a base level has been

tested, the vehicle configuration fuel economy values are harmonically averaged in proportion to the respective sales fraction (rounded to the nearest 0.0001) of each vehicle configuration and the resultant fuel economy value rounded to the nearest 0.0001 mile per gallon.

(5) The procedure specified in § 600.207(a) will be repeated for each base level, thus establishing city, highway, and combined fuel economy values for each base level.

(6) For the purposes of calculating a base level fuel economy value, if the only vehicle configuration(s) within the base level are vehicle configuration(s) which are intended for sale at high altitude, the Administrator may use fuel economy data from tests conducted on these vehicle configuration(s) at high altitude to calculate the fuel economy for the base level.

(b) For each model type, as determined by the Administrator, a city, highway, and combined fuel economy value will be calculated by using the projected sales and fuel economy values for each base level within the model type.

(1) If the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy from those intended for sale in other states, he will calculate fuel economy values for each model type for vehicles intended for sale in California and for each model type for vehicles intended for sale in the rest of the states.

(2) The sales fraction for each base level is calculated by dividing the projected sales of the base level within the model type by the projected sales of the model type and rounding the quotient to the nearest 0.0001.

(3) The city fuel economy values of the model type (calculated to the nearest 0.0001 mpg) are determined by dividing one by a sum of terms, each of which corresponds to a base level and which is a fraction determined by dividing:

(i) The sales fraction of a base level, by

(ii) The city fuel economy value for the respective base level.

(4) The procedure specified in paragraph (b)(3) of this section is repeated in an analogous manner to determine the highway and combined fuel economy values for the model type.

[49 FR 13849, Apr. 6, 1984]

§ 600.207–93 Calculation of fuel economy values for a model type.

(a) Fuel economy values for a base level are calculated from vehicle configuration fuel economy values as determined in § 600.206(a) for low-altitude tests.

(1) If the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy from those intended for sale in other states, he will calculate fuel economy values for each base level for vehicles intended for sale in California and for each base level for vehicles intended for sale in the rest of the states.

(2) In order to highlight the fuel efficiency of certain designs otherwise included within a model type, a manufacturer may wish to subdivide a model type into one or more additional model types. This is accomplished by separating subconfigurations from an existing base level and placing them into a new base level. The new base level is identical to the existing base level except that it shall be considered, for the purposes of this paragraph, as containing a new basic engine. The manufacturer will be permitted to designate such new basic engines and base level(s) if:

(i) Each additional model type resulting from division of another model type has a unique car line name and that name appears on the label and on the vehicle bearing that label;

(ii) The subconfigurations included in the new base levels are not included in any other base level which differs only by basic engine (i.e., they are not included in the calculation of the original base level fuel economy values); and

(iii) All subconfigurations within the new base level are represented by test data in accordance with § 600.010(c)(ii).

(3) The manufacturer shall supply total model year sales projections for each car line/vehicle subconfiguration combination.

(i) Sales projections must be supplied separately for each car line-vehicle subconfiguration intended for sale in California and each car line/vehicle subconfiguration intended for sale in the rest of the states if required by the Administrator under paragraph (a)(1) of this section.

(ii) Manufacturers shall update sales projections at the time any model type value is calculated for a label value.

(iii) The requirements of this paragraph (a)(3) may be satisfied by providing an amended application for certification, as described in 40 CFR 86.084–21 or 40 CFR 86.1844–01 as applicable.

(4) Vehicle configuration fuel economy values, as determined in §600.206(a), are grouped according to base level.

(i) If only one vehicle configuration within a base level has been tested, the fuel economy value from that vehicle configuration constitutes the fuel economy for that base level.

(ii) If more than one vehicle configuration within a base level has been tested, the vehicle configuration fuel economy values are harmonically averaged in proportion to the respective sales fraction (rounded to the nearest 0.0001) of each vehicle configuration and the resultant fuel economy value rounded to the nearest 0.0001 mile per gallon.

(5) The procedure specified in §600.207(a) will be repeated for each base level, thus establishing city, highway, and combined fuel economy values for each base level.

(6) For the purposes of calculating a base level fuel economy value, if the only vehicle configuration(s) within the base level are vehicle configuration(s) which are intended for sale at high altitude, the Administrator may use fuel economy data from tests conducted on these vehicle configuration(s) at high altitude to calculate the fuel economy for the base level.

(7) For alcohol dual fuel automobiles and natural gas dual fuel automobiles the procedures of paragraphs (a)(1) through (6) of this section shall be used to calculate two separate sets of city, highway, and combined fuel economy values for each base level.

(i) Calculate the city, highway, and combined fuel economy values from the tests performed using gasoline or diesel test fuel.

(ii) Calculate the city, highway, and combined fuel economy values from the tests performed using alcohol or natural gas test fuel.

(b) For each model type, as determined by the Administrator, a city, highway, and combined fuel economy value will be calculated by using the projected sales and fuel economy values for each base level within the model type.

(1) If the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy from those intended for sale in other states, he will calculate fuel economy values for each model type for vehicles intended for sale in California and for each model type for vehicles intended for sale in the rest of the states.

(2) The sales fraction for each base level is calculated by dividing the projected sales of the base level within the model type by the projected sales of the model type and rounding the quotient to the nearest 0.0001.

(3) The city fuel economy values of the model type (calculated to the nearest 0.0001 mpg) are determined by dividing one by a sum of terms, each of which corresponds to a base level and which is a fraction determined by dividing:

(i) The sales fraction of a base level; by

(ii) The city fuel economy value for the respective base level.

(4) The procedure specified in paragraph (b)(3) of this section is repeated in an analogous manner to determine the highway and combined fuel economy values for the model type.

(5) For alcohol dual fuel automobiles and natural gas dual fuel automobiles the procedures of paragraphs (b)(1) through (4) of this section shall be used to calculate two separate sets of city, highway, and combined fuel economy values for each model type.

(i) Calculate the city, highway, and combined fuel economy values from the tests performed using gasoline or diesel test fuel.

(ii) Calculate the city, highway, and combined fuel economy values from the tests performed using alcohol or natural gas test fuel.

[59 FR 39655, Aug. 3, 1994, as amended at 64 FR 23975, May 4, 1999]

EFFECTIVE DATE NOTE: At 59 FR 39655, Aug. 3, 1994, § 600.207–93 was added. This section contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

§ 600.208–77 Sample calculation.

An example of the calculation required in this subpart appears in appendix III.

[41 FR 49761, Nov. 10, 1976]

§ 600.209–85 Calculation of fuel economy values for labeling.

(a) For the purposes of calculating the city model type fuel economy value for labeling the manufacturer shall:

(1) *For general labels* multiply the city model type fuel economy value determined in § 600.207(b), by 0.90, rounding the product to the nearest whole mpg, or

(2) *For specific labels* multiply the city fuel economy value determined in § 600.206(a)(iii), by 0.90, rounding the product to the nearest whole mpg, and

(b) For the purposes of calculating the highway model type fuel economy value for labeling the manufacturer shall:

(1) *For general labels* multiply the highway model type fuel economy value determined in § 600.207(b) by 0.78, rounding the product to the nearest whole mpg, or

(2) *For specific labels* multiply the highway fuel economy value determined in § 600.206(a)(iii) by 0.78.

(c) If the resulting city value determined in paragraph (a) of this section exceeds the resulting highway value determined in paragraph (b) of this section, the city value will be set equal to the highway value.

(d)(1) The combined fuel economy for a model type, to be used in determining annual fuel costs under § 600.308(c), is determine (except as provided for in paragraph (d)(2) of this section), by harmonically averaging the unrounded city and highway values, determined in § 209 (a) and (b), weighted 0.55 and 0.45 respectively, and rounded to the nearest whole mpg. (An example of this calculation procedure appears in appendix II of this part).

(2) If the resulting city value determined in paragraph (a) of this section exceeds the resulting highway value determined in paragraph (b) of this section, the combined fuel economy will be set equal to the highway value, rounded to the nearest whole mpg.

[49 FR 13845, Apr. 6, 1984, as amended at 49 FR 48149, Dec. 10, 1984]

§ 600.209–95 Calculation of fuel economy values for labeling.

(a) For the purposes of calculating the city model type fuel economy value for labeling the manufacturer shall:

(1)(i) For general labels for gasoline-fueled, diesel-fueled, alcohol-fueled, and natural gas-fueled automobiles multiply the city model type fuel economy value determined in § 600.207 (b), by 0.90, rounding the product to the nearest whole mpg; or

(ii) For general labels for alcohol dual fuel and natural gas dual fuel automobiles:

(A) Multiply the city model type fuel economy calculated from the tests performed using gasoline or diesel test fuel as determined in § 600.207 (b)(5)(i) by 0.90, rounding the product to the nearest whole mpg; and

(B) Multiply the city model type fuel economy calculated from the tests performed using alcohol or natural gas test fuel as determined in § 600.207 (b)(5)(ii) by 0.90, rounding the product to the nearest whole mpg; or

(2)(i) For specific labels for gasoline-fueled, diesel-fueled, alcohol-fueled, and natural gas-fueled automobiles, multiply the city model type fuel economy value determined in § 600.206 (a)(2)(iii), by 0.90, rounding the product to the nearest whole mpg; or

(ii) For specific labels for alcohol dual fuel and natural gas dual fuel automobiles:

(A) Multiply the city model type fuel economy calculated from the tests performed using gasoline or diesel test fuel as determined in § 600.206 (a)(2)(iii) and (4)(i) by 0.90, rounding the product to the nearest whole mpg; and

(B) Multiply the city model type fuel economy calculated from the tests performed using alcohol or natural gas test fuel as determined in §600.206 (a)(2)(iii) and (4)(ii) by 0.90, rounding the product to the nearest whole mpg.

(b) For the purposes of calculating the highway model type fuel economy value for labeling the manufacturer shall:

(1)(i) For general labels for gasoline-fueled, diesel-fueled, alcohol-fueled, and natural gas-fueled automobiles, multiply the highway model type fuel economy value determined in §600.207 (b), by 0.78, rounding the product to the nearest whole mpg; or

(ii) For general labels for alcohol dual fuel and natural gas dual fuel automobiles:

(A) Multiply the highway model type fuel economy calculated from the tests performed using gasoline or diesel test fuel as determined in §600.207 (b)(5)(i) by 0.78, rounding the product to the nearest whole mpg; and

(B) Multiply the highway model type fuel economy calculated from the tests performed using alcohol or natural gas test fuel as determined in §600.207 (b)(5)(ii) by 0.78, rounding the product to the nearest whole mpg; or

(2)(i) For specific labels for gasoline-fueled, diesel-fueled, alcohol-fueled, and natural gas-fueled automobiles, multiply the highway model type fuel economy value determined in §600.206 (a)(iii), by 0.78, rounding the product to the nearest whole mpg; or

(ii) For specific labels for alcohol dual fuel and natural gas dual fuel automobiles:

(A) Multiply the highway model type fuel economy calculated from the tests performed using gasoline or diesel test fuel as determined in §600.206 (a)(2)(iii) and (4)(i) by 0.78, rounding the product to the nearest whole mpg; and

(B) Multiply the highway model type fuel economy calculated from the tests performed using alcohol or natural gas test fuel as determined in §600.206 (a)(2)(iii) and (4)(ii) by 0.78, rounding the product to the nearest whole mpg.

(c) If the resulting city value determined in paragraph (a) of this section exceeds the resulting highway value determined in paragraph (b) of this section, the city value will be set equal to the highway value.

(d) For the purposes of calculating the combined fuel economy for a model type, to be used in determining annual fuel costs under §600.307, the manufacturer shall (except as provided for in paragraph (d)(2) of this section):

(1)(i) For gasoline-fueled, diesel-fueled, alcohol-fueled, and natural gas-fueled automobiles, harmonically average the unrounded city and highway values, determined in paragraphs (a)(1)(i) and (b)(1)(i), or (a)(2)(i) and (b)(2)(i) of this section weighted 0.55 and 0.45 respectively, and round to the nearest whole mpg. (An example of this calculation procedure appears in appendix II of this part); or

(ii) For alcohol dual fuel and natural gas dual fuel automobiles, harmonically average the unrounded city and highway values from the tests performed using gasoline or diesel test fuel as determined in paragraphs (a)(1)(ii)(A) and (b)(1)(ii)(A), or (a)(2)(ii)(A) and (b)(2)(ii)(A) of this section.

(2) If the resulting city value determined in paragraph (a) of this section exceeds the resulting highway value determined in paragraph (b) of this section, the combined fuel economy will be set equal to the highway value, rounded to the nearest whole mpg.

[59 FR 39656, Aug. 3, 1994]

EFFECTIVE DATE NOTE: At 59 FR 39656, Aug. 3, 1994, §600.209–95 was added. This section contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

Subpart D—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—Labeling

SOURCE: 41 FR 49761, Nov. 10, 1976, unless otherwise noted.

§600.301–86 General applicability.

(a) The provisions of this subpart are applicable to 1986 and later model year gasoline-fueled and diesel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in

those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[49 FR 13850, Apr. 6, 1984]

§ 600.301–95 General applicability.

(a) The provisions of this subpart are applicable to 1995 and later model year gasoline-fueled, diesel-fueled, alcohol-fueled, natural gas-fueled, alcohol dual fuel, and natural gas dual fuel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[59 FR 39657, Aug. 3, 1994]

§ 600.302–77 Definitions.

The definitions in § 600.002 apply to this subpart.

§ 600.303–77 Abbreviations.

The abbreviations in § 600.003 apply to this subpart.

§ 600.304–77 Section numbering, construction.

The section numbering procedure set forth in § 600.004 applies to this subpart.

§ 600.305–77 Recordkeeping.

The recordkeeping requirements set forth in § 600.005 apply to this subpart.

§ 600.306–86 Labeling requirements.

(a) Prior to being offered for sale, each manufacturer shall affix or cause to be affixed and each dealer shall maintain or cause to be maintained on each automobile:

(1) A general fuel economy label (initial, or updated as required in § 600.314) as described in § 600.307(c) or:

(2) A specific label, as described in § 600.307(d), for those automobiles manufactured or imported before the date that occurs 15 days after general labels have been determined by the manufacturer.

(i) If the manufacturer elects to use a specific label within a model type (as defined in § 600.002(a)(19)), he shall also affix specific labels on all automobiles within this model type, except on those automobiles manufactured or imported before the date that labels are required to bear range values as required by paragraph (b) of this section, or determined by the Administrator, or as permitted under § 600.310.

(ii) If a manufacturer elects to change from general to specific labels or vice versa within a model type, the manufacturer shall, within five calendar days, initiate or discontinue as applicable, the use of specific labels on all vehicles within a model type at all facilities where labels are affixed.

(3) For any vehicle for which a specific label is requested which has a combined unadjusted fuel economy value at or below the minimum tax-free value, the following statement must appear on the specific label:

[Manufacturer's name] may have to pay IRS a Gas Guzzler Tax on this vehicle because of the low fuel economy.

(4)(i) At the time a general fuel economy value is determined for a model type, a manufacturer shall, except as provided in paragraph (a)(4)(ii) of this section, relabel, or cause to be relabeled, vehicles which:

(A) Have not been delivered to the ultimate purchaser, and

(B) Have a combined model type fuel economy value of 0.1 mpg or more below the lowest fuel economy value at which a Gas Guzzler Tax of $0 is to be assessed.

(ii) The manufacturer has the option of relabeling vehicles during the first five working days after the general label value is known.

(iii) For those vehicle model types which have been issued a specific label and are subsequently found to have tax liability, the manufacturer is responsible for the tax liability regardless of

whether the vehicle has been sold or not or whether the vehicle has been relabeled or not.

(b) The manufacturer shall include the current range of fuel economy of comparable automobiles (as described in §§ 600.311 and 600.314) in the label of each vehicle manufactured or imported more than 15 calendar days after the current range is made available by the Administrator.

(1) Automobiles manufactured before a date 16 or more calendar days after the initial label range is made available under § 600.311(c) may be labeled without a range of fuel economy of comparable automobiles. In place of the range of fuel economy of comparable automobiles, the label must contain a statement indicating that, as of the date of production or importation of this automobile, no range of fuel economy of comparable automobiles was available.

(2) Automobiles manufactured more than 15 calendar days after the initial or updated label range is made available under § 600.311 (c) or (d) will be labeled with the current range of fuel economy of comparable automobiles as approved for that label.

(c) The fuel economy label must be readily visible from the exterior of the automobile and remain affixed until the time the automobile is delivered to the ultimate consumer.

(1) The fuel economy label must be located on a side window. If the window is not large enough to contain both the Automobile Information Disclosure Act label and the fuel economy label, the manufacturer shall have the fuel economy label affixed on another window and as close as possible to the Automobile Information Disclosure Act label.

(2) The fuel economy label information may be included with the Automobile Information Disclosure Act label if the prominence and legibility of the fuel economy label is maintained. For this purpose, all fuel economy label information must be placed on a separate section in the label and may not be intermixed with the Automobile Information Disclosure Act label information, except for vehicle descriptions as noted in § 600.307–86(c).

(3) The manufacturer shall have the fuel economy label affixed in such a manner that appearance and legibility are maintained until after the vehicle is delivered to the ultimate consumer.

[49 FR 13850, Apr. 6, 1984, as amended at 49 FR 48149, Dec. 10, 1984; 52 FR 47877, Dec. 16, 1987]

§ 600.307–86 Fuel economy label format requirements.

(a)(1) Fuel economy labels must be:

(i) Rectangular in shape with a minimum height of 4.5 inches (114 mm) and a minimum length of 7.0 inches (178 mm) as depicted in Appendix VIII.

(ii) Printed in a color which contrasts with the paper color.

(iii) The label shall have a contrasting border at least 0.25 inches (6.4 mm) wide.

(2) The top 50 percent of the total fuel economy label area shall contain only the following information and in the same format depicted in the label format in Appendix VIII:

(i) The titles ''CITY MPG'' and ''HIGHWAY MPG'', centered over the applicable fuel economy estimates, in bold caps 10 points in size,

(ii) The city and highway fuel economy estimates calculated in accordance with § 600.209 (a) and (b),

(iii) The fuel pump logo, and

(iv) The phrase ''Compare this [vehicle/truck] to others in the FREE GAS MILEAGE GUIDE available at the dealer,'' shall be ''dropped-out'' of the top border as depicted in the sample label format in Appendix VIII. The phrase shall be in lower case in a medium condensed type except for the words ''FREE GAS MILEAGE GUIDE'' which shall be capitalized in a bold condensed type and no smaller than 12 points in size.

(3) The bottom 50 percent of the label shall contain the following information:

(i) The [vehicle/truck] description, as described in paragraph (c) or (d) of this section, when applicable.

(ii)(A) A statement: ''Actual mileage will vary with options, driving conditions, driving habits and [vehicle's/truck's] condition. Results reported to EPA indicate that the majority of [vehicle/truck] with these estimates will achieve between —— and —— mpg in

the city, and between —— and —— mpg on the highway.''

(B) The range values for this statement are to be calculated in accordance with the following:

(*1*) The lower range values shall be determined by multiplying the city and highway estimates by 0.85, then rounding to the next lower integer value.

(*2*) The upper range values shall be determined by multiplying the city and highway estimates by 1.15 and rounding to the next higher integer value.

(iii)(A) A statement: ''For comparison shopping, all [vehicles/trucks] classified as [insert category as determined in § 600.315] have been issued mileage ratings ranging from —— to —— mpg city and —— to —— mpg highway.'' (The range values are those determined in accordance with § 600.311.) Or, when applicable,

(B) A statement: ''A range of fuel economy values for other [vehicles/trucks] classified as [insert category as determined in § 600.315] is not available at this time.'' or by the statement: ''Not available.''

(iv)(A) The statement: ''Estimated Annual Fuel Cost:'' followed by the appropriate value calculated in accordance with paragraph (g) or (h) of this section.

(B) At the manufacturers option, it may include the fuel cost and the annual mileage interval used to determine the annual fuel cost.

(v) For the 1986 model year only, the statement: ''Under EPA's previous fuel economy program, used prior to the 1985 model, year this [vehicle/truck] would have received a single estimate of [insert unadjusted city value, rounded to the nearest whole mpg, as determined in § 600.207(b)] mpg.''

(vi)(A) The Gas Guzzler statement, when applicable (see paragraph (f) of this section), must be centered on a separate line between the bottom border and the Estimated Annual Fuel Cost statements. The words ''Gas Guzzler'' shall be highlighted.

(B) The type size shall be at least as large as the largest type size in the bottom 50 percent of the label.

(4) The maximum type size for the statements located in the lower 50 percent of the label shall not exceed 10 points in size.

(b)(1) The city mpg number shall be displayed on the left and the highway mpg number displayed on the right.

(2)(i) Except for the digit ''one,'' each mpg digit shall measure at least 0.35 inches by 0.6 inches (9×15 mm) in width and height respectively.

(ii) The digit ''one,'' shall measure at least 0.2 inches by 0.6 inches (5 x 15 mm) in width and height respectively.

(3) The strike width of each mpg digit shall be at least 0.075 inches (1.9 mm).

(4)(i) MPG digits not printed as a single character shall be made of a matrix of smaller characters. This matrix shall be at least four characters wide by five characters high (with the exception of three characters wide for the numerical character denoting ''one''.)

(ii) The small characters shall be made of successive overstrikes to form a reasonably dark and continuous line that approximates a single large character.

(5)(i) If manufacturer chooses to enlarge the label from that depicted in Appendix VIII the logo and the fuel economy label values, including the titles ''CITY MPG'' and ''HIGHWAY MPG'', must be increased in the same proportion.

(ii) The area bounded by the bottom of the fuel pump logo to the top of the border must continue to represent at least 50 percent of the available label area.

(c) The vehicle description on general labels will be as follows:

(1) Model year;

(2) Vehicle car line;

(3) Engine displacement, in cubic inches, cubic centi-meters, or liters whichever is consistent with the customary description of that engine;

(4) Number of engine cylinders or rotors;

(5) Additional engine description, if necessary to distinguish otherwise identical model types, as approved by the Administrator;

(6) Fuel metering system, including number of carburetor barrels, if applicable;

(7) Transmission class;

(8) Catalyst usage, if necessary to distinguish otherwise identical model types; and

(9) California emission control system usage, if applicable and if the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy from those intended for sale in other states.

(d) The vehicle description on specific labels will be as follows:

(1) The descriptions of paragraph (c) of this section;

(2) Interia weight class;

(3) Axle ratio; and

(4) Other engine or vehicle parameters, if approved by the Administrator.

(e) Where the fuel economy label is incorporated with the pricing information sticker, the applicable vehicle description, as set forth in paragraph (c) or (d) of this section, does not have to be repeated if the information is readily found on the Motor Vehicle Information and Cost Savings Act label.

(f)(1) For fuel economy labels of passenger automobile model types requiring a tax statement under §600.513, the phrase ''* * * Gas Guzzler Tax: $——— * * * ''.

(2) The tax value required by this paragraph shall be based on the combined fuel economy value for the model type calculated in accordance with §600.207 and rounded to the nearest 0.1 mpg. Adjustments in accordance with §600.209 will not be used to determine the tax liability.

(g) *General labels.* The annual fuel cost estimate for operating an automobile included in a model type shall be computed by using values for the fuel cost per gallon and average annual mileage, predetermined by the Administrator, and the fuel economy determined in §600.209(d).

(1) The annual fuel cost estimate for a model type is computed by multiplying:

(i) Fuel cost per gallon expressed in dollars to the nearest 0.05 dollar, by

(ii) Average annual mileage, expressed in miles per year to the nearest, 1,000 miles per year, by

(iii) The average, rounded to the nearest 0.0001 gallons per mile of the fuel economy value determined in §600.209(d) for a model type.

(2) The product computed in (g)(1) and rounded to the nearest dollar per year will comprise the annual fuel cost estimate that appears on general labels for the model type.

(h) *Specific labels.* The annual fuel cost estimate for operating an automobile included in a vehicle configuration will be computed by using values for the fuel cost per gallon and average annual mileage and the fuel economy determined in paragraph (h)(1)(iii) of this section.

(1) The annual fuel cost estimate for vehicle configuration is computed by multiplying:

(i) Fuel cost per gallon expressed in dollars to the nearest 0.05 dollar, by

(ii) Average annual mileage, expressed in miles per year to the nearest 1,000 miles per year, by

(iii) The inverse, rounded to the nearest 0.0001 gallons per mile, of the fuel economy value determined in §600.206(a)(2)(iii) for a vehicle configuration (city and highway values will be adjusted by the factors in §600.209 (a) and (b) and combined according to §600.209(d) before the calculation).

(2) The product computed in (h)(1) of this section and rounded to the nearest dollar per year will comprise the annual fuel cost estimate that appears on specific labels for that vehicle configuration.

[49 FR 13851, Apr. 6, 1984, as amended at 49 FR 48150, Dec. 10, 1984; 50 FR 10708, Mar. 15, 1985]

§600.307–95 Fuel economy label format requirements.

(a)(1) Fuel economy labels must be:

(i) Rectangular in shape with a minimum height of 4.5 inches (114 mm) and a minimum length of 7.0 inches (178 mm) as depicted in appendix VIII of this part.

(ii) Printed in a color which contrasts with the paper color.

(iii) The label shall have a contrasting border at least 0.25 inches (6.4 mm) wide.

(2) The top 50 percent of the total fuel economy label area shall contain only the following information and in the same format depicted in the label format in appendix VIII of this part:

(i) The titles ''CITY MPG'' and ''HIGHWAY MPG'', centered over the

applicable fuel economy estimates, in bold caps 10 points in size.

(ii)(A) For gasoline-fueled, diesel-fueled, alcohol-fueled, and natural gas-fueled automobiles, the city and highway fuel economy estimates calculated in accordance with § 600.209 (a) and (b).

(B) For alcohol dual fuel automobiles and natural gas dual fuel automobiles, the city and highway fuel economy estimates for operation on gasoline or diesel fuel as calculated in § 600.209 (a)(1)(ii)(A) or (2)(ii)(A) and § 600.209 (b)(1)(ii)(A) or (2)(ii)(A).

(iii) The fuel pump logo.

(iv) The phrase ''Compare this [vehicle/truck] to others in the FREE FUEL ECONOMY GUIDE available at the dealer,'' shall be ''dropped-out'' of the top border as depicted in the sample label format in appendix VIII of this part. The phase shall be in lower case in a medium condensed type except for the words ''FREE FUEL ECONOMY GUIDE'' which shall be capitalized in a bold condensed type and no smaller than 12 points in size.

(v)(A) For alcohol-fueled automobiles, the title ''(insert appropriate fuel (example ''METHANOL ''(M85))'')''. The title shall be positioned above the fuel pump logo and shall be in upper case in a bold condensed type and no smaller than 12 points in size.

(B) For natural gas-fueled automobiles, the title ''NATURAL GAS*''. The title shall be positioned above the fuel pump logo and shall be in uppercase in a bold condensed type and no smaller than 12 points in size.

(C) For alcohol dual fuel automobiles and natural gas dual fuel automobiles, the title ''DUAL FUEL*''. The title shall be positioned above the fuel pump logo and shall be in upper case in a bold condensed type and no smaller than 12 points in size.

(vi)(A) For alcohol-fueled automobiles, the title ''(insert appropriate fuel (example ''M85''))'' centered above the title ''CITY MPG'' and above the title ''HIGHWAY MPG'' in bold caps 10 points in size.

(B) For natural gas-fueled automobile, the title ''GASOLINE EQUIVALENT'' centered above the title ''CITY MPG'' and above the title ''HIGHWAY MPG'' in bold caps 10 points in size.

(C) For alcohol dual fuel automobiles and natural gas dual fuel automobiles, the title ''GASOLINE'' centered above the title ''CITY MPG'' and above the title ''HIGHWAY MPG'' in bold caps 10 points in size.

(3) The bottom 50 percent of the label shall contain the following information:

(i) The [vehicle/truck] description, as described in paragraph (c) or (d) of this section, when applicable.

(ii)(A) A statement: ''Actual mileage will vary with options, driving conditions, driving habits and [vehicle's/truck's] condition. Results reported to EPA indicate that the majority of [vehicles/trucks] with these estimates will achieve between _____ and _____ mpg in the city, and between _____ and _____ mpg on the highway.''

(B) The range values for this statement are to be calculated in accordance with the following:

(*1*) The lower range values shall be determined by multiplying the city and highway estimates by 0.85, then rounding to the next lower integer value.

(*2*) The upper range values shall be determined by multiplying the city and highway estimates by 1.15 and rounding to the next higher integer value.

(iii)(A) A statement: ''For comparison shopping, all [vehicles/trucks] classified as [insert category as determined in § 600.315] have been issued mileage ratings ranging from _____ to _____ mpg city and _____ to _____ mpg highway.'' (The range values are those determined in accordance with § 600.311.); or, when applicable,

(B) A statement: ''A range of fuel economy values for other [vehicles/trucks] classified as [insert category as determined in § 600.315] is not available at this time.'' or by the statement: ''Not available.''

(iv)(A) The statement: ''Estimated Annual Fuel Cost:'' followed by the appropriate value calculated in accordance with paragraph (g) or (h) of this section. The estimated annual fuel cost value for alcohol dual fuel automobiles and natural gas dual fuel vehicles to appear on the fuel economy label shall be that calculated based on operating the vehicle on gasoline or diesel fuel as determined in § 600.307(g) and (h). At the manufacturers option, the label

may also contain the estimated annual fuel cost value based on operating the vehicle on the alternative fuel.

(B) At the manufacturers option, it may include the fuel cost and the annual mileage interval used to determine the annual fuel cost.

(v) For the 1986 model year only, the statement: ''Under EPA's previous fuel economy program, used prior to the 1985 model year, this [vehicle/truck] would have received a single estimate of [insert unadjusted city value rounded to the nearest whole mpg, as determined in §600.207(b)] mpg.''

(vi)(A) The Gas Guzzler statement, when applicable (see paragraph (f) of this section), must be centered on a separate line between the bottom border and the Estimated Annual Fuel Cost statements. The words ''Gas Guzzler'' shall be highlighted.

(B) The type size shall be at least as large as the largest type size in the bottom 50 percent of the label.

(vii)(A) For alcohol-fueled, and natural gas-fueled automobiles, the statement: ''*This vehicle operates on [insert appropriate fuel(s)] only.'' shall appear above the bottom border. The phrase shall be in lower case in a medium condensed type except for the fuels listed which shall be capitalized in a bold condensed type no smaller than 12 points in size.

(B) For natural gas-fueled automobiles, the statements: ''All fuel economy values on this label pertain to gasoline equivalent fuel economy. To convert these values into units of miles per 100 cubic feet of natural gas, multiply by 0.823.'' At the manufacturers option, the statement ''To convert these values into units of miles per 100 cubic feet of natural gas, multiply by 0.823.'' may be replaced by the statement ''The fuel economy in units of miles per (insert units used in retail) is estimated to be (insert city fuel economy value) in the city, and (insert highway fuel economy value) on the highway.

(C) For alcohol dual fuel automobiles and natural gas dual fuel automobiles, the statement: ''This vehicle operates on [insert gasoline or diesel as appropriate] and [insert other fuel(s) as appropriate].'' shall appear above the bottom border. The phrase shall be in lower case in a medium condensed type except for the words ''gasoline'' or ''diesel'' (as appropriate) and the other fuels listed, which shall be capitalized in a bold condensed type no smaller than 12 points in size.

(viii) For alcohol dual fuel automobiles and natural gas dual fuel automobiles, the statement: ''All fuel economy values on this label pertain to [insert gasoline or diesel as appropriate] fuel usage. [insert other fuel(s) as appropriate] fuel(s) usage will yield different values. See the FREE FUEL ECONOMY GUIDE for information on [insert other fuel(s)] .'' At the manufacturers option, the above statements may be replaced by the statement ''The fuel economy while using [insert appropriate fuel (example ''M85)] is estimated to be [insert city fuel economy value and appropriate units] in the city and [insert highway fuel economy value and appropriate units] on the highway. See the FREE FUEL ECONOMY GUIDE for other information on [insert appropriate fuel].

(4) The maximum type size for the statements located in the lower 50 percent of the label shall not exceed 10 points in size, except as provided for in paragraphs (a)(3)(vii)(A) and (B) of this section.

(b)(1) The city mpg number shall be displayed on the left and the highway mpg number displayed on the right.

(2)(i) Except for the digit ''one,'' each mpg digit shall measure at least 0.35 inches by 0.6 inches (9x15mm) in width and height respectively.

(ii) The digit ''one,'' shall measure at least 0.2 inches by 0.6 inches (5x15mm) in width and height respectively.

(3) The strike width of each mpg digit shall be at least 0.075 inches (1.9mm).

(4)(i) MPG digits not printed as a single character shall be made of a matrix of smaller characters. This matrix shall be at least four characters wide by five characters high (with the exception of three characters wide for the numerical character denoting ''one''.)

(ii) The small characters shall be made of successive overstrikes to form a reasonably dark and continuous line that approximates a single large character.

(5)(i) If manufacturer chooses to enlarge the label from that depicted in

Appendix VIII of this part, the logo and the fuel economy label values, including the titles ''CITY MPG'' and ''HIGHWAY MPG,'' must be increased in the same proportion.

(ii) The area bounded by the bottom of the fuel pump logo to the top of the border must continue to represent at least 50 percent of the available label area.

(c) The vehicle description on general labels will be as follows:

(1) Model year;

(2) Vehicle car line;

(3) Engine displacement, in cubic inches, cubic centimeters, or liters whichever is consistent with the customary description of that engine;

(4) Number of engine cylinders or rotors;

(5) Additional engine description, if necessary to distinguish otherwise identical model types, as approved by the Administrator;

(6) Fuel metering system, including number of carburetor barrels, if applicable;

(7) Transmission class;

(8) Catalyst usage, if necessary to distinguish otherwise identical model types; and

(9) California emission control system usage, if applicable and if the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy from those intended for sale in other states.

(d) The vehicle description on specific labels will be as follows:

(1) The descriptions of paragraph (c) of this section;

(2) Inertia weight class;

(3) Axle ratio; and

(4) Other engine or vehicle parameters, if approved by the Administrator.

(e) Where the fuel economy label is incorporated with the pricing information sticker, the applicable vehicle description, as set forth in paragraph (c) or (d) of this section, does not have to be repeated if the information is readily found on the Motor Vehicle Information and Cost Savings Act label.

(f)(1) For fuel economy labels of passenger automobile model types requiring a tax statement under § 600.513, the phrase ''* * * Gas Guzzler Tax: $_____ * * *''.

(2) The tax value required by this paragraph shall be based on the combined fuel economy value for the model type calculated in accordance with § 600.207 and rounded to the nearest 0.1 mpg. Adjustments in accordance with § 600.209 will not be used to determine the tax liability.

(g) *General labels.* The annual fuel cost estimate for operating an automobile included in a model type shall be computed by using values for the fuel cost per volume (gallon for liquid fuels, cubic foot for gaseous fuels) and average annual mileage, predetermined by the Administrator, and the fuel economy determined in § 600.209(d).

(1) The annual fuel cost estimate for a model type is computed by multiplying:

(i) Fuel cost per gallon (natural gas must be expressed in units of cost per equivalent gallon, where 100 SCF = 0.823 equivalent gallons) expressed in dollars to the nearest 0.05 dollar; by

(ii) Average annual mileage, expressed in miles per year to the nearest 1,000 miles per year; by

(iii) The average, rounded to the nearest 0.0001 gallons per mile (natural gas must be expressed in units of gallons equivalent per mile where 100 SCF=0.823 equivalent gallons) of the fuel economy value determined in § 600.209(d) for a model type.

(2) The product computed in paragraph (g)(1) of this section and rounded to the nearest dollar per year will comprise the annual fuel cost estimate that appears on general labels for the model type.

(h) *Specific labels.* The annual fuel cost estimate for operating an automobile included in a vehicle configuration will be computed by using the values for the fuel cost per volume (gallon for liquid fuels, cubic feet for gaseous fuels) and average mileage and the fuel economy determined in paragraph (h)(1)(iii) of this section.

(1) The annual fuel cost estimate for vehicle configuration is computed by multiplying:

(i) Fuel cost per gallon (natural gas must be expressed in units of cost per equivalent gallon, where 100 SCF=0.823

equivalent gallons) expressed in dollars to the nearest 0.05 dollar; by

(ii) Average annual mileage, expressed in miles per year to the nearest 1,000 miles per year; by

(iii) The inverse, rounded to the nearest 0.0001 gallons per mile (natural gas must be expressed in units of gallon equivalent per mile, where 100 SCF=0.823 equivalent gallons) of the fuel economy value determined in §600.206(a)(2)(iii) for a vehicle configuration (city and highway values will be adjusted by the factors in §600.209(a) and (b) and combined according to §600.209(d) before the calculation).

(2) The product computed in paragraph (h)(1) of this section and rounded to the nearest dollar per year will comprise the annual fuel cost estimate that appears on specific labels for that vehicle configuration.

[59 FR 39657, Aug. 3, 1994]

EFFECTIVE DATE NOTE: At 59 FR 39657, Aug. 3, 1994, §600.307–95 was added. This section contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

§600.310–86 Labeling of high altitude vehicles.

(a) The Administrator may approve, at the request of the manufacturer, specific labels for high altitude vehicles according to §600.306.

(b) A high altitude vehicle may be labeled with a general or specific label by a manufacturer without regard to the type of label (general or specific) used at low altitude for that model type or vehicle configuration.

[49 FR 13852, Apr. 6, 1984]

§600.311–86 Range of fuel economy for comparable automobiles.

(a) The Administrator will determine the range of city and the range of highway fuel economy values for each class of comparable automobiles.

(b) The range of city fuel economy values within a class is the maximum city and the minimum city fuel economy value for all general labels as determined in §600.307(b)(3) regardless of manufacturer. The range of highway values is determined in the same manner.

(c) The initial range will be made available on a date specified by the Administrator that closely coincides to the date of the general model introduction for the industry.

(d) The ranges of comparable fuel economy values for a class of automobiles will be updated periodically and will be derived from the latest available label values reported to the Administrator for that class of automobiles.

(e) If the Administrator determines that automobiles intended for sale in California are likely to exhibit significant differences in fuel economy from those intended for sale in other states, he will compute separate ranges of fuel economy values for each class of automobiles for California and for the other states.

(f) For high altitude vehicles determined under §600.310, both general and specific labels will contain the range of comparable fuel economy computed in this section.

(g) The manufacturer shall include the appropriate range of fuel economy determined by the Administrator in paragraph (c) or (d) of this section, on each label affixed to an automobile within the class, except as provided in §600.306(b)(1).

[49 FR 13852, Apr. 6, 1984, as amended at 49 FR 28150, Dec. 10, 1984]

§600.312–86 Labeling, reporting, and recordkeeping; Administrator reviews.

(a)(1) The manufacturer shall determine label values (general and specific) using the procedures specified in subparts C and D of this part and submit the label values, and the data sufficient to calculate the label values, to the Administrator according to the timetable specified in §600.313.

(2) Except under paragraph (a)(4) of this section, the manufacturer is not required to obtain Administrator approval of label values prior to the introduction of vehicles for sale.

(3) The label values that the manufacturer calculates and submits under paragraph (a)(1) of this section shall

constitute the EPA fuel economy estimates unless the Administrator determines that they are not calculated according to the procedures specified in subparts C and D of this part.

(4) If required by the Administrator, the manufacturer shall obtain Administrator approval of label values prior to affixing labels to vehicles.

(5)(i) If at any time during the model year, any label values are determined not to be calculated according to the procedures specified in subparts C and D of this part, the Administrator shall notify the manufacturer in writing.

(ii) If the Administrator has sufficient information to enable calculation of the correct label values, this notification shall specify the correct label values which constitute the EPA Fuel Economy Estimates.

(iii) If additional information is required, the Administrator shall request such additional information and a recalculation of the label value by the manufacturer.

(6) If the Administrator determines revised label values under paragraph (a)(5) of this section are lower than the label values calculated by the manufacturer, the manufacturer shall affix the revised labels to all affected new vehicles which are unsold beginning no later than 15 calendar days after the date of notification by the Administrator.

(b)(1) The manufacturer is responsible for affixing vehicle labels that meet the format and content requirements of this subpart.

(2) The manufacturer shall retain for examination, at the Administrator's discretion, typical label formats representing all information required on the manufacturer's fuel economy labels. The information shall include the text of all required and voluntary information as well as the size and color of print and paper, spacing, and location of all printed information. Where the fuel economy label is incorporated with the Automobile Information Disclosure Act label, the above requirements pertain to those sections of the label concerning fuel economy labeling information.

(3) If the Administrator determines upon examination of record that the label format or content do not meet the requirements of this subpart, the Administrator may:

(i) Require the manufacturer to make specific changes in subsequent labels, and

(ii) Require such changes to be implemented on a reasonable timetable, but no sooner than 15 days from the date of notification to the manufacturer.

[49 FR 13852, Apr. 6, 1984]

§ 600.313–01 Timetable for data and information submittal and review.

(a) A manufacturer shall submit to the Administrator fuel economy label values and sufficient information to determine fuel economy label values within the following time constraints (except for manufacturers designated under § 600.312(a)(4) who shall submit the information no later than thirty calendar days prior to the date the model type [vehicle] is initially offered for sale.

(1) For initial general label values, no later than five working days before the date that the model type is initially offered for sale;

(2) For specific label values, no later than five working days before any vehicles are offered for sale;

(3) For model types having label values updated because of running changes (as required under § 600.314(b)), the submission must be made at least five working days before the date of implementation of the running change.

(b) A manufacturer may not proceed with any label calculation until the data from each vehicle used in such calculation satisfies the requirements of § 600.008, except as allowed under the provisions of § 600.314–01(e) and approved by the Administrator.

(c) If the Administrator has waived any testing in paragraph (b) of this section and subsequently finds that the decision to waive testing was based on an incorrect data submission or that a fuel economy offset exists (based on subsequent testing of that manufacturer's product line), the Administrator may require confirmation of the data generated by any such waived vehicle.

[64 FR 23975, May 4, 1999□]

§600.313–86 Timetable for data and information submittal and review.

(a) A manufacturer shall submit to the Administrator fuel economy label values and sufficient information to determine fuel economy label values within the following time constraints (except for manufacturers designated under §600.312(a)(4) who shall submit the information no later than thirty calendar days prior to the date the model type [vehicle] is initially offered for sale.

(1) For initial general label values, no later than five working days before the date that the model type is initially offered for sale;

(2) For specific label values, no later than five working days before any vehicles are offered for sale.

(3) For model types having label values updated because of running changes (as required under §600.314(b)), the submission must be made at least five working days before the date of implementation of the running change.

(b) A manufacturer may not proceed with any label calculation until the data from each vehicle used in such calculation satisfies the requirements of §600.008.

(c) If the Administrator has waived any testing in paragraph (b) of this section and subsequently finds that the decision to waive testing was based on an incorrect data submission or that a fuel economy offset exists (based on subsequent testing of that manufacturer's product line), the Administrator may require confirmation of the data generated by any such waived vehicle.

[49 FR 13853, Apr. 6, 1984]

§600.314–01 Updating label values, annual fuel cost, Gas Guzzler Tax, and range of fuel economies for comparable automobiles.

(a) The label values established in §600.312 shall remain in effect for the model year unless updated in accordance with paragraph (b) of this section.

(b)(1) The manufacturer shall recalculate the model type fuel economy values for any model type containing base levels affected by running changes specified in §600.507(a).

(2) For separate model types created in §600.207(a)(2), the manufacturer shall recalculate the model type values for any additions or deletions of subconfigurations to the model type. Minimum data requirements specified in §600.010(c)(1)(ii) shall be met prior to recalculation.

(3) Label value recalculations shall be performed to read as follows:

(i) The manufacturer shall use updated total model year projected sales for label value recalculations.

(ii) All model year data approved by the Administrator at the time of the recalculation for that model type shall be included in the recalculation.

(iii) Using the additional data under paragraph (b) of this section, the manufacturer shall calculate new model type city and highway values in accordance with §§600.207 and 600.209 except that the values shall be rounded to the nearest 0.1 mpg.

(iv) The existing label values, calculated in accordance with §§600.207 and 600.209, shall be rounded to the nearest 0.1 mpg.

(4)(i) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is less than the respective city or highway value in paragraph (b)(3)(iv) of this section by 1.0 mpg or more, the manufacturer shall affix labels with the recalculated model type values (rounded to whole mpg's) to all new vehicles of that model type beginning on the day of implementation of the running change.

(ii) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is higher than the respective city or highway value in paragraph (b)(3)(iv) of this section by 1.0 mpg or more, then the manufacturer has the option to use the recalculated values for labeling the entire model type beginning on the day of implementation of the running change.

(c) For fuel economy labels updated using recalculated fuel economy values determined in accordance with paragraph (b) of this section, the manufacturer shall concurrently update all other label information (e.g., the annual fuel cost, range of comparable vehicles and the applicability of the Gas Guzzler Tax as needed).

(d) The Administrator shall periodically update the range of fuel economies of comparable automobiles based

upon all label data supplied to the Administrator.

(e) The manufacturer may request permission from the Administrator to calculate and use label values based on test data from vehicles which have not completed the Administrator ordered confirmatory testing required under the provisions of § 600.008–00(c). If the Administrator approves such a calculation the following procedures shall be used to determine if relabeling is required after the confirmatory testing is completed.

(1) The Administrator ordered confirmatory testing shall be completed as quickly as possible.

(2) Using the additional data under paragraph (e)(1) of this section, the manufacturer shall calculate new model type city and highway values in accordance with §§ 600.207 and 600.209 except that the values shall be rounded to the nearest 0.1 mpg.

(3) The existing label values, calculated in accordance with §§ 600.207 and 600.209, shall be rounded to the nearest 0.1 mpg.

(4) Relabeling. (i) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is less than the respective city or highway value in paragraph (b)(3)(iv) of this section by 0.5 mpg or more, the manufacturer shall affix labels with the recalculated model type values (rounded to whole mpg's) to all new vehicles of that model type beginning 15 days after the completion of the confirmatory test.

(ii) If both the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is less than the respective city or highway value in paragraph (b)(3)(iv) of this section by 0.1 mpg or more and the recalculated gas guzzler tax rate determined under the provisions of § 600.513–91 is larger, the manufacturer shall affix labels with the recalculated model type values (rounded to whole mpg's) and gas guzzler tax statement and rates to all new vehicles of that model type beginning 15 days after the completion of the confirmatory test.

(5) For fuel economy labels updated using recalculated fuel economy values determined in accordance with paragraph (e)(4) of this section, the manufacturer shall concurrently update all other label information (e.g., the annual fuel cost, range of comparable vehicles and the applicability of the Gas Guzzler Tax if required by Department of Treasury regulations).

[64 FR 23975, May 4, 1999]

§ 600.314–86 Updating label values, annual fuel cost, Gas Guzzler Tax, and range of fuel economies for comparable automobiles.

(a) The label values established in § 600.312 shall remain in effect for the model year unless updated in accordance with paragraph (b) of this section.

(b)(1) The manufacturer shall recalculate the model type fuel economy values for any model type containing base levels affected by running changes specified in §600.507(a).

(2) For separate model types created in § 600.207(a)(2), the manufacturer shall recalculate the model type values for any additions or deletions of subconfigurations to the model type. Minimum data requirements specified in §600.010(c)(1)(ii) shall be met prior to recalculation.

(3) Label value recalculations shall be performed as follows:

(i) The manufacturer shall use updated total model year projected sales for label value recalculations.

(ii) All model year data approved by the Administrator at the time of the recalculation for that model type shall be included in the recalculation.

(iii) Using the additional data under paragraph (b) of this section, the manufacturer shall calculate new model type city and highway values in accordance with §§ 600.207 and 600.209 except that the values shall be rounded to the nearest 0.1 mpg.

(iv) The existing label values, calculated in accordance with §§ 600.207 and 600.209, shall be rounded to the nearest 0.1 mpg.

(4)(i) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is less than the respective city or highway value in paragraph (b)(3)(iv) of this section by 1.0 mpg or more, the manufacturer shall affix labels with the recalculated model type values (rounded to whole mpg's) to all new vehicles of that

model type beginning on the day of implementation of the running change.

(ii) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is higher than the respective city or highway value in paragraph (b)(3)(iv) of this section by 1.0 mpg or more, then the manufacturer has the option to use the recalculated values for labeling the entire model type beginning on the day of implementation of the running change.

(c) For fuel economy labels updated using recalculated fuel economy values determined in accordance with paragraph (b) of this section, the manufacturer shall concurrently update all other label information (e.g., the annual fuel cost, range of comparable vehicles and the applicability of the Gas Guzzler Tax if required by Department of Treasury regulations).

(d) The Administrator shall periodically update the range of fuel economies of comparable automobiles based upon all label data supplied to the Administrator.

[49 FR 13853, Apr. 6, 1984]

§ 600.315–82 Classes of comparable automobiles.

(a) The Secretary will classify automobiles as passenger automobiles or light trucks (nonpassenger automobiles) in accordance with 49 CFR part 523.

(1) The Administrator will classify passenger automobiles by car line into one of the following classes based on interior volume index or seating capacity except for those passenger automobiles which the Administrator determines are most appropriately classed as special purpose vehicles as provided in paragraph (a)(3) of this section:

(i) *Two seaters.* A car line shall be classed as ''Two Seater'' if the majority of the vehicles in that car line have no more than two designated seating positions as such term is defined in the regulations of the National Highway Traffic Safety Administration, Department of Transportation (DOT), 49 CFR 571.3.

(ii) *Minicompact cars.* Interior volume index less than 85 cubic feet.

(iii) *Subcompact cars.* Interior volume index greater than or equal to 85 cubic feet but less than 100 cubic feet.

(iv) *Compact cars.* Interior volume index greater than or equal to 100 cubic feet but less than 110 cubic feet.

(v) *Midsize cars.* Interior volume index greater than or equal to 110 cubic feet but less than 120 cubic feet.

(vi) *Large cars.* Interior volume index greater than or equal to 120 cubic feet.

(vii) *Small station wagons.* Station wagons with interior volume index less than 130 cubic feet.

(viii) *Midsize station wagons.* Station wagons with interior volume index greater than or equal to 130 cubic feet but less than 160 cubic feet.

(ix) *Large station wagons.* Station wagons with interior volume index greater than or equal to 160 cubic feet.

(2) The Administrator will classify nonpassenger automobiles into the following categories: small pickup trucks, standard pickup trucks, vans, and special purpose vehicles. Pickup trucks will be separated by car line on the basis of gross vehicle weight rating (GVWR). For pickup truck car lines with more than one GVWR, the GVWR of the pickup truck car line is the arithmetic average of all distinct GVWR's less than or equal to 8,500 pounds available for that car line.

(i) *Small pickup trucks.* Pickup trucks with a GVWR less than 4,500 pounds.

(ii) *Standard pickup trucks.* Pickup trucks with a GVWR of 4,500 pounds up to and including 8,500 pounds.

(iii) *Vans.*

(3) All automobiles with GVWR less than or equal to 8,500 pounds which possess special features and which the Administrator determines are more appropriately classified separately from typical automobiles or which do not meet the requirements of paragraphs (a) (1) and (2) of this section will be classified as *special purpose vehicles.*

(4) Once a certain car line is classified by the Administrator, the classification will remain in effect for the model year.

(b) *Interior volume index-passenger automobiles.* (1) The interior volume index shall be calculated for each car line which is not a ''two seater'' car line, in cubic feet rounded to the nearest 0.1 cubic foot. For car lines with

more than one body style, the interior volume index for the car line is the arithmetic average of the interior volume indexes of each body style in the car line.

(2) For all body styles except station wagons and hatchbacks with more than one seat (e.g., with a second or third seat) equipped with seatbelts as required by DOT safety regulations, interior volume index is the sum, rounded to the nearest 0.1 cubic feet, of the front seat volume, the rear seat volume, if applicable, and the luggage capacity.

(3) For all station wagons and hatchbacks with more than one seat (e.g., with a second or third seat) equipped with seatbelts as required by DOT safety regulations, interior volume index is the sum, rounded to the nearest 0.1 cubic feet, of the front seat volume, the rear seat volume, and the cargo volume index.

(c) All interior and cargo dimensions are measured in inches to the nearest 0.1 inch. All dimensions and volumes shall be determined from the base vehicles of each body style in each car line, and do not include optional equipment. The dimensions H61, W3, W5, L34, H63, W4, W6, L51, H201, L205, L210, L211, H198, and volume V1 are to be determined in accordance with the procedures outlined in Motor Vehicle Dimensions SAE J1100a (Report of Human Factors Engineering Committee, Society of Automotive Engineers, approved September 1973 and last revised September 1975) except as noted herein:

(1) *SAE J1100a(2.3). Cargo dimensions.* All dimensions measured with the front seat positioned the same as for the interior dimensions and the second seat, for the station wagons and hatchbacks, in the upright position. All head restraints shall be in the stowed position and considered part of the seat.

(2) *SAE J1100a(8)—Luggage capacity.* Total of columns of individual pieces of standard luggage set plus H boxes stowed in the luggage compartment in accordance with the procedure described in 8.2. For passenger automobiles with no rear seat or with two rear seats with no rear seatbelts, the luggage compartment shall include the area to the rear of the front seat, with the rear seat (if applicable) folded, to the height of a horizontal plane tangent to the top of the front seatback.

(3) *SAE J1100a(7)—Cargo dimensions.* (i) *L210—Cargo length at second seatback height-hatchback.* The minimum horizontal dimension from the ''X'' plane tangent to the rearmost surface of the second seatback to the inside limiting interference of the hatchback door on the zero ''Y'' plane.

(ii) *L211—Cargo length at floor-second-hatchback.* The minimum horizontal dimensions at floor level from the rear of the second seatback to the normal limiting interference of the hatchback door on the vehicle zero ''Y'' plane.

(iii) *H198—Second seatback to load floor height.* The dimension measured vertically from the horizontal tangent to the top of the second seatback to the undepressed floor covering.

(d) The front seat volume is calculated in cubic feet by dividing 1,728 into the product of three terms listed below and rounding the quotient to the nearest 0.001 cubic feet:

(1) *H61—Effective head room-front.* (In inches, obtained according to paragraph (c) of this section),

(2)(i) *(W3+W5+5)/2—Average of shoulder and hip room-front, if hip room is more than 5 inches less than shoulder room.* (In inches, W3 and W5 are obtained according to paragraph (c) of this section), or

(ii) *W3—Shoulder room-front, if hip room is not more than 5 inches less than shoulder room.* (In inches, W3 is obtained according to paragraph (c) of this section), and

(3) *L34—Maximum effective leg room-accelerator.* (In inches, obtained according to paragraph (c) of this section.) Round the quotient to the nearest 0.001 cubic feet.

(e) The rear seat volume is calculated in cubic feet, for vehicles within a rear seat equipped with rear seat belts (as required by DOT), by dividing 1,728 into the product of three terms listed below and rounding the quotient to the nearest 0.001 cubic feet:

(1) *H63—Effective head room-second.* (Inches obtained according to paragraph (c) of this section),

(2)(i) *(W4+W6+5)/2—Average of shoulder and hip room-second, if hip room is*

more than 5 inches less than shoulder room. (In inches, W4 and W6 are obtained according to paragraph (c) of this section), or

(ii) *W4—Shoulder room-second, if hip room is not more than 5 inches less than shoulder room.* (In inches, W3 is obtained according to paragraph (c) of this section), and

(3) *L51—Minimum effective leg room-second.* (In inches obtained according to paragraph (c) of this section.)

(f) The luggage capacity is V1, the usable luggage capacity obtained according to paragraph (c) of this section. For passenger automobiles with no rear seat or with a rear seat but no rear seat belts, the area to the rear of the front seat shall be included in the determination of V1, usable luggage capacity, as outlined in paragraph (c) of this section.

(g) *Cargo volume index.* (1) For station wagons the cargo volume index V2 is calculated, in cubic feet, by dividing 1,728 into the product of three terms and rounding the quotient to the nearest 0.001 cubic feet:

(i) *W4—Shoulder room-second.* (In inches obtained according to paragraph (c) of this section.)

(ii) *H201—Cargo height.* (In inches obtained according to paragraph (c) of this section.)

(iii) *L205—Cargo length at belt-second.* (In inches obtained according to paragraph (c) of this section.)

(2) For hatchbacks, the cargo volume index V3 is calculated, in cubic feet, by dividing 1,728 into the product of three terms:

(i) Average cargo length, which is the arithmetic average of:

(A) *L210—Cargo length at second seatback height-hatchback.* (In inches obtained according to paragraph (c) of this section);

(B) *L211—Cargo length at floor-second-hatchback.* (In inches obtained according to paragraph (c) of this section);

(ii) *W4—Shoulder room-second.* (In inches obtained according to paragraph (c) of this section);

(iii) *H198—Second seatback to load floor height.* (In inches obtained according to paragraph (c) of this section.) Round the quotient to the nearest 0.001 cubic foot.

(h) The following data must be submitted to the Administrator no later than the time of a general label request. Data shall be included for each body style in the car line covered by that general label.

(1) For all passenger automobiles:

(i) Dimensions H61, W3, L34 determined in accordance with paragraph (c) of this section.

(ii) Front seat volume determined in accordance with paragraph (d) of this section.

(iii) Dimensions H63, W4, L51 (if applicable) determined in accordance with paragraph (c) of this section.

(iv) Rear seat volume (if applicable) determined in accordance with paragraph (e) of this section.

(v) The interior volume index determined in accordance with paragraph (b) of this section for:

(A) Each body style, and

(B) The car line.

(vi) The class of the car line as determined in paragraph (a) of this section.

(2) For all passenger automobiles except station wagons and hatchbacks with more than one seat (e.g., with a second or third seat) equipped with seat belts as required by DOT safety regulations:

(i) The quantity and letter designation of the pieces of the standard luggage set installed in the vehicle in the determination of usable luggage capacity V1, and

(ii) The usable luggage capacity V1, determined in accordance with paragraph (f) of this section.

(3) For station wagons with more than one seat (e.g., with a second or third seat) equipped with seat belts as required by DOT safety regulations:

(i) The dimensions H201 and L205 determined in accordance with paragraph (c) of this section, and

(ii) The cargo volume index V2 determined in accordance with paragraph (g)(1) of this section.

(4) For hatchbacks with more than one seat (e.g., with a second or third seat) equipped with seat belts as required by DOT safety regulations:

(i) The dimensions L210, L211, and H198 determined in accordance with paragraph (c) of this section.

(ii) The cargo volume index V3 determined in accordance with paragraph (g)(2) of this section.

(5) For pickup trucks:

(i) All GVWR's of less than or equal to 8,500 pounds available in the car line.

(ii) The arithmetic average GVWR for the car line.

[47 FR 49814, Nov. 2, 1982]

§ 600.316–78 Multistage manufacture.

Where more than one person is the manufacturer of a vehicle, the final stage vehicle manufacturer (as defined in 49 CFR 549.3) is treated as the manufacturer for purposes of compliance with this subpart.

[42 FR 45672, Sept. 12, 1977]

Subpart E—Fuel Economy Regulations for 1977 and Later Model Year Automobiles—Dealer Availability of Fuel Economy Information

SOURCE: 41 FR 49764, Nov. 10, 1976, unless otherwise noted.

§ 600.401–77 General applicability.

The provisions of this subpart are applicable to 1977 and later model year automobiles.

§ 600.402–77 Definitions.

The definitions in § 600.002 apply to this subpart.

§ 600.403–77 Abbreviations.

The abbreviations in § 600.003 apply to this subpart.

§ 600.404–77 Section numbering, construction.

The section numbering procedure specified in § 600.004 applies to this subpart.

§ 600.405–77 Dealer requirements.

(a) Each dealer shall prominently display at each location where new automobiles are offered for sale booklets containing the information specified in § 600.407. The dealer shall provide these booklets without charge and in sufficient quantity to be available for retention by each prospective purchaser upon his request. The dealer will be expected to make these booklets available as soon as they are received by the dealer, but in no case later than 15 working days after notification is given of booklet availability.

(b) The dealer shall display these booklets in the same manner and in each location used to display brochures describing the automobiles offered for sale by the dealer. The display shall include information that similar booklets containing the EPA fuel economy information are also available through the mail by writing to Fuel Economy, Pueblo, Colorado 81009.

(c) The dealer shall display the booklet applicable to each model year automobile offered for sale at the location. If, as described in § 600.406, a regional edition of the booklet is prepared for California automobiles:

(1) Each dealer who offers automobiles for sale at a location within the State of California shall display the California regional edition of the booklet.

(2) Each dealer who offers automobiles for sale at locations outside the State of California, and expects that at least 50 percent of the automobiles eventually sold at the location during the model year will be California configurations, shall display the California regional edition of the booklet. These dealers may also display the national edition of the booklet provided both editions are displayed with equal prominence.

§ 600.406–77 [Reserved]

§ 600.407–77 Booklets displayed by dealers.

(a) Booklets displayed by dealers in order to fulfill the obligations of § 600.405 may be either the Gas Mileage Guide published by the FEA Administrator or a booklet approved by the Administrator of EPA containing the same information, format, and order as the booklet published by the FEA Administrator.

(b) The booklet may highlight the dealer's product line by contrasting color of ink or boldface type and may include other supplemental information regarding the dealer's product line

subject to approval by the Administrator.

(c) A manufacturer's name and logo or a dealer's name and address or both may appear on the back cover of the booklet.

Subpart F—Fuel Economy Regulations for Model Year 1978 Passenger Automobiles and for 1979 and Later Model Year Automobiles (Light Trucks and Passenger Automobiles)—Procedures for Determining Manufacturer's Average Fuel Economy

AUTHORITY: Sec. 301, Pub. L. 94–163, 89 Stat. 901 (15 U.S.C. 2001, 2003, 2005, 2006).

SOURCE: 42 FR 45662, Sept. 12, 1977, unless otherwise noted.

§ 600.501–85 General applicability.

(a) Except as provided in paragraph (c) of this section, the provisions of this subpart are applicable to 1985 and later model year gasoline-fueled and diesel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

(c) Subject to prior approval by the Administrator, manufacturers may optionally implement, for 1985 model year vehicles, provisions of this subpart that are applicable to 1986 and later model year vehicles.

[49 FR 13847, Apr. 6, 1984]

§ 600.501–86 General applicability.

(a) The provisions of this subpart are applicable to 1986 and later model year gasoline-fueled and diesel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[49 FR 13853, Apr. 6, 1984]

§ 600.501–93 General applicability.

(a) The provisions of this subpart are applicable to 1993 and later model year gasoline-fueled, diesel-fueled, alcohol-fueled, natural gas-fueled, alcohol dual fuel and natural gas dual fuel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[59 FR 39659, Aug. 3, 1994]

§ 600.502–81 Definitions.

(a) The following definitions apply beginning with the 1979 model year. The definitions in § 600.502–78 remain effective except that provision (a)(2)(ii) is hereby superseded. The definitions in § 600.002 also apply to this subpart.

(1) ''Declared value'' of imported components shall be:

(i) The value at which components are declared by the importer to the U.S. Customs Service at the date of entry into the customs territory of the United States, or

(ii) With respect to imports into Canada, the declared value of such components as if they were declared as imports into the United States at the date of entry into Canada, or

(iii) With respect to imports into Mexico (when § 600.511–80(b)(3) applies), the declared value of such components as if they were declared as imports into the United States at the date of entry into Mexico.

(2) *Cost of production* of a car line shall mean the aggregate of the products of:

(i) The average U.S. dealer wholesale price for such car line as computed from each official dealer price list effective during the course of a model year, and

(ii) The number of automobiles within the car line produced during the part of the model year that the price list was in effect.

(3) *Equivalent petroleum-based fuel economy value* means a number which represents the average number of miles traveled by an electric vehicle per gallon of gasoline.

[45 FR 49262, July 24, 1980, as amended at 59 FR 678, Jan. 6, 1994; 59 FR 33914, July 1, 1994]

§ 600.503–78 Abbreviations.

The abbreviations in § 600.003 apply to this subpart.

§ 600.504–78 Section numbering, construction.

The section numbering procedure set forth in § 600.004 applies to this subpart.

§ 600.505–78 Recordkeeping.

The recordkeeping procedure set forth in § 600.005 applies to this subpart.

§ 600.507–86 Running change data requirements.

(a) Except as specified in paragraph (d) of this section, the manufacturer shall submit additional running change fuel economy data as specified in paragraph (b) of this section for any running change approved or implemented under 40 CFR 86.079–32, 86.079–33, or 86.082–34 or 40 CFR 86.1842–01 as applicable, which:

(1) Creates a new base level or,

(2) Affects an existing base level by:

(i) Adding an axle ratio which is at least 10 percent larger (or, optionally, 10 percent smaller) than the largest axle ratio tested.

(ii) Increasing (or, optionally, decreasing) the road-load horsepower for a subconfiguration by 10 percent or more for the individual running change or, when considered cumulatively, since original certification (for each cumulative 10 percent increase using the originally certified road-load horsepower as a base).

(iii) Adding a new subconfiguration by increasing (or, optionally, decreasing) the equivalent test weight for any previously tested subconfiguration in the base level.

(b)(1) The additional running change fuel economy data requirement in paragraph (a) of this section will be determined based on the sales of the vehicle configurations in the created or affected base level(s) as updated at the time of running change approval.

(2) Within each newly created base level as specified in paragraph (a)(1) of this section, the manufacturer shall submit data from the highest projected total model year sales subconfiguration within the highest projected total model year sales configuration in the base level.

(3) Within each base level affected by a running change as specified in paragraph (a)(2) of this section, fuel economy data shall be submitted for the vehicle configuration created or affected by the running change which has the highest total model year sales. The test vehicle shall be of the subconfiguration created by the running change which has the highest projected total model year sales within the applicable vehicle configuration.

(c) The manufacturer shall submit the fuel economy data required by this section to the Administrator in accordance with § 600.314(b).

(d) For those model types created under § 600.207(a)(2), the manufacturer shall submit data for each subconfiguration added by a running change.

[49 FR 13854, Apr. 6, 1984, as amended at 49 FR 48150, Dec. 10, 1984; 64 FR 23976, May 4, 1999]

§ 600.509–86 Voluntary submission of additional data.

(a) The manufacturer may, at his option, submit data in addition to the data required by the Administrator.

(b) Additional fuel economy data may be submitted by the manufacturer for any vehicle configuration which is to be tested as required in § 600.507 or for which fuel economy data were previously submitted under paragraph (c) of this section.

(c) Within a base level, additional fuel economy data may be submitted

by manufacturing for any vehicle configuration which is not required to be tested by §600.507.

[49 FR 13854, Apr. 6, 1984]

§600.510–86 Calculation of average fuel economy.

(a) Average fuel economy will be calculated to the nearest 0.1 mpg for the classes of automobiles identified herein, and the results of such calculations will be reported to the Secretary of Transportation for use in determining compliance with the applicable fuel economy standards.

(1) An average fuel economy calculation will be made for the category of passenger automobiles that is domestically manufactured as defined in §600.511(d)(1).

(2) An average fuel economy calculation will be made for the category of passenger automobiles that is not domestically manufactured as defined in §600.511(d)(2).

(3) An average fuel economy calculation will be made for the category of light trucks which is defined in §600.511(e)(1) and has two-wheel drive.

(4) An average fuel economy calculation will be made for the category of light trucks which is defined in §600.511(e)(1) and has four-wheel drive.

(5) An average fuel economy calculation will be made for the category of light trucks which is defined in §600.511(e)(2) and has two-wheel drive.

(6) An average fuel economy calculation will be made for the category of light trucks which is defined in §600.511(e)(2) and has four-wheel drive.

(b) For the purpose of calculating average fuel economy under paragraph (c), of this section:

(1) All fuel economy data submitted in accordance with §600.006(e) or §600.512(c) shall be used.

(2) The combined city/highway fuel economy will be calculated for each model type in accordance with §600.207 of this section except that:

(i) Separate fuel economy values will be calculated for model types and base levels associated with car lines that are:

(A) Domestically produced, and

(B) Nondomestically produced and imported;

(ii) Total model year production data, as required by this subpart, will be used instead of sales projections;

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to correct gallons of diesel fuel to equivalent gallons of gasoline;

(iv) The fuel economy value will be rounded to the nearest 0.1 mpg;

(v) At the manufacturer's option, those vehicle configurations that are selfcompensating to altitude changes may be separated by sales into high-altitude sales categories and low-altitude sales categories. These separate sales categories may then be treated (only for the purpose of this section) as separate configurations in accordance with the procedure of paragraph §600.207(a)(4)(ii), and

(3) The fuel economy value for each vehicle configuration is the combined fuel economy calculated according to §600.206 except that:

(i) Separate fuel economy values will be calculated for vehicle configurations associated with car lines that are:

(A) Domestically produced, and

(B) Nondomestically produced and imported:

(ii) Total model year production data, as required by this subpart will be used instead of sales projections; and

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to convert gallons of diesel fuel to equivalent gallons of gasoline.

(c) Except as permitted in paragraph (d) of this section, the average fuel economy will be calculated individually for each category identified in §600.510(a) as follows:

(1) Divide the total production volume of that category of automobiles by

(2) A sum of terms, each of which corresponds to a model type within that category of automobiles and is a fraction determined by dividing

(i) The number of automobiles of that model type produced by the manufacturer in the model year by

(ii) The fuel economy calculated for that model type in accordance with paragraph (b)(2) of this section.

(d) The Administrator may approve alternative calculation methods if they

are part of an approved credit plan under the provisions of section 503(b) of U.S.C. 2003(b).

(e) For passenger categories identified in paragraphs (a) (1) and (2) of this section, the average fuel economy calculated in accordance with paragraph (c) of this section shall be adjusted using the following equation:

$$AFE_{adj} = AFE[((0.55 \times a \times c) + (0.45 \times c) + (0.5556 \times a) + 0.4487)/((0.55 \times a) + 0.45)] + IW$$

Where:

AFE_{ajd}=Adjusted average combined fuel economy, rounded to the nearest 0.1 mpg.

AFE=Average combined fuel economy as calculated in paragraph (c) of this section, rounded to the nearest 0.0001 mpg.

a=Sales-weighted average (rounded to the nearest 0.0001 mpg) of all model type highway fuel economy values (rounded to the nearest 0.1 mpg) divided by the sales-weighted average (rounded to the nearest 0.0001 mpg) of all model type city fuel economy values (rounded to the nearest 0.1 mpg). The quotient shall be rounded to 4 decimal places. These average fuel economies shall be determined using the methodology of paragraph (c) of this section.

c=0.0022 for the 1986 model year.

c=A constant value, fixed by model year. For 1987, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available. For 1988 and later model years, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available.

$$IW=(9.2917 \times 10^{-3} \times SF_{3\,IWC} \times FE_{3\,IWC}) - (3.5123 \times 10^{-3} \times SF_{4\,ETW} \times FE_{4\,IWC})$$

NOTE: Any calculated value of IW less than zero shall be set equal to zero.

$SF_{3\,IWC}$=The 3000 lb. inertia weight class sales divided by total sales. The quotient shall be rounded to 4 decimal places.

$SF_{4\,ETW}$=The 4000 lb. equivalent test weight category sales divided by total sales. The quotient shall be rounded to 4 decimal places.

$FE_{4\,IWC}$=The sales-weighted average combined fuel economy of all 3000 lb. inertia weight class base leves in the compliance category. Round the result to the nearest 0.0001 mpg.

$FE_{4\,IWC}$=The sales-weighted average combined fuel economy of all 4000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

(f) The Administration shall calculate and apply additional average fuel ecomony adjustments if, after notice and opportunity for comment, the Administrator determines that, as a result of test procedure changes not previously considered, such correction is necessary to yield fuel economy test results that are comparable to those obtained under the 1975 test procedures. In making such determinations, the Administrator must find that:

(1) A directional change in measured fuel economy of an average vehicle can be predicted from a revision to the test procedures;

(2) The magnitude of the change in measured fuel economy for any vehicle or fleet of vehicles caused by a revision to the test procedures is quantifiable from theoretical calculations or best available test data;

(3) The impact of a change on average fuel economy is not due to eliminating the ability of manufacturers to take advantage of flexibilities within the existing test procedures to gain measured improvements in fuel economy which are not the result of actual improvements in the fuel economy of production vehicles.

(4) The impact of a change on average fuel economy is not solely due to a greater ability of manufacturers to reflect in average fuel economy those design changes expected to have comparable effect on in-use fuel economy.

(5) The test procedure change is required by EPA or is a change initiated by EPA in its laboratory and is not a change implemented solely by a manufacturer in its own laboratory.

[49 FR 13854, Apr. 6, 1984, as amended at 50 FR 27186, July 1, 1985; 51 FR 37851, Oct. 24, 1986]

§ 600.510–93 Calculation of average fuel economy.

(a) Average fuel economy will be calculated to the nearest 0.1 mpg for the classes of automobiles identified in this section, and the results of such calculations will be reported to the Secretary of Transportation for use in determining compliance with the applicable fuel economy standards.

(1) An average fuel economy calculation will be made for the category of passenger automobiles that is domestically manufactured as defined in § 600.511(d)(1).

(2) An average fuel economy calculation will be made for the category of

passenger automobiles that is not domestically manufactured as defined in §600.511(d)(2).

(3) An average fuel economy calculation will be made for the category of light trucks that is domestically manufactured as defined in §600.511(e)(1).

(4) An average fuel economy calculation will be made for the category of light trucks that is not domestically manufactured as defined in §600.511(e)(2).

(b) For the purpose of calculating average fuel economy under paragraph (c), of this section:

(1) All fuel economy data submitted in accordance with §600.006(e) or §600.502(c) shall be used.

(2) The combined city/highway fuel economy will be calculated for each model type in accordance with §600.207 of this section except that:

(i) Separate fuel economy values will be calculated for model types and base levels associated with car lines that are:

(A) Domestically produced; and

(B) Nondomestically produced and imported;

(ii) Total model year production data, as required by this subpart, will be used instead of sales projections;

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to correct gallons of diesel fuel to equivalent gallons of gasoline;

(iv) The fuel economy value will be rounded to the nearest 0.1 mpg; and

(v) At the manufacturer's option, those vehicle configurations that are selfcompensating to altitude changes may be separated by sales into high-altitude sales categories and low-altitude sales categories. These separate sales categories may then be treated (only for the purpose of this section) as separate configurations in accordance with the procedure of paragraph §600.207(a)(4)(ii).

(3) The fuel economy value for each vehicle configuration is the combined fuel economy calculated according to §600.206 except that:

(i) Separate fuel economy values will be calculated for vehicle configurations associated with car lines that are:

(A) Domestically produced; and

(B) Nondomestically produced and imported;

(ii) Total model year production data, as required by this subpart will be used instead of sales projections; and

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to convert gallons of diesel fuel to equivalent gallons of gasoline.

(c) Except as permitted in paragraph (d) of this section, the average fuel economy will be calculated individually for each category identified in paragraph (a) of this section as follows:

(1) Divide the total production volume of that category of automobiles; by

(2) A sum of terms, each of which corresponds to a model type within that category of automobiles and is a fraction determined by dividing:

(i) The number of automobiles of that model type produced by the manufacturer in the model year; by

(ii) For gasoline-fueled and diesel-fueled model types, the fuel economy calculated for that model type in accordance with paragraph (b)(2) of this section; or

(iii) For alcohol-fueled model types, the fuel economy value calculated for that model type in accordance with (b)(2) of this section divided by 0.15 and rounded to the nearest 0.1 mpg; or

(iv) For natural gas-fueled model types, the fuel economy value calculated for that model type in accordance with (b)(2) of this section divided by 0.15 and rounded to the nearest 0.1 mpg; or

(v) For alcohol dual fuel model types, for model years 1993 through 2004, the harmonic average of the following two terms; the result rounded to the nearest 0.1 mpg:

(A) The combined model type fuel economy value for operation on gasoline or diesel fuel as determined in §600.207(b)(5)(i); and

(B) The combined model type fuel economy value for operation on alcohol fuel as determined in §600.207(b)(5)(ii) divided by 0.15 provided the requirements of §600.510 (g) are met; or

(vi) For natural gas dual fuel model types, for model years 1993 through

2004, the harmonic average of the following two terms; the result rounded to the nearest 0.1 mpg:

(A) The combined model type fuel economy value for operation on gasoline or diesel as determined in § 600.207(b)(5)(i); and

(B) The combined model type fuel economy value for operation on natural gas as determined in § 600.207(b)(5)(ii) divided by 0.15 provided the requirements of paragraph (g) of this section are met.

(d) The Administrator may approve alternative calculation methods if they are part of an approved credit plan under the provisions of 15 U.S.C. 2003.

(e) For passenger categories identified in paragraphs (a) (1) and (2) of this section, the average fuel economy calculated in accordance with paragraph (c) of this section shall be adjusted using the following equation:

$$AFE_{adj} = AFE[((0.55 \times a \times c) + (0.45 \times c) + (0.5556 \times a) + 0.4487) / ((0.55 \times a) + 0.45)] + IW$$

Where:

AFE_{adj} = Adjusted average combined fuel economy, rounded to the nearest 0.1 mpg.

AFE = Average combined fuel economy as calculated in paragraph (c) of this section, rounded to the nearest 0.0001 mpg.

a = Sales-weight average (rounded to the nearest 0.0001 mpg) of all model type highway fuel economy values (rounded to the nearest 0.1 mpg) divided by the sales-weighted average (rounded to the nearest 0.0001 mpg) of all model type city fuel economy values (rounded to the nearest 0.1 mpg). The quotient shall be rounded to 4 decimal places. These average fuel economies shall be determined using the methodology of paragraph (c) of this section.

c = 0.0022 for the 1986 model year.

c = A constant value, fixed by model year. For 1987, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available. For 1988 and later model years, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available.

$$IW = (9.2917 \times 10^{-3} \times SF_{3IWC} \times FE_{3IWC}) - (3.5123 \times 10^{-3} \times SF_{4ETW} \times FE_{4IWC})$$

NOTE: Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWC} = The 3000 lb. inertia weight class sales divided by total sales. The quotient shall be rounded to 4 decimal places.

SF_{4ETW} = The 4000 lb. equivalent test weight category sales divided by total sales. The quotient shall be rounded to 4 decimal places.

FE_{4IWC} = The sales-weighted average combined fuel economy of all 3000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

FE_{4IWC} = The sales-weighted average combined fuel economy of all 4000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

(f) The Administrator shall calculate and apply additional average fuel economy adjustments if, after notice and opportunity for comment, the Administrator determines that, as a result of test procedure changes not previously considered, such correction is necessary to yield fuel economy test results that are comparable to those obtained under the 1975 test procedures. In making such determinations, the Administrator must find that:

(1) A directional change in measured fuel economy of an average vehicle can be predicted from a revision to the test procedures;

(2) The magnitude of the change in measured fuel economy for any vehicle or fleet of vehicles caused by a revision to the test procedures is quantifiable from theoretical calculations or best available test data;

(3) The impact of a change on average fuel economy is not due to eliminating the ability of manufacturers to take advantage of flexibility within the existing test procedures to gain measured improvements in fuel economy which are not the result of actual improvements in the fuel economy of production vehicles;

(4) The impact of a change on average fuel economy is not solely due to a greater ability of manufacturers to reflect in average fuel economy those design changes expected to have comparable effects on in-use fuel economy;

(5) The test procedure change is required by EPA or is a change initiated by EPA in its laboratory and is not a change implemented solely by a manufacturer in its own laboratory.

(g)(1) Alcohol dual fuel automobiles and natural gas dual fuel automobiles must provide equal or greater energy efficiency while operating on alcohol or natural gas as while operating on gasoline or diesel fuel to obtain the CAFE credit determined in paragraphs (c)(2)(v) and (vi) of this section. The following equation must hold true:

E_{alt}/E_{pet} > or = 1

Where:

E_{alt} = $[FE_{alt}/(NHV_{alt}\ xD_{alt})]x10^6$ = energy efficiency while operating on alternative fuel rounded to the nearest 0.01 miles/million BTU.

E_{pet} = $[FE_{pet}/(NHV_{pet}\ xD_{pet})]x10^6$ = energy efficiency while operating on gasoline or diesel (petroleum) fuel rounded to the nearest 0.01 miles/million BTU.

FE_{alt} is the fuel economy [miles/gallon for liquid fuels or miles/100 standard cubic feet for gaseous fuels] while operated on the alternative fuel as determined in §600.113;

FE_{pet} is the fuel economy [miles/gallon] while operated on petroleum fuel (gasoline or diesel) as determined in §600.113;

NHV_{alt} is the net (lower) heating value [BTU/lb] of the alternative fuel;

NHV_{pet} is the net (lower) heating value [BTU/lb] of the petroleum fuel;

D_{alt} is the density [lb/gallon for liquid fuels or lb/100 standard cubic feet for gaseous fuels] of the alternative fuel;

D_{pet} is the density [lb/gallon] of the petroleum fuel.

(i) The equation must hold true for both the city and highway fuel economy values for each test of each test vehicle.

(ii)(A) The net heating value for alcohol fuels shall be determined per ASTM D 240 (Incorporated by reference as specified in §600.011–93).

(B) The density for alcohol fuels shall be determined per ASTM D 1298 (Incorporated by reference as specified in §600.011–93).

(iii) The net heating value and density of gasoline are to be determined by the manufacturer in accordance with §600.113(c).

(2) For model years 1993 through 1995, alcohol dual fuel automobiles designed to operate on mixtures of alcohol and gasoline must, in addition to paragraph (g)(1) of this section, to obtain the CAFE credit determined in paragraphs (c)(2)(v) and (vi) of this section, provide equal or superior energy efficiency while operating on a mixture of 50% alcohol, 50% gasoline by volume, as while operating on gasoline fuel. The following equation must hold true:

E_{50}/E_g>or=1

Where:

$E_{50}=[FE_{50}/(NHV_{50}\times D_{50})]\times 10^6$=energy efficiency while operating on 50% alcohol, 50% gasoline rounded to the nearest 0.01 miles/million BTU.

$E_g=[FE_g/(NHV_g\times D_g)]x10^6$=energy efficiency while operating on gasoline fuel rounded to the nearest 0.01 miles/million BTU.

FE_{50} is the fuel economy [miles/gallon] while operated on 50% alcohol, 50% gasoline as determined in §600.113;

FE_g is the fuel economy [miles/gallon] while operated on gasoline as determined in §600.113;

NHV_{50} is the net (lower) heating value [BTU/lb] of the 50/50 blend;

NHV_g is the net (lower) heating value [BTU/lb] of gasoline;

D_{50} is the density [lb/gallon] of the 50/50 blend;

D_g is the density [lb/gallon] of the gasoline.

(i) To demonstrate that the equation holds true for each engine family, the manufacturer will:

(A) Test one test vehicle in each engine family on both the city and highway cycles; or

(B) In lieu of testing, provide a written statement attesting that equal or superior energy efficiency is attained while using a 50% alcohol, 50% gasoline mixture compared to using 100% gasoline.

(ii)(A) The net heating value for the 50% alcohol, 50% gasoline mixture shall be determined by ASTM D 240 (Incorporated by reference as specified in §600.011–93).

(B) The density for the 50% alcohol, 50% gasoline mixture shall be determined per ASTM D 1298 (Incorporated by reference as specified in § 600.011–93).

(iii) The net heating value and density of gasoline are to be determined by the manufacturer in accordance with § 600.113(c).

(3) Alcohol dual fuel passenger automobiles and natural gas dual fuel passenger automobiles manufactured during model years 1993 through 2004 must meet the minimum driving range requirements established by the Secretary of Transportation (49 CFR part 538) to obtain the CAFE credit determined in paragraphs (c)(2)(v) and (vi) of this section.

(h) For each of the model years 1993 through 2004, and for each category of automobile identified in paragraph (a) of this section, the maximum increase in average fuel economy determined in paragraph (c) of this section attributable to alcohol dual fuel automobiles and natural gas dual fuel automobiles shall be 1.2 miles per gallon or as provided for in paragraph (i) of this section.

(1) The Administrator shall calculate the increase in average fuel economy to determine if the maximum increase provided in paragraph (h) of this section has been reached. The Administrator shall calculate the average fuel economy for each category of automobiles specified in paragraph (a) of this section by subtracting the average fuel economy values calculated in accordance with this section by assuming all alcohol dual fuel and natural gas dual fuel automobiles are operated exclusively on gasoline (or diesel) fuel from the average fuel economy values determined in paragraphs (b)(2)(vi), (b)(2)(vii), and (c) of this section. The difference is limited to the maximum increase specified in paragraph (h) of this section.

(2) [Reserved]

(i) In the event that the Secretary of Transportation lowers the corporate average fuel economy standard applicable to passenger automobiles below 27.5 miles per gallon for any model year during 1993 through 2004, the maximum increase of 1.2 mpg per year specified in paragraph (h) of this section shall be reduced by the amount the standard was lowered, but not reduced below 0.7 mpg per year.

[59 FR 39659, Aug. 3, 1994]

EFFECTIVE DATE NOTE: At 59 FR 39659, Aug. 3, 1994, § 600.510–93 was added. This section contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

§ 600.511–80 Determination of domestic production.

(a) An automobile shall be considered domestically produced in any model year if it is included within a domestically produced car line (car line includes station wagons for purposes of this paragraph), unless the assembly of such automobile is completed in Canada or Mexico and such automobile is not imported into the United States prior to the expiration of 30 days following the end of the model year. For purposes of this paragraph a car line will be considered domestically produced if the following ratio is less than 0.25:

(1) The sum of the declared value, as defined in § 600.502, of all of the imported components installed or included on automobiles produced within such a car line within a given model year plus the cost of transportation and insuring such components to the United States port of entry, the Mexican port of entry (when paragraph (b)(3) of this section applies), or the Canadian port of entry but exclusive of any customs duty, divided by

(2) The cost of production, as defined in § 600.502, of automobiles within such car line.

(b) For the purposes of calculations under this subpart with respect to automobiles manufactured during any model year,

(1) An average exchange rate for the country of origin of each imported component shall be used that is calculated by taking the mean of the exchange rates in effect at the end of each quarter set by the Federal Reserve Bank of New York for twelve calendar quarters prior to and including the calendar quarter ending one year prior to the date that the manufacturer submits the calculation of the preliminary average for such model year. Such rate, once calculated, shall

be in effect for the duration of the model year. Upon petition of a manufacturer, the Administrator may permit the use of a different exchange rate where appropriate and necessary.

(2) For automobiles for which paragraph (b)(3) of this section does not apply pursuant to the schedule in paragraph (b)(4), components shall be considered imported unless they are either:

(i) Wholly the growth, product, or manufacture of the United States and/or Canada, or

(ii) Substantially transformed in the United States or Canada into a new and different article of commerce.

(3) For automobiles for which this paragraph applies pursuant to the schedule in paragraph (b)(4) of this section, components shall be considered imported unless they are either:

(i) Wholly the growth, product, or manufacture of the United States and/or Canada and/or Mexico, or

(ii) Substantially transformed in the United States and/or Canada and/or Mexico into a new and different article of commerce.

(4) Paragraphs (b)(4) (i) through (v) of this section set forth the schedule according to which paragraph (b)(3) of this section applies for all automobiles manufactured by a manufacturer and sold in the United States, wherever assembled.

(i) With respect to a manufacturer that initiated the assembly of automobiles in Mexico before model year 1992, the manufacturer may elect, at any time between January 1, 1997, and January 1, 2004, to have paragraph (b)(3) of this section apply to all automobiles it manufactures, beginning with the model year commencing after the date of such election.

(ii) With respect to a manufacturer initiating the assembly of automobiles in Mexico after model year 1991, paragraph (b)(3) of this section shall apply to all automobiles it manufactures, beginning with the model year commencing after January 1, 1994, or the model year commencing after the date that the manufacturer initiates the assembly of automobiles in Mexico, whichever is later.

(iii) With respect to a manufacturer not described by paragraph (b)(4) (i) or (ii) of this section assembling automobiles in the United States or Canada but not in Mexico, the manufacturer may elect, at any time between January 1, 1997, and January 1, 2004, to have paragraph (b)(3) of this section apply to all automobiles it manufactures, beginning with the model year commencing after the date of such election, except that if such manufacturer initiates the assembly of automobiles in Mexico before making such election, this paragraph shall not apply, and the manufacturer shall be subject to paragraph (b)(4)(ii) of this section.

(iv) With respect to a manufacturer not assembling automobiles in the United States, Canada, or Mexico, paragraph (b)(3) of this section shall apply to all automobiles it manufactures, beginning with the model year commencing after January 1, 1994.

(v) With respect to a manufacturer authorized to make an election under paragraph (b)(4) (i) or (iii) of this section which has not made that election within the specified period, paragraph (b)(3) of this section shall apply to all automobiles it manufactures, beginning with the model year commencing after January 1, 2004.

(5) All elections under paragraph (b)(4) of this section shall be made in accordance with the procedures established by the Secretary of Transportation pursuant to 15 U.S.C. 2003(b)(2)(G)(iii).

(c) If it is determined by the Administrator at some date later than the date of entry that the declared value of such imported components did not represent fair market value at the date of entry, through U.S. Bureau of Customs appraisals, the Administrator may review the determination made pursuant to paragraph (a) of this section as to whether the pertinent car lines which utilize such components were correctly included within the manufaturer's domestically-produced or foreign-produced fleets. If such a determination was in error due to misrepresentation of the valuation of imported components at the date of entry, the Administrator may recalculate the manufacturer's average for the affected model year, according to §600.510, to reflect the correct valuation of such imported components in each affected car line.

(d) In calculating average fuel economy under § 600.510(c), the Administrator will separate the total number of passenger automobiles produced by a manufacturer into the following two categories:

(1) Passenger automobiles which are domestically produced by the manufacturer,

(2) Passenger automobiles which are not domestically produced and which are imported by the manufacturer.

(e) In calculating average fuel economy under § 600.510(c), the Administrator will separate the total number of light trucks produced by a manufacturer into the following two categories:

(1) Light trucks which are domestically produced by the manufacturer.

(2) Light trucks which are not domestically produced and which are imported by the manufacturer.

[42 FR 45662, Sept. 12, 1977, as amended at 43 FR 39376, Sept. 5, 1978; 59 FR 679, Jan. 6, 1994; 59 FR 33914, July 1, 1994]

§ 600.512–01 Model year report.

(a) For each model year, the manufacturer shall submit to the Administrator a report, known as the model year report, containing all information necessary for the calculation of the manufacturer's average fuel economy. The results of the manufacturer calculations and summary information of model type fuel economy values which are contained in the average calculation shall be submitted to the Secretary of the Department of Transportation, National Highway and Traffic Safety Administration.

(b)(1) The model year report shall be in writing, signed by the authorized representative of the manufacturer and shall be submitted no later than 90 days after the end of the model year.

(2) The Administrator may waive the requirement that the model year report be submitted no later than 90 days after the end of the model year. Based upon a request by the manufacturer, if the Administrator determines that 90 days is insufficient time for the manufacturer to provide all additional data required as determined in § 600.507, the Administrator shall establish a date by which the model year report must be submitted.

(3) Separate reports shall be submitted for passenger automobiles and light trucks (as identified in § 600.510).

(c) The model year report must include the following information:

(1) All fuel economy data used in the labeling calculations and subsequently required by the Administrator in accordance with § 600.507;

(2) All fuel economy data for certification vehicles and for vehicles tested for running changes approved under 40 CFR 86.1842–01;

(3) Any additional fuel economy data submitted by the manufacturer under § 600.509;

(4) A fuel economy value for each model type of the manufacturer's product line calculated according to § 600.510(b)(2);

(5) The manufacturer's average fuel economy value calculated according to § 600.510(c);

(6) A listing of both domestically and nondomestically produced car lines as determined in § 600.511 and the cost information upon which the determination was made; and

(7) The authenticity and accuracy of production data must be attested to by the corporation, and shall bear the signature of an officer (a corporate executive of at least the rank of vice-president) designated by the corporation. Such attestation shall constitute a representation by the manufacturer that the manufacturer has established reasonable, prudent procedures to ascertain and provide production data that are accurate and authentic in all material respects and that these procedures have been followed by employees of the manufacturer involved in the reporting process. The signature of the designated officer shall constitute a representation by the required attestation.

[64 FR 23976, May 4, 1999]

§ 600.512–86 Model year report.

(a) For each model year, the manufacturer shall submit to the Administrator a report, known as the model year report, containing all information necessary for the calculation of the manufacturer's average fuel economy.

(b)(1) The model year report shall be in writing, signed by the authorized representative of the manufacturer and

shall be submitted no later than 60 days after the report required in §86.082–37 for the final production quarter.

(2) The Administrator may waive the requirement that the model year report be submitted within 60 days after the final quarterly production report. Based upon a request by the manufacturer, if the Administrator determines that 60 days is insufficient time for the manufacturer to provide all additional data required as determined in §600.507, the Administrator shall establish a date by which the model year report must be submitted.

(3) Separate reports shall be submitted for passenger automobiles and light trucks (as identified in §600.510).

(c) The model year report must include the following information:

(1) All fuel economy data used in the labeling calculations and subsequently required by the Administrator in accordance with §600.507.

(2) All fuel economy data for certification vehicles and for vehicles tested for running changes approved under §§86.079–32, 86.079–33, and 86.082–34.

(3) Any additional fuel economy data submitted by the manufacturer under §600.509.

(4) A fuel economy value for each model type of the manufacturer's product line calculated according to §600.510(b)(2).

(5) The manufacturer's average fuel economy value calculated according to §600.510(c).

(6) A listing of both domestically and nondomestically produced car lines as determined in §600.511 and the cost information upon which the determination was made.

(7) The authenticity and accuracy of production data must be attested to by the corporation, and shall bear the signature of an officer (a corporate executive of at least the rank of vice-president) designated by the corporation. Such attestation shall constitute a representation by the manufacturer that the manufacturer has established reasonable, prudent procedures to ascertain and provide production data that are accurate and authentic in all material respects and that these procedures have been followed by employees of the manufacturer involved in the reporting process. The signature of the designated officer shall constitute a representation by the required attestation.

[49 FR 13855, Apr. 6, 1984]

§600.513–81 Gas Guzzler Tax.

(a)(1) The provisions of this section do not apply to passenger automobiles exempted from Gas Guzzler Tax assessments by the Energy Tax Act of 1978 and regulations promulgated thereunder by the Internal Revenue Service. *However,* the manufacturer of an exempted passenger automobile may, in his discretion, label such vehicles in accordance with the provisions of this section.

(2) Vehicles produced by a manufacturer that has been granted an alternate tax rate schedule by the Secretary of the Treasury shall be labeled with the applicable tax determined under any such alternate tax schedule.

(3) For 1980 and later model year passenger automobiles, the combined general label model type fuel economy value used for Gas Guzzler Tax assessments shall be calculated in accordance with the following equation, rounded to the nearest 0.1 mpg:

$$FE_{adj}=Fe\ [((0.55\times a_g\times c)+(0.45\times c)+(0.5556\times a_g)+0.4487)/((0.55\times a_g)+0.45)]+IW_g$$

Where:

FE_{adj}=Fuel economy value to be used for determination of gas guzzler tax assessment rounded to the nearest 0.1 mpg.

FE=Combined model type fuel economy calculated in accordance with §600.207, rounded to the nearest 0.0001 mpg.

a_g=Model type highway fuel economy, calculated in accordance with §600.207, rounded to the nearest 0.0001 mpg divided by the model type city fuel economy calculated in accordance with §600.207, rounded to the nearest 0.0001 mpg. The quotient shall be rounded to 4 decimal places.

$c=2.501\times10^{-2}$ for the 1980 model year
$c=2.184\times10^{-2}$ for the 1981 model year
$c=9.260\times10^{-3}$ for the 1982 model year
$c=1.435\times10^{-2}$ for the 1983 model year
$c=1.420\times10^{-2}$ for the 1984 model year
$c=1.490\times10^{-2}$ for the 1985 model year
$c=1.300\times10^{-3}$ for the 1986 and later model years

$$IW_g=(9.2917\times10^{-3}\times SF_{3IWCG}\times FE_{3IWCG})-(3.5123\times10^{-3}\times SF_{4ETWG}\times FE_{4IWCG})$$

NOTE. —Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWCG}=The 3000 lb. inertia weight class sales in the model type divided by the total model type sales. The quotient shall be rounded to 4 decimal places.

SF_{4ETWG}=The 4000 lb. equivalent test weight sales in the model type divided by the total model type sales, the quotient shall be rounded to 4 decimal places.

FE_{3IWCG}=The 3000 lb. inertia weight class base level combined fuel economy used to calculate the model type fuel economy rounded to the nearest 0.0001 mpg.

FE_{4IWCG}=The 4000 lb. inertia weight class base level combined fuel economy used to calculate the model type fuel economy rounded to the nearest 0.0001 mpg.

(b) *This paragraph applies to 1981 model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 17.0 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 17.0 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 16.0 mpg, but less than 17.0 mpg, the Gas Guzzler Tax statement shall show a tax of $200.

(iii) At least 15.0 mpg, but less than 16.0 mpg, the Gas Guzzler Tax statement shall show a tax of $350.

(iv) At least 14.0 mpg, but less than 15.0 mpg, the Gas Guzzler Tax statement shall show a tax of $450.

(v) At least 13.0 mpg, but less than 14.0 mpg, the Gas Guzzler Tax statement shall show a tax of $550.

(vi) Less than 13.0 mpg, the Gas Guzzler Tax statement shall show a tax of $650.

(c) *This paragraph applies to 1982 model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 18.5 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 18.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of $200.

(iii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of $350.

(iv) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of $450.

(v) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of $600.

(vi) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of $750.

(vii) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of $950.

(viii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,200.

(d) *This paragraph applies to 1983 model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 19.0 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 19.0 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 18.0 mpg, but less than 19.0 mpg, the Gas Guzzler Tax statement shall show a tax of $350.

(iii) At least 17.0 mpg, but less than 18.0 mpg, the Gas Guzzler Tax statement shall show a tax of $500.

(iv) At least 16.0 mpg, but less than 17.0 mpg, the Gas Guzzler Tax statement shall show a tax of $650.

(v) At least 15.0 mpg, but less than 16.0 mpg, the Gas Guzzler Tax statement shall show a tax of $800.

(vi) At least 14.0 mpg, but less than 15.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,000.

(vii) At least 13.0 mpg, but less than 14.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,250.

(viii) Less than 13.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,550.

(e) *This paragraph applies to 1984 model year vehicles.* (1) Passengers automobiles with a combined general label model type fuel economy value of less than 19.5 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 19.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 18.5 mpg, but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of $450.

(iii) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of $600.

(iv) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of $750.

(v) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of $950.

(vi) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,150.

(vii) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,450.

(viii) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,750.

(ix) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,150.

(f) *This paragraph applies to 1985 model year vehicles.* (1) Passengers automobiles with a combined general label model type fuel economy value of less than 21.0 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 21.0 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 20.0 mpg, but less than 21.0 mpg, the Gas Guzzler Tax statement shall show a tax of $500.

(iii) At least 19.0 mpg, but less than 20.0 mpg, the Gas Guzzler Tax statement shall show a tax of $600.

(iv) At least 18.0 mpg, but less than 19.0 mpg, the Gas Guzzler Tax statement shall show a tax of $800.

(v) At least 17.0 mpg, but less than 18.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,000.

(vi) At least 16.0 mpg, but less than 17.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,200.

(vii) At least 15.0 mpg, but less than 16.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,500.

(viii) At least 14.0 mpg, but less than 15.0 mpg, the Gas Guzzler Tax statement shall show a tax of $1,800.

(ix) At least 13.0 mpg, but less than 14.0 mpg, the Gas Guzzler Tax statement shall show a tax of $2,200.

(x) Less than 13.0 mpg, the Gas Guzzler Tax statement shall show a tax of $2,650.

(g) *This paragraph applies to 1986 and later model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 22.5 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 22.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 21.5 mpg, but less than 22.5 mpg, the Gas Guzzler Tax statement shall show a tax of $500.

(iii) At least 20.5 mpg, but less than 21.5 mpg, the Gas Guzzler Tax statement shall show a tax of $650.

(iv) At least 19.5 mpg, but less than 20.5 mpg, the Gas Guzzler Tax statement shall show a tax of $850.

(v) At least 18.5 mpg, but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,050.

(vi) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,300.

(vii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,500.

(viii) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,850.

(ix) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,250.

(x) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,700.

(xi) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,200.

(xii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,850.

(Title V of the Motor Vehicle Information and Cost Savings Act, 15 U.S.C. 2001 *et. seq.*, as amended by sec. 403 of the National Energy Conservation Policy Act, Pub. L. 95–619, 92 Stat. 3256)

[45 FR 51165, July 31, 1980, as amended at 50 FR 27187, July 1, 1985]

§ 600.513–91 Gas Guzzler Tax.

(a) This section applies only to passenger automobiles sold after December 27, 1991, regardless of the model year of those vehicles. For alcohol dual fuel and natural gas dual fuel automobiles, the fuel economy while such automobiles are operated on gasoline will be used for Gas Guzzler Tax assessments.

(1) The provisions of this section do not apply to passenger automobiles exempted for Gas Guzzler Tax assessments by applicable federal law and regulations. However, the manufacturer of an exempted passenger automobile may, in its discretion, label such vehicles in accordance with the provisions of this section.

(2) For 1991 and later model year passenger automobiles, the combined general label model type fuel economy value used for Gas Guzzler Tax assessments shall be calculated in accordance with the following equation, rounded to the nearest 0.1 mpg:

$$FE_{adj}=FE\ [((0.55\times a_g\times c) + (0.45\times c) + (0.5556\times a_g) + 0.4487)/((0.55\times a_g) + 0.45)] + IW_g$$

Where:

FE_{adj}=Fuel economy value to be used for determination of gas guzzler tax assessment rounded to the nearest 0.1 mpg.

FE=Combined model type fuel economy calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg.

a_g=Model type highway fuel economy, calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg divided by the model type city fuel economy calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg. The quotient shall be rounded to 4 decimal places.

c=gas guzzler adjustment factor=1.300×10^{-3} for the 1986 and later model years.

$$IW_g=(9.2917\times10^{-3}\times SF_{3IWCG}\ FE_{3IWCG}) - (3.5123\times10^{-3}\times SF_{4ETWG}\times FE_{4IWCG})$$

NOTE: Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWCG}=The 3000 lb. inertia weight class sales in the model type divided by the total model type sales; the quotient shall be rounded to 4 decimal places.

SF_{4ETWG}=The 4000 lb. equivalent test weight sales in the model type divided by the total model type sales, the quotient shall be rounded to 4 decimal places.

FE_{3IWCG}=The 3000 lb. inertial weight class base level combined fuel economy used to calculate the model type fuel economy rounded to the nearest 0.0001 mpg.

FE_{4IWCG}=The 4000 lb. inertial weight class base level combined fuel economy used to calculate the model type fuel economy f/rounded to the nearest 0.001 mpg.

(b)(1) For passenger automobiles sold after December 31, 1990, with a combined general label model type fuel economy value of less than 22.5 mpg, calculated in accordance with paragraph (a)(2) of this section and rounded to the nearest 0.1 mpg, each vehicle fuel economy label shall include a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act. The tax amount stated shall be as specified in paragraph (b)(2) of this section.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 22.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 21.5 mpg, but less than 22.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,000.

(iii) At least 20.5 mpg, but less than 21.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,300.

(iv) At least 19.5 mpg, but less than 20.5 mpg, the Gas Guzzler Tax statement shall show a tax of $1,700.

(v) At least 18.5 mpg; but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,100.

(vi) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of $2,600.

(vii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,000.

(viii) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of $3,700.

(ix) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of $4,500.

(x) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of $5,400.

(xi) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of $6,400.

(xii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of $7,700.

[56 FR 55465, Oct. 28, 1991, as amended at 59 FR 39661, Aug. 3, 1994]

APPENDIX I TO PART 600—HIGHWAY FUEL ECONOMY DRIVING SCHEDULE (APPLICABLE TO 1978 AND LATER MODEL YEAR AUTOMOBILES)

[SPEED (MPH) VS TIME (SEC)]

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
0	Sample On	50	38.6	100	48.5	150	44.1	200	43.4	250	48.0	300	33.4	350	59.0
1	0.0	51	39.3	101	48.8	151	44.3	201	43.2	251	48.0	301	35.6	351	58.9
2	0.0	52	40.0	102	49.1	152	44.4	202	43.2	252	48.0	302	37.5	352	58.8
3	2.0	53	40.7	103	49.2	153	44.6	203	43.1	253	48.1	303	39.1	353	58.6
4	4.9	54	41.4	104	49.1	154	44.7	204	43.0	254	48.2	304	40.2	354	58.4
5	8.1	55	42.2	105	49.1	155	44.9	205	43.0	255	48.2	305	41.1	355	58.2
6	11.3	56	42.9	106	49.0	156	45.2	206	43.1	256	48.1	306	41.8	356	58.1
7	14.5	57	43.5	107	49.0	157	45.7	207	43.4	257	48.6	307	42.4	357	58.0
8	17.3	58	44.0	108	49.1	158	45.9	208	43.9	258	48.9	308	42.8	358	57.9
9	19.6	59	44.3	109	49.2	159	46.3	209	44.0	259	49.1	309	43.3	359	57.6
10	21.8	60	44.5	110	49.3	160	46.8	210	43.5	260	49.1	310	43.8	360	57.4
11	24.0	61	44.8	111	49.4	161	46.9	211	42.6	261	49.1	311	44.3	361	57.2
12	25.8	62	44.9	112	49.5	162	47.0	212	41.5	262	49.1	312	44.7	362	57.1
13	27.1	63	45.0	113	49.5	163	47.1	213	40.7	263	49.1	313	45.0	363	57.0
14	28.0	64	45.1	114	49.5	164	47.6	214	40.0	264	49.0	314	45.2	364	57.0
15	29.0	65	45.4	115	49.4	165	47.9	215	40.0	265	48.9	315	45.4	365	56.9
16	30.0	66	45.7	116	49.1	166	48.0	216	40.3	266	48.2	316	45.5	366	56.9
17	30.7	67	46.0	117	48.9	167	48.0	217	41.0	267	47.7	317	45.8	367	56.9
18	31.5	68	46.3	118	48.6	168	47.9	218	42.0	268	47.5	318	46.0	368	57.0
19	32.2	69	46.5	119	48.4	169	47.8	219	42.7	269	47.2	319	46.1	369	57.0
20	32.9	70	46.8	120	48.1	170	47.3	220	43.1	270	46.7	320	46.5	370	57.0
21	33.5	71	46.9	121	47.7	171	46.7	221	43.2	271	46.2	321	46.8	371	57.0
22	34.1	72	47.0	122	47.4	172	46.2	222	43.4	272	46.0	322	47.1	372	57.0
23	34.6	73	47.1	123	47.3	173	45.9	223	43.9	273	45.8	323	47.7	373	57.0
24	34.9	74	47.2	124	47.5	174	45.7	224	44.3	274	45.6	324	48.3	374	57.0
25	35.1	75	47.3	125	47.8	175	45.5	225	44.7	275	45.4	325	49.0	375	57.0
26	35.7	76	47.2	126	47.9	176	45.4	226	45.1	276	45.2	326	49.7	376	57.0
27	35.9	77	47.1	127	48.0	177	45.3	227	45.4	277	45.0	327	50.3	377	56.9
28	35.8	78	47.0	128	47.9	178	45.0	228	45.8	278	44.7	328	51.0	378	56.8
29	35.3	79	46.9	129	47.9	179	44.0	229	46.5	279	44.5	329	51.7	379	56.5
30	34.9	80	46.9	130	47.9	180	43.1	230	46.9	280	44.2	330	52.4	380	56.2
31	34.5	81	46.9	131	48.0	181	42.2	231	47.2	281	43.5	331	53.1	381	56.0
32	34.6	82	47.0	132	48.0	182	41.5	232	47.4	282	42.8	332	53.8	382	56.0
33	34.8	83	47.1	133	48.0	183	41.5	233	47.3	283	42.0	333	54.5	383	56.0
34	35.1	84	47.1	134	47.9	184	42.1	234	47.3	284	40.1	334	55.2	384	56.1
35	35.7	85	47.2	135	47.3	185	42.9	235	47.2	285	38.6	335	55.8	385	56.4
36	36.1	86	47.1	136	46.0	186	43.5	236	47.2	286	37.5	336	56.4	386	56.7
37	36.2	87	47.0	137	43.3	187	43.9	237	47.2	287	35.8	337	56.9	387	56.9
38	36.5	88	46.9	138	41.2	188	43.6	238	47.1	288	34.7	338	57.0	388	57.1
39	36.7	89	46.5	139	39.5	189	43.3	239	47.0	289	34.0	339	57.1	389	57.3
40	36.9	90	46.3	140	39.2	190	43.0	240	47.0	290	33.3	340	57.3	390	57.4
41	37.0	91	46.2	141	39.0	191	43.1	241	46.9	291	32.5	341	57.6	391	57.4
42	37.0	92	46.3	142	39.0	192	43.4	242	46.8	292	31.7	342	57.8	392	57.2
43	37.0	93	46.5	143	39.1	193	43.9	243	46.9	293	30.6	343	58.0	393	57.0
44	37.0	94	46.9	144	39.5	194	44.3	244	47.0	294	29.6	344	58.1	394	56.9
45	37.0	95	47.1	145	40.1	195	44.6	245	47.2	295	28.8	345	58.4	395	56.6

APPENDIX I TO PART 600—HIGHWAY FUEL ECONOMY DRIVING SCHEDULE (APPLICABLE TO 1978 AND LATER MODEL YEAR AUTOMOBILES)—Continued

[SPEED (MPH) VS TIME (SEC)]

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
46	37.0	96	47.4	146	41.0	196	44.9	246	47.5	296	28.4	346	58.7	396	56.3
47	37.1	97	47.7	147	42.0	197	44.8	247	47.9	297	28.6	347	58.8	397	56.1
48	37.3	98	48.0	148	43.1	198	44.4	248	48.0	298	29.5	348	58.9	398	56.4
49	37.8	99	48.2	149	43.7	199	43.9	249	48.0	299	31.4	349	59.0	399	56.7

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
400	57.1	450	58.2	500	54.7	550	55.8	600	48.3	650	50.2	700	54.2	750	26.8
401	57.5	451	58.1	501	54.6	551	55.6	601	48.0	651	50.7	701	54.5	751	24.5
402	57.8	452	58.0	502	54.4	552	55.4	602	47.9	652	51.1	702	54.8	752	21.5
403	58.0	453	58.0	503	54.3	553	55.2	603	47.8	653	51.7	703	55.0	753	19.5
404	58.0	454	58.0	504	54.3	554	55.1	604	47.7	654	52.2	704	55.5	754	17.4
405	58.0	455	58.0	505	54.2	555	55.0	605	47.9	655	52.5	705	55.9	755	15.1
406	58.0	456	58.0	506	54.1	556	54.9	606	48.3	656	52.1	706	56.1	756	12.4
407	58.0	457	58.0	507	54.1	557	54.6	607	49.0	657	51.6	707	56.3	757	9.7
408	58.0	458	57.9	508	54.1	558	54.4	608	49.1	658	51.1	708	56.4	758	7.0
409	57.9	459	57.9	509	54.0	559	54.2	609	49.0	659	51.0	709	56.5	759	5.0
410	57.8	460	58.0	510	54.0	560	54.1	610	48.9	660	51.0	710	56.7	760	3.3
411	57.7	461	58.1	511	54.0	561	53.8	611	48.0	661	51.1	711	56.9	761	2.0
412	57.7	462	58.1	512	54.0	562	53.4	612	47.1	662	51.4	712	57.0	762	0.7
413	57.8	463	58.2	513	54.0	563	53.3	613	46.2	663	51.7	713	57.3	763	0.0
414	57.9	464	58.3	514	54.0	564	53.1	614	46.1	664	52.0	714	57.7	764	0.0
415	58.0	465	58.3	515	54.0	565	52.9	615	46.1	665	52.2	715	58.2	765	Sample Off
416	58.1	446	58.3	516	54.0	566	52.6	616	46.2	666	52.5	716	58.8		
417	58.4	467	58.2	517	54.1	567	52.4	617	46.9	667	52.8	717	59.1		
418	58.9	468	58.1	518	54.2	568	52.2	618	47.8	668	52.7	718	59.2		
419	59.1	469	58.0	519	54.5	569	52.1	619	49.0	669	52.6	719	59.1		
420	59.4	470	57.8	520	54.8	570	52.0	620	49.7	670	52.3	720	58.8		
421	59.8	471	57.5	521	54.9	571	52.0	621	50.6	671	52.3	721	58.5		
422	59.9	472	57.1	522	55.0	572	52.0	622	51.5	672	52.4	722	58.1		
423	59.9	473	57.0	523	55.1	573	52.0	623	52.2	673	52.5	723	57.7		
424	59.8	474	56.6	524	55.2	574	52.1	624	52.7	674	52.7	724	57.3		
425	59.6	475	56.1	525	55.2	575	52.0	625	53.0	675	52.7	725	57.1		
426	59.4	476	56.0	526	55.3	576	52.0	626	53.6	676	52.4	726	56.8		
427	59.2	477	55.8	527	55.4	577	51.9	627	54.0	677	52.1	727	56.5		
428	59.1	478	55.5	528	55.5	578	51.6	628	54.1	678	51.7	728	56.2		
429	59.0	479	55.2	529	55.6	579	51.4	629	54.4	679	51.1	729	55.5		
430	58.9	480	55.1	530	55.7	580	51.1	630	54.7	680	50.5	730	54.6		
431	58.7	481	55.0	531	55.8	581	50.7	631	55.1	681	50.1	731	54.1		
432	58.6	482	54.9	532	55.9	582	50.3	632	55.4	682	49.8	732	53.7		
433	58.5	483	54.9	533	56.0	583	49.8	633	55.4	683	49.7	733	53.2		
434	58.4	484	54.9	534	56.0	584	49.3	634	55.0	684	49.6	734	52.9		
435	58.4	485	54.9	535	56.0	585	48.7	635	54.5	685	49.5	735	52.5		
436	58.3	486	54.9	536	56.0	586	48.2	6.36	53.6	686	49.5	736	52.0		
437	58.2	487	54.9	537	56.0	587	48.1	637	52.5	687	49.7	737	51.3		
438	58.1	488	55.0	538	56.0	588	48.0	638	50.2	688	50.0	738	50.5		
439	58.0	489	55.0	539	56.0	589	48.0	6.39	48.2	689	50.2	739	49.5		
440	57.9	490	55.0	540	56.0	590	48.1	640	46.5	690	50.6	740	48.5		
441	57.9	491	55.0	541	56.0	591	48.4	641	46.2	691	51.1	741	47.6		
442	57.9	492	55.0	542	56.0	592	48.9	642	46.0	692	51.6	742	46.8		
443	57.9	493	55.0	543	56.0	593	49.0	643	46.0	693	51.9	743	45.6		
444	57.9	494	55.1	544	56.0	594	49.1	644	46.3	694	52.0	744	44.2		
445	58.0	495	55.1	545	56.0	595	49.1	645	46.8	695	52.1	745	42.5		
446	58.1	496	55.0	546	56.0	596	49.0	646	47.5	696	52.4	746	39.2		
447	58.1	497	54.9	547	55.9	597	49.0	647	48.2	697	52.9	747	35.9		
448	58.2	498	54.9	548	55.9	598	48.9	648	48.8	698	53.3	748	32.6		
449	58.2	499	54.8	549	55.9	599	48.6	649	49.5	699	53.7	749	29.3		

[42 FR 45667, Sept. 12, 1977]

APPENDIX II TO PART 600—SAMPLE FUEL ECONOMY CALCULATIONS

(a) This sample fuel economy calculation is applicable to 1978 through 1987 model year automobiles.

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

HC=.139 grams/mile
CO=1.59 grams/mile
CO_2=317 grams/mile

According to the procedure in §600.113–78, the city fuel economy or MPG_c, for the vehicle may be calculated by substituting the HC, CO, and CO_2 grams/mile values into the following equation.

$$MPG_c = \frac{2421}{(0.866 \times HC) + (0.429 \times CO) + (0.273 \times CO_2)}$$

$$MPG_c = \frac{2421}{(0.866 \times 1.39) + (0.429 \times 1.59) + (0.273 \times 317)}$$

MPG_c=27.7

(2) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and calculation similar to that shown in paragraph (a) by this appendix resulted in a highway fuel economy or MPG_h of 36.9. According to the procedure in §600.113, the combined fuel economy (called $MPG_{c/h}$) for the vehicle may be calculated by substituting the city and highway fuel economy values into the following equation:

$$MPG_{c/h} = \frac{1}{\frac{0.55}{MPG_c} + \frac{0.45}{MPG_h}}$$

$$MPG_{c/h} = \frac{1}{\frac{0.55}{27.7} + \frac{0.45}{36.9}}$$

$$MPG_{c/h} = 31.2$$

(b) This sample fuel economy calculation is applicable to 1988 and later model year automobiles.

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

HC=.139 grams/mile
CO=1.59 grams/mile
CO_2=317 grams/mile

(2) Assume that the test fuel used for this test had the following properties:

SG=0.745
CWF=0.868
NHV=18,478 Btu/lb.

(3) According to the procedure in §600.113–88, the city fuel economy or MPG_c, for the vehicle may be calculated by substituting the HC, CO, and CO_2 gram/mile values and the SG, CWF, and NHV values into the following equation:

$MPG_c = (5174 \times 10^4 \times CWF \times SG) / [((CWF \times HC) + (0.429 \times CO + (0.273 \times CO_2)) ((0.6 \times SG \times NHV) + 5471)]$

$MPG_c = (5174 \times 10^4 \times 0.868 \times 0.745) / [(0.868 \times .139 + 0.429 \times 1.59 + 0.273 \times 317)(0.6 \times 0.745 \times 18478 + 5471)]$

MPG_c=27.9

(4) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and a calculation similar to that shown in (b)(3) resulted in a highway fuel economy of MPG_h of 36.9. According to the procedure in §600.113, the combined fuel economy (called $MPG_{c/h}$) for the vehicle may be calculated by substituting the city and highway fuel economy values into the following equation:

$$MPG_{c/h} = \frac{1}{\frac{0.55}{MPG_c} + \frac{0.45}{MPG_h}}$$

$$MPG_{c/h} = \frac{1}{\frac{0.55}{27.9} + \frac{0.45}{36.9}}$$

$$MPG_{c/h} = 31.3$$

[51 FR 37852, Oct. 24, 1986]

APPENDIX III TO PART 600—SAMPLE FUEL ECONOMY LABEL CALCULATION (1977 MODEL YEAR)

Suppose that a manufacturer called Mizer Motors has a product line composed of eight car lines. Of these eight, four are available with the 300 CID, 2 barrel, non-catalyst, 49-state engine. These four car lines are:

Ajax
Boredom III
Dodo
Castor (Station Wagon)

A car line is defined in subpart A as a group of vehicles within a make or division which has a degree of commonality in construction. Car line does not consider any level of decor or opulence and is not generally distinguished by such characteristics as roofline, number of doors, seats, or windows. Station wagons and light duty trucks are, however, identified separately from the remainder of each car line. In other words, a Castor station wagon would be considered a different car line than the normal Castor car line made up of sedans, coupes, etc.

The engine considered here is defined as a basic engine in subpart A of this part. A basic engine is a unique combination of fuel system, number of cylinders, catalyst usage, and engine displacement.

A model type is a unique combination of car line, basic engine, and transmission class. Thus Ajax is a car line but Ajax 300–2V noncatalyst, 49-state, manual transmission is a model type whereas Ajax 300–2V non-catalyst, 49-state, automatic transmission is a different model type.

The following calculations provide an example of the procedures described in subpart C of this part for the calculation of vehicle configuration and model type fuel economy values. In order to simplify the presentation, only city fuel economy values are included. The procedure is identical for highway and combined fuel economy values.

Step I. *Input data as supplied by the manufacturer or as determined from testing conducted by the Administrator.*

Manufacturer—Mizer Motors.
Basic Engine: (300–2 barrel, 8–cylinder, non-catalyst, 49 state).

Test vehicle carline	Engine code	Transmission	Inertia weight	Axle ratio	Average miles per gallon	Label miles per gallon [1]	Vehicle configuration sales
Ajax	1	M–3	3,500	2.73	16.1001	16	15,000
Do	2	A–3	3,500	2.56	15.9020	16	35,000
Boredom III	4	M–3	4,000	3.08	14.2343	14	10,000
Ajax	3	M–4	4,000	3.36	15.0000	15	15,000
Boredom III	8	A–3	4,000	2.56	13.8138	14	25,000
Do	5	A–3	4,500	3.08	13.2203	13	20,000
Castor	5	A–3	5,000	3.08	10.6006	11	40,000

[1] The vehicle configuration fuel economy values, rounded to the nearest mile per gallon, are the fuel economy values that would be used on specific labels for that vehicle configuration.

Step II. *Group vehicle fuel economy and sales data according to base level combinations within this basic engine.*

	Transmission	Inertia weight	Miles per gallon	Projected vehicle configuration sales
Base level:				
A	Manual–3	3,500	16.1001	15,000
B	Automatic	3,500	15.9020	35,000
C	Manual–3	4,000	14.2343	10,000
C	Manual–4	4,000	15.0000	15,000
D	Automatic	4,000	13.8138	25,000
E	.....do	4,500	13.2203	20,000
F	.....do	5,000	10.6006	40,000

Step III. *Determine base level fuel economy values.*

A. For all the base levels except the base level which includes 4,000 pound, manual transmission data, the base level fuel economy is as noted in Step II since only one vehicle configuration was tested within each of these base levels.

	Miles per gallon
3,500 lb/manual transmission	16.1001
3,500 lb/automatic transmission	15.9020
4,000 lb/automatic transmission	13.8138
4,500 lb/automatic transmission	13.2203
5,000 lb/automatic transmission	10.6006

B. Since data from more than one vehicle configuration are included in the 4,000-pound, manual transmission base level, this fuel economy is harmonically averaged in proportion to the percentage of total sales of all vehicle configurations tested within that base level represented by each vehicle configuration tested within that base level.

$$\text{Base level fuel econ.} = \frac{1}{\left[\begin{array}{c}\text{Fraction of total}\\ \text{sales of configu-}\\ \text{rations tested}\\ \text{represented by}\\ \text{configuration}\\ \text{No. 1 sales}\end{array}\right]\left[\begin{array}{c}1\\ \hline \text{Configuration}\\ \text{No. 1 fuel}\\ \text{economy}\end{array}\right]+\left[\begin{array}{c}\text{Fraction of total}\\ \text{sales of configu-}\\ \text{rations tested}\\ \text{represented by}\\ \text{configuration}\\ \text{No. 2 sales}\end{array}\right]\left[\begin{array}{c}1\\ \hline \text{Configuration}\\ \text{No. 2 fuel}\\ \text{economy}\end{array}\right]} + \cdots$$

Base Level: Manual, 4,000 pounds.

$$\frac{1}{\left[\frac{10000}{25000}\right]\frac{1}{14.2343}+\left[\frac{15.000}{250000}\right]\frac{1}{15.0000}} = 14.6840 \text{ mi/gal}$$

Therefore, the 4,000 pound/manual transmission fuel economy is 14.6840 mi/gal.

4,000 pound/manual transmission = 14.6840 mi/gal

Note that the car line of the test vehicle using a given engine makes no difference—only the weight and transmission do.

Step IV. *For each model type offered by the manufacturer with that basic engine, determine the sales fraction represented by each inertia weight/transmission class combination and the corresponding fuel economy.*

Ajax:		
Manual	1.0000 at 3,500 lb	16.1001
Automatic	0.3000 at 3,500 lb	15.9020
	0.7000 at 4,000 lb	13.8138
Dodo:		
Manual	0.4000 at 3,500 lb	16.1001
	0.6000 at 4,000 lb	14.6840
Automatic	0.3000 at 3,500 lb	15.9020
	0.7000 at 4,000 lb	13.8138
Boredom III:		
Manual	1.0000 at 4,000 lb	14.6840
Automatic	0.2500 at 4,000 lb	13.8138
	0.7500 at 4,500 lb	13.2203

Castor:		
Automatic	0.2000 at 4,500 lb	13.2203
	0.8000 at 5,000 lb	10.6006

Step V. *Determine fuel economy for each model type (that is, car line/basic engine/transmission class combination).*

Ajax, 300–2 barrel, automatic, MPG=

$$\text{Ajax, 300-2 barrel, automatic, MPG} = \frac{1}{\dfrac{\text{The fraction of Ajax vehicles using the 300-2 bbl, engine which fall in the 3,500 lb inertia weight class with an automatic transmission.}}{\text{Fuel economy for 300-2 bbl, 3,500 lb automatic transmission base level.}} + \dfrac{\text{The fraction of Ajax vehicles using the 300-2 bbl, engine which fall in the 4,000 lb inertia weight class with an automatic transmission.}}{\text{Fuel economy for 300-2 bbl, 4,000 lb automatic transmission base level.}}} = \frac{1}{14.3803}$$

$$\frac{1}{\dfrac{0.3000}{15.9020} + \dfrac{0.7000}{13.8138}}$$

Similarly,

Ajax, 300-2 barrel, manual MPG=16.1 16 MPG [1]

$$\text{Dodo, 300-2 barrel, manual MPG} = \frac{1}{\dfrac{0.4000}{16.1001} + \dfrac{0.6000}{14.6840}} = 15.2185,\ 15\ \text{mi/gal}^{1}$$

$$\text{Dodo, 300-2 barrel, automatic MPG} = \frac{1}{\dfrac{0.3000}{15.9020} + \dfrac{0.7000}{13.8138}} = 14.3803,\ 14\ \text{mi/gal}^{1}$$

Boredom III, 300-2 barrel, manual MPG=14.6840, 15 mi/gal[1]

$$\text{Boredom III, 300-2 barrel, automatic MPG} = \frac{1}{\dfrac{0.2500}{13.8138} + \dfrac{0.7500}{13.2203}} = 13.3638,\ 13\ \text{mi/gal}^{1}$$

$$\text{Castor, 300-2 barrel, automatic MPG} = \frac{1}{\dfrac{0.2000}{13.2203} + \dfrac{0.8000}{10.6006}} = 11.0381,\ 11\ \text{mi/gal}^{1}$$

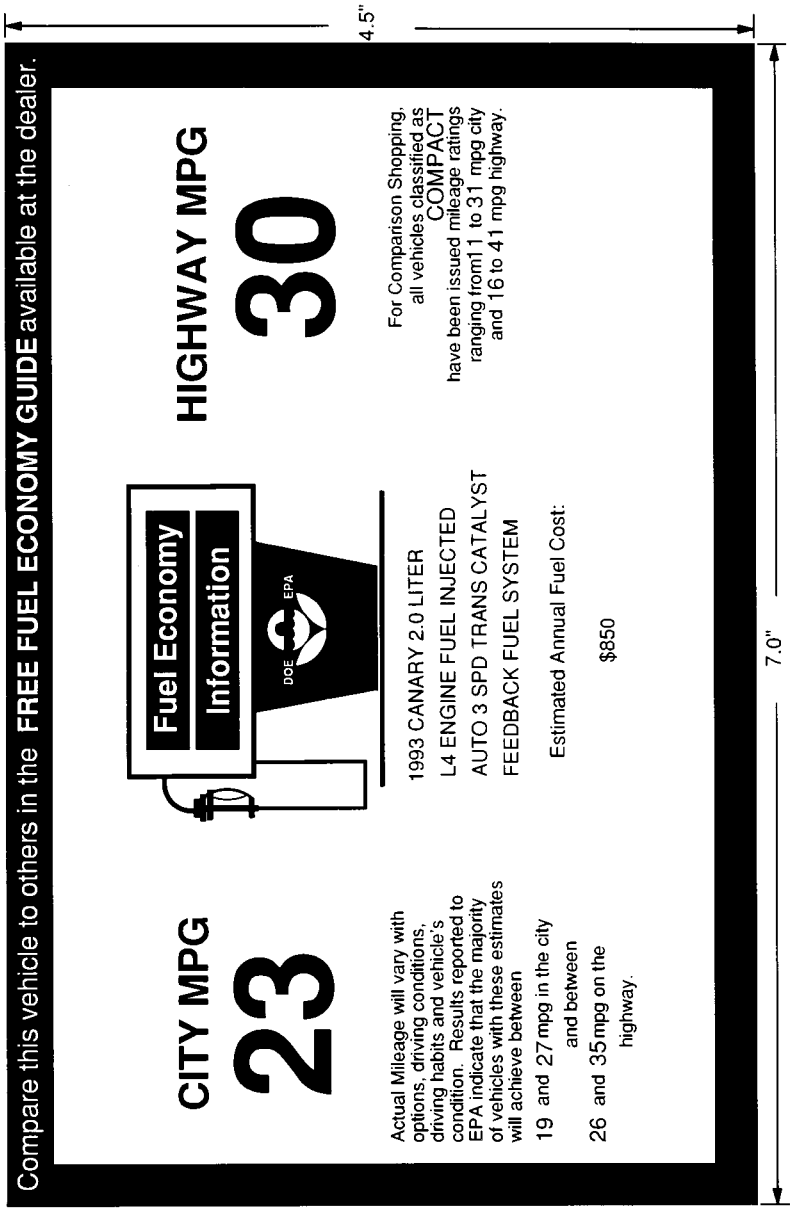
Note that even though no Dodo was actually tested, this approach permits its fuel economy figure to be estimated, based on the inertia weight distribution of projected Dodo sales within a specific engine and transmission grouping.

[1] The model type fuel economy values, rounded to the nearest mile per gallon, are the fuel economy values as used on general labels for that model year.

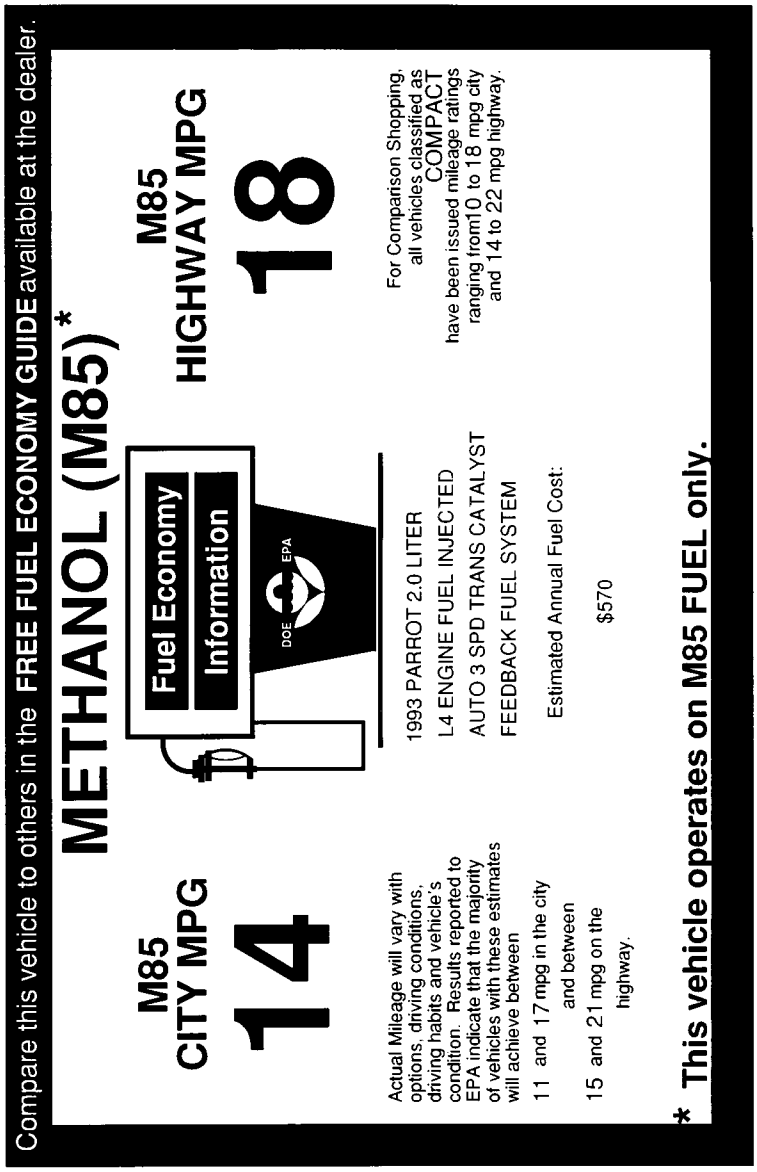
[41 FR 49766, Nov. 10, 1976]

APPENDICES IV—VII [RESERVED]

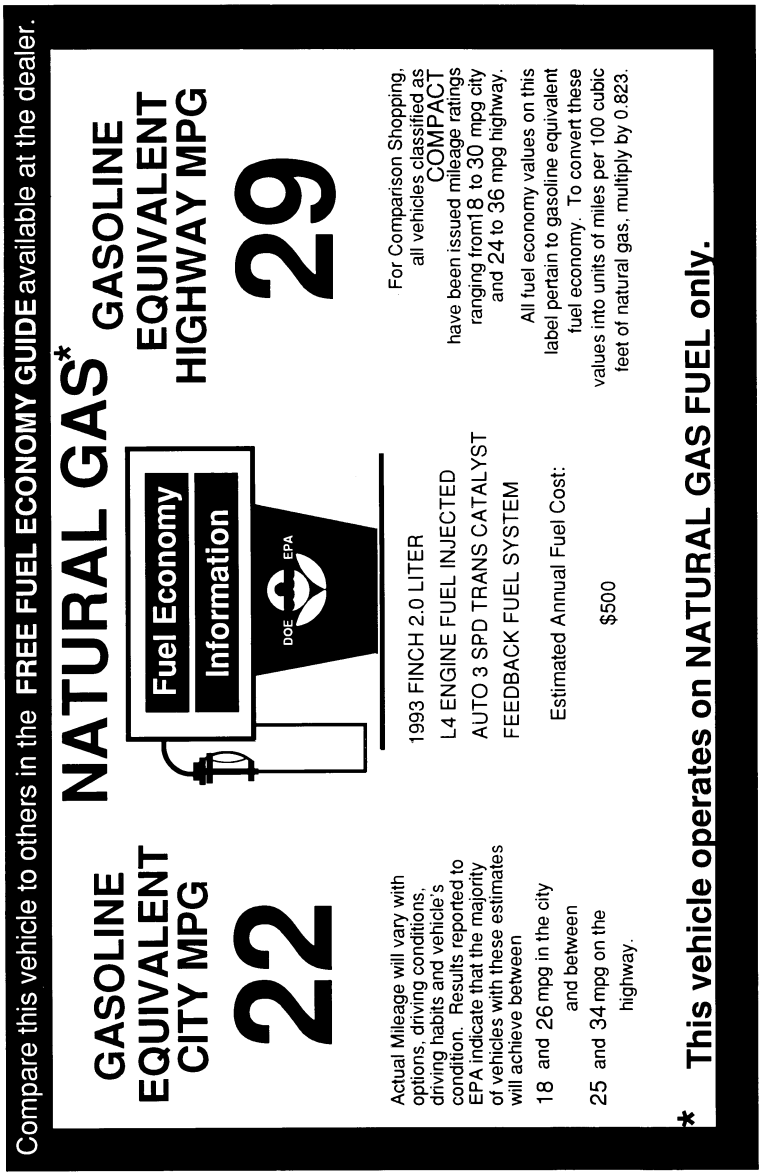
APPENDIX VIII TO PART 600—FUEL ECONOMY LABEL FORMATS



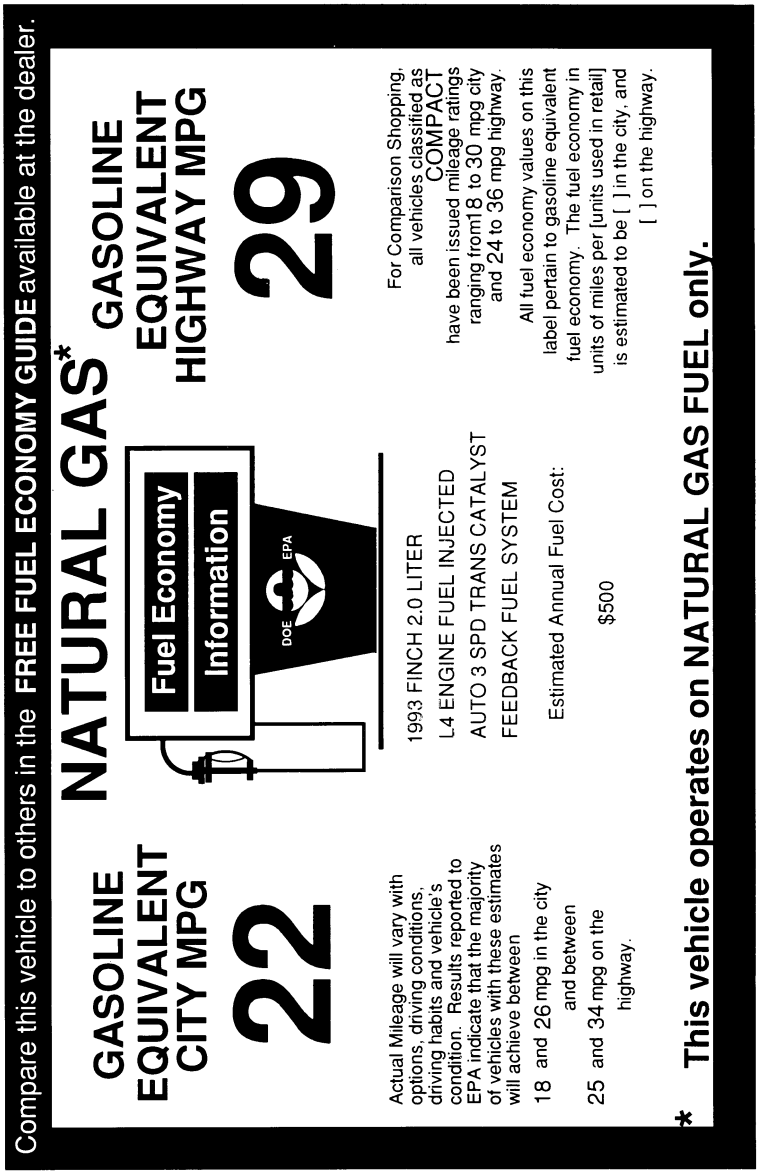
a. Gasoline-fueled vehicle label



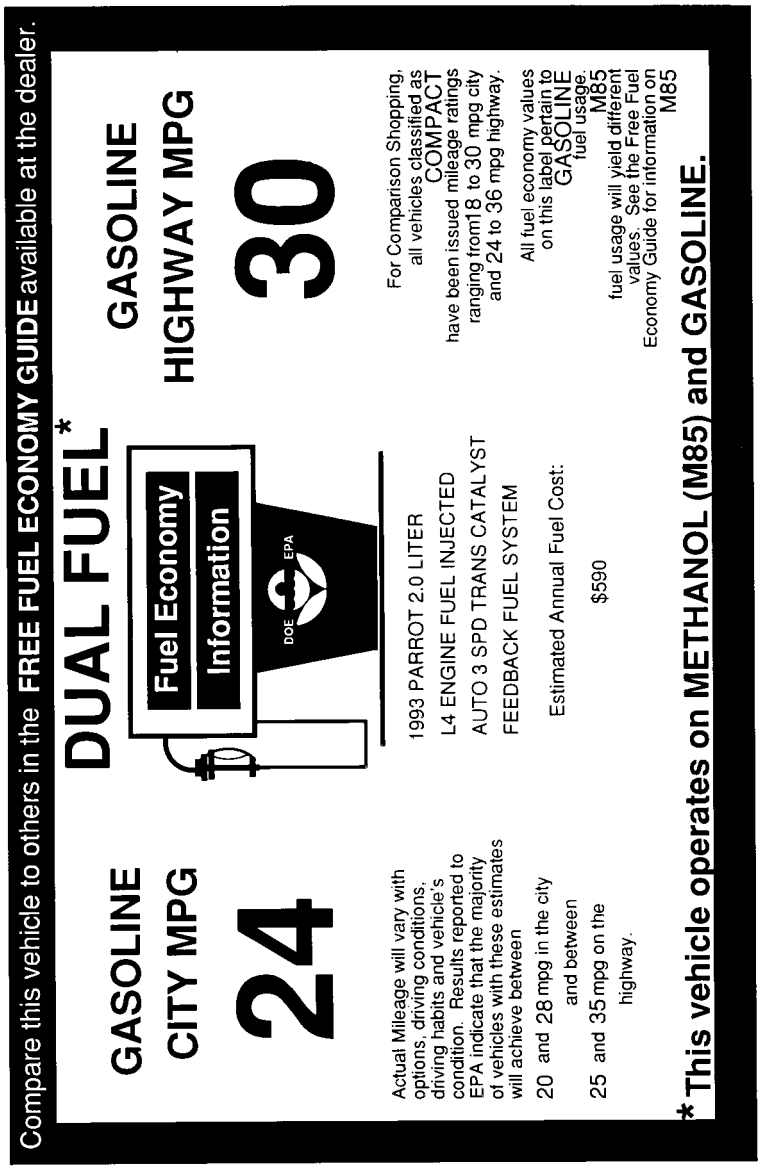
b. Dedicated M85-fueled vehicle label



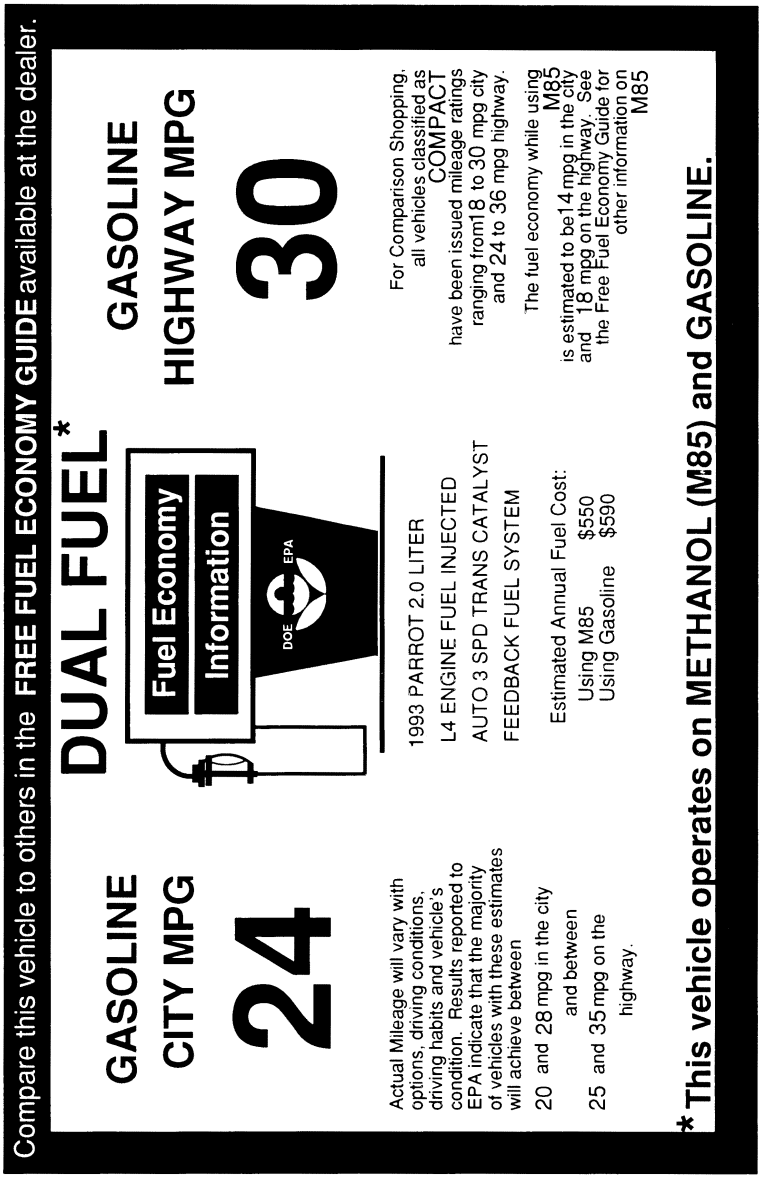
c. Dedicated natural gas-fueled vehicle label



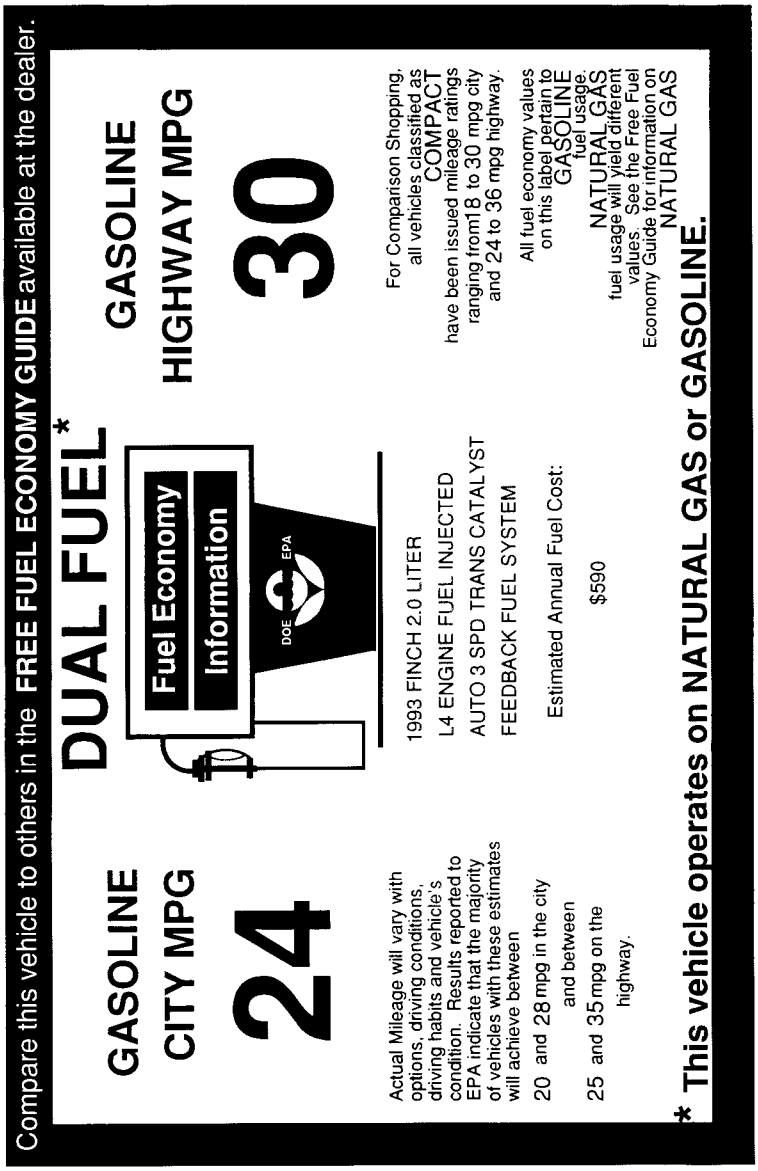
d. Dedicated natural gas-fueled vehicle label - optional



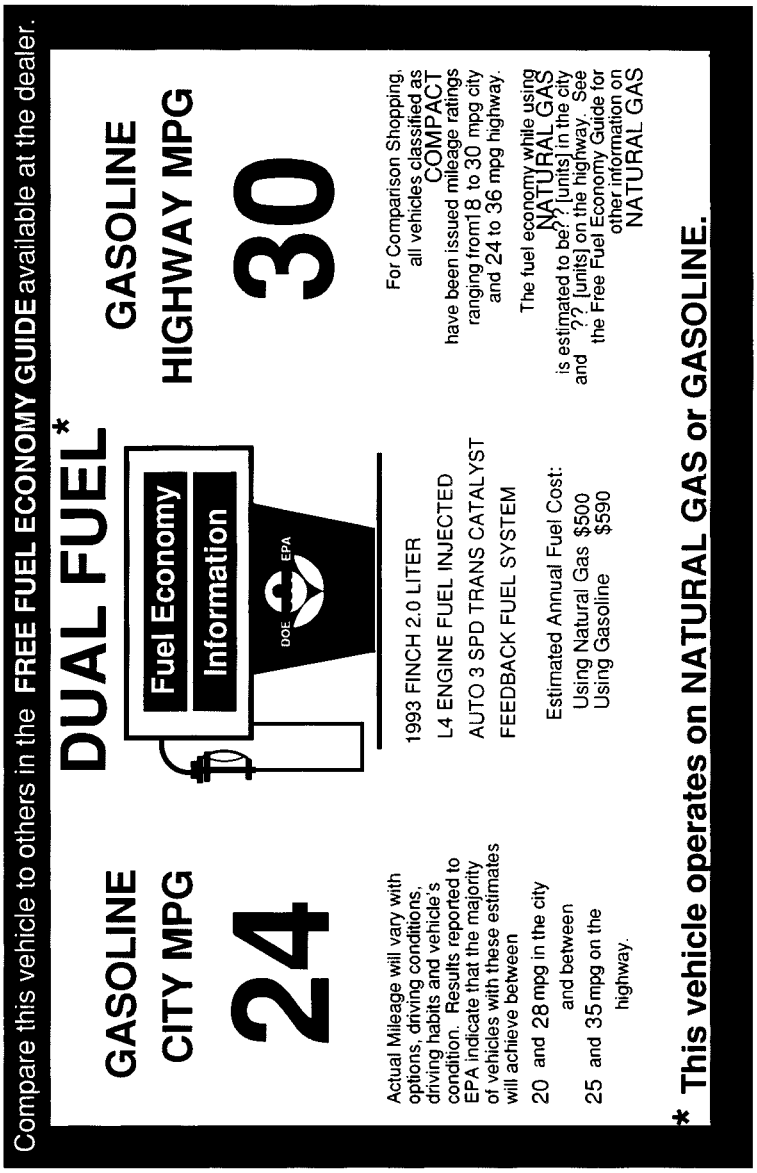
e. Methanol dual fuel vehicle label



f. Methanol dual fuel vehicle label - optional



g. Natural gas dual fuel vehicle label



h. Natural gas dual fuel vehicle label - optional

[59 FR 39661, Aug. 3, 1994]

PART 610—FUEL ECONOMY RETROFIT DEVICES

TEST PROCEDURES AND EVALUATION CRITERIA

Subpart A—General Provisions

Sec.
610.10 Program purpose.
610.11 Definitions.
610.12 Program initiative.
610.13 Program structure.
610.14 Payment of program costs.
610.15 Eligibility for participation.
610.16 Applicant's responsibilities.
610.17 Application format.

Subpart B—Evaluation Criteria for the Preliminary Analysis

610.20 General.
610.21 Device functional category and vehicle system effects.
610.22 Device integrity.
610.23 Operator interaction effects.
610.24 Validity of test data.
610.25 Evaluation of test data.

Subpart C—Test Requirement Criteria

610.30 General.
610.31 Vehicle tests for fuel economy and exhaust emissions.
610.32 Test fleet selection.
610.33 Durability tests.
610.34 Special test conditions.
610.35 Driveability and performance tests.

Subpart D—General Vehicle Test Procedures

610.40 General.
610.41 Test configurations.
610.42 Fuel economy measurement.
610.43 Chassis dynamometer procedures.

Subpart E—Durability Test Procedures

610.50 Test configurations.
610.51 Mileage accumulation procedure.
610.52 Maintenance.

Subpart F—Special Test Procedures

610.60 Non-standard ambient conditions.
610.61 Engine dynamometer tests.
610.62 Driveability tests.
610.63 Performance tests.
610.64 Track test procedures.
610.65 Other test procedures.

AUTHORITY: Sec. 511, Motor Vehicle Information and Cost Savings Act, as amended (sec. 301, Pub. L. 94–163, 89 Stat. 915 (15 U.S.C. 2011)).

SOURCE: 44 FR 17946, Mar. 23, 1979, unless otherwise noted.

TEST PROCEDURES AND EVALUATION CRITERIA

Subpart A—General Provisions

§610.10 Program purpose.

(a) The purpose of an evaluation program initiated under these rules is to determine, in accordance with standardized procedures, the performance of various retrofit devices applicable to automobiles for which fuel economy improvement claims are made, and to compile and disseminate the results of the evaluation. It should be stressed that the role of this program will be the generation, analysis and dissemination of technical data, and not the approval or certification of retrofit devices.

(1) Through engineering or statistical analysis of data from vehicle tests, the evaluation program will determine the effects on fuel economy, exhaust emissions, durability and driveability of the applicable vehicles due to the installation or use of the devices. The evaluation program will also include additional procedures, whenever determined by the Administrator as necessary, to evaluate the durability of the devices themselves, their effects on vehicle durability or other effects only evident over the course of extended mileage accumulation.

(b) Data generated in an evaluation program by the Administrator of the Environmental Protection Agency (EPA) are public information and will be published in the FEDERAL REGISTER and elsewhere for use by the Federal Trade Commission and the public. The results of any evaluation conducted by the Administrator may be used in any subsequent investigation or enforcement action in the event that a device is marketed in violation of Federal or state law.

§610.11 Definitions.

(a) Except as specifically defined below, all terms used in this part which are defined in 40 CFR part 86 or 40 CFR part 600 shall have the meanings provided therein.

(1) ''Retrofit device'' or ''device'' means:

(i) Any component, equipment, or other device (except a flow measuring

instrument or other driving aid, or lubricant or lubricant additive) which is designed to be installed in or on an automobile as an addition to, as a replacement for, or through alteration or modification of, any original component, or other devices; or

(ii) Any fuel additive which is to be added to the fuel supply of an automobile by means other than fuel dispenser pumps; and

(iii) Which any manufacturer, dealer, or distributor of such device represents will provide higher fuel economy than would have resulted with the automobile as originally equipped, as determined under rules of the Administrator.

(2) ''Automobile'' means any four-wheeled vehicle propelled by fuel which is manufactured primarily for use on public streets, roads, and highways (except any vehicle operated exclusively on a rail or rails), and which is rated at 6,000 lbs. gross vehicle weight or less.

(3) ''Fuel economy'' means the average number of miles traveled by an automobile per gallon of gasoline (or equivalent amount of other fuel) consumed, as determined by the Administrator in accordance with procedures established under subpart D or F.

(4) ''Manufacturer'' means a person or company which is engaged in the business of producing or assembling, and which has primary control over the design specifications, of a retrofit device for which a fuel economy improvement claim is made.

(5) ''Retrofit'' means the addition of a new item, modification or removal of an existing item of equipment beyond that of regular maintenance, on an automobile after its initial manufacture.

(6) ''Federal Test Procedure'' or ''City Fuel Economy Test'' means the test procedures specified in 40 CFR part 86, except as those procedures are modified in these protocols.

(7) ''Highway Fuel Economy Test'' means the test procedure described in § 600.111(b).

(8) ''Operator'' means any person who installs, services or maintains a retrofit device in an automobile or who operates an automobile with a retrofit device installed.

(9) ''Device integrity'' means the durability of a device and effect of its malfunction on vehicle safety or other parts of the vehicle system.

(10) ''Test data'' means any information which is a quantitative measure of any aspect of the behavior of a retrofit device.

(11) ''Testing agent'' means any person who develops test data on a retrofit device.

(12) ''Preconditioning'' means the operation of an automobile through one (1) EPA Urban Dynamometer Driving Schedule, described in 40 CFR part 86.

(13) ''Configuration'' means the mechanical arrangement, calibration and condition of a test automobile, with particular respect to carburetion, ignition timing, and emission control systems.

(14) ''Baseline configuration'' means the unretrofitted test configuration, tuned in accordance with the automobile manufacturer's specifications.

(15) ''Adjusted configuration'' means the test configuration after adjustment of engine calibrations to the retrofit specifications, but excluding retrofit hardware installation.

(16) ''Retrofitted configuration'' means the test configuration after adjustment of engine calibrations to the retrofit specifications *and* after all retrofit hardware has been installed.

(17) ''Data fleet'' means a fleet of automobiles tested at ''zero device-miles'' in ''baseline configuration,'' the ''retrofitted configuration'' and in some cases the ''adjusted configuration,'' in order to determine the changes in fuel economy and exhaust emissions due to the ''retrofitted configuration,'' and where applicable the changes due to the ''adjusted configuration,'' as compared to the fuel economy and exhaust emissions of the ''baseline configuration.''

(18) ''Durability fleet'' means a fleet of automobiles operated for mileage accumulation used to assess deterioration effects associated with the retrofit device.

(19) ''Zero device-miles'' means the period of time between retrofit installation and the accumulation of 100 miles of automobile operation after installation.

(20) ''Independent laboratory'' means a test facility operated independently of any motor vehicle, motor vehicle engine, or retrofit device manufacturer capable of performing retrofit device evaluation tests. Additionally, the laboratory shall have no financial interests in the outcome of these tests other than a fee charged for each test performed.

(21) ''Evaluation program'' or ''program'' means the sequence of analyses and tests prescribed by the Administrator as described in §610.13 in order to evaluate the performance of a retrofit device.

(22) ''Preliminary analysis'' means the engineering analysis performed by EPA prior to testing prescribed by the Administrator based on data and information submitted by a manufacturer or available from other sources.

[44 FR 17946, Mar. 23, 1979, as amended at 49 FR 18489, May 1, 1984]

§610.12 Program initiative.

A retrofit device evaluation program will be initiated as follows:

(a) At the request of the Federal Trade Commission (FTC) when it has reason to believe that fuel economy representation made for a retrofit device being marketed may be inadequate,

(b) At the EPA Administrator's initiative, or

(c) Upon the application of any manufacturer of a retrofit device (or prototype thereof) for which a fuel economy improvement claim is made.

§610.13 Program structure.

(a) Each device evaluation program will consist of up to three phases:

(1) A preliminary analysis of available information and test data on the device to be performed by the EPA Administrator;

(2) Designing and conducting of a sequence of tests to determine device effectiveness if considered necessary by virtue of the Administrator's preliminary analysis; and

(3) Publication in the FEDERAL REGISTER, and submission to the Department of Transportation and to the Federal Trade Commission, of a summary of the results of any tests conducted under subparts C through F, or if none were conducted, then a summary of the results of the preliminary analysis conducted under subpart B; together with the Administrator's conclusions as to the effect of the tested retrofit device on fuel economy and exhaust emissions, and as to any other information that the Administrator determines is relevant in evaluating such device.

(b) Each of the above phases may, as appropriate, include the use of statistically valid sample sizes and statistical evaluation of measured results.

§610.14 Payment of program costs.

(a) All costs incurred in an evaluation program initiated at the request of the FTC or at the Administrator's initiative, including the cost of purchasing any necessary quantity of the device under evaluation, will be borne by the United States.

(b) For those evaluation programs initiated at the request of a manufacturer of a retrofit device, should the Administrator test the device, or cause the device to be tested, as part of the evaluation, then that manufacturer shall supply, at his own expense, one or more samples of the device to the Administrator and shall be liable for the costs of testing which are incurrred by the Administrator. The manufacturer shall also be liable for the cost of any preliminary testing at an independent testing laboratory performed as part of the evaluation program. Apart from the costs of testing a device, EPA shall be responsible for costs of formulating its engineering evaluation of a device.

[44 FR 17946, Mar. 23, 1979, as amended at 49 FR 18838, May 3, 1984]

§610.15 Eligibility for participation.

Participation in an evaluation program initiated under §610.12(c) will be available to any person or company who agrees to follow the procedures set forth in these protocols. Failure to conform to any aspect of these protocols, without the approval of the Adminstrator, may be interpreted as withdrawal from participation in the program.

§610.16 Applicant's responsibilities.

Each applicant for evaluation under §610.12(c) will be responsible for the following:

(a) Submission of an application, in the format specified by the Administrator, prior to initiation of the evaluation. A separate application shall be made for each different device. The application shall be made to the Administrator (or his delegate) by the manufacturer and shall be updated and corrected by amendment if deemed necessary by EPA.

(b) The application shall be in writing, signed by an authorized representative of the manufacturer, and shall include the following:

(1) Identification and description of the device covered by the application, including drawings, schematics and information on the theory of operation.

(2) Vehicles or engines to which the device is applicable and a description of the types of vehicles or engines to which it is not applicable, e.g., would not provide a benefit, a benefit less than claimed for the device in general, or would result in a safety hazard or damage to the engine. If the reason for inapplicability is safety or damage related, this must be explained as required by paragraph (b)(7) of this section.

(3) Installation or usage instructions, including degree of knowledge required by persons making the installation and the tools and equipment required.

(4) A statement of recommended maintenance, degree of knowledge required for that maintenance, and the tools and equipment required to perform the maintenance.

(5) All data regarding exhaust emissions regulated by EPA under §202 of the Clean Air Act and fuel economy test data on the device or product available to the applicant.

(6) All information available to the applicant concerning whether the device in its operation, function, or malfunction may cause an automobile using that device to emit into the ambient air any substance other than pollutants regulated by EPA under section 202 of the Clean Air Act (i.e., hydrocarbons, carbon monoxide, and oxides of nitrogen), or natural gaseous atmospheric constituents (such as carbon dioxide, or water vapor) in a quantity differing from that emitted in the operation of the automobile without the device.

(7) All information available to the applicant concerning whether and under what conditions the device in its operation, function or malfunction may result in damage to an automobile or endanger its occupants or persons or property in close proximity to the automobile.

(c) Shipment to the EPA's Motor Vehicle Emission Laboratory, or other test site designated by the Administrator, of the devices being evaluated in the quantity specified by the Administrator.

(d) Complete copies of the application and of any amendments thereto shall be submitted in such multiple copies as the Administrator may require.

§ 610.17 Application format.

(a) Device manufactures who apply for evaluation of a fuel economy retrofit device should use the standard application format, in order to allow the Administrator to compile relevant data on specific devices and to allow timely response to applications. Application formats are available from and submissions shall be made to:

Director, Emission Control Technology Division, Environmental Protection Agency, 2565 Plymouth Road, Ann Arbor, Michigan 48105. Attn: Fuel Economy Retrofit Device Evaluation.

(b) Four weeks should be allowed for analysis of the application and preparation of a response. As indicated in other sections of this part, this response will include the evaluation of the device according to the criteria discussed in subpart B of this part. The results of the Administrator's evaluation will be made public.

Subpart B—Evaluation Criteria for the Preliminary Analysis

§ 610.20 General.

The Administrator will employ the following criteria for evaluating the accuracy of fuel economy representations made with respect to retrofit devices:

(a) Device functional category;

(b) Device integrity;

(c) Operator interaction effects;

(d) Validity of test data;

(e) Evaluation of test data;

as these concepts are explained in §§ 610.21 through 610.25 respectively.

§ 610.21 Device functional category and vehicle system effects.

(a) The devices evaluated in this program are organized into categories for purposes of definition and establishment of evaluation criteria and test procedures, and to indicate which vehicle functional characteristics (other than fuel economy) may be adversely affected by installation or use of the device.

(b) A device's category will be based on:

(1) Engineering principles governing operation of the device;

(2) Interaction between the device and specific vehicle/engine operating characteristics; and

(3) Constraints with respect to vehicle applicability of the device.

(c) The device categories and the vehicle functional characteristics which may be adversely affected are noted for each device category in Table I. The notation for each characteristic is as follows:

Exhaust emissions.....1
Driveability.....2
Durability 3
Performance.....4

TABLE 1

Device categories	Characteristics adversely affected
Fuel-Air System	
Carburetors and fuel injection systems	All.
Air-fuel ratio modifiers (e.g., air bleeds)	All.
Atomization devices (acoustic and mechanical).	All.
Vapor Injectors	All.
Choke controls	1, 2, and 4.
Air filters	1, 2, and 4.
Fuel-air distribution systems (intake manifolds).	1, 2, and 4.
Fuel pressure regulators	All.
Ignition System	
Spark plugs	All.
Spark timing control systems	All.
Spark duration control systems	1, 4.
Spark energy sources	1, 4.
Emission Control Systems	
Exhaust gas recirculation (EGR) systems	All.
After-treatment devices	1, 2, and 4.
Drivetrain	
Tires	1.
Overdrive units	All.

TABLE 1—Continued

Device categories	Characteristics adversely affected
Torque converter lockups	1, 2, and 4.
Exhaust System	
Headers	1.
Tuned exhaust systems	1.
Accessories	
Cooling fan or cooling fan couplings	1.
Cold start aids (e.g., engine heaters)	1.
Lubrication	
Oil filters	3.
Vehicle Body	
Aerodynamic drag reduction devices	1.
Miscellaneous	
Modification to valve timing	All.
Retrofit prechambers	All.
Fuel additives	All.
Other miscellaneous	Potentially all.

(d) In the absence of sufficient information from the device manufacturer on this topic or if the Administrator's preliminary analysis indicates that testing is necessary to determine the nature or extent of possible adverse effects of device installation and use on vehicle operation and performance, the Administrator will require such tests to be conducted prior to the publication of a complete evaluation of the device.

[44 FR 17946, Mar. 23, 1979, as amended at 49 FR 18489, May 1, 1984]

§ 610.22 Device integrity.

The integrity of a device will be evaluated with respect to:

(a) The extent to which device manufacture is standardized by means of drawings, specifications, and other fabrication and quality assurance controls;

(b) The degree of sensitivity of device effectiveness to deterioration under exposure to normal operating conditions.

(c) The susceptibility of the device to deterioration of effectiveness under abnormal operating conditions;

(d) The effect upon its surroundings of device malfunction which may be reasonably anticipated to occur in actual use; and

(e) The extent to which test data support (b), (c) and (d).

§ 610.23 Operator interaction effects.

The device will also be evaluated with respect to:

(a) The degree of sensitivity of device effectiveness to variances in installation, operation and maintenance;

(b) The adequacy of manufacturer-furnished instructions for minimizing variances in installation, operation and maintenance;

(c) The extent to which device installation or use, or the effects of such installation or use, relate to Federal emission control regulations;

(d) Effects on the performance, safety, or occupant comfort of the retrofitted vehicle, and on that of other vehicles; and

(e) The relationship between total cost of ownership of the device (purchase price plus maintenance costs) and the cost savings realizable from its fuel economy effects.

§ 610.24 Validity of test data.

The Administrator will make a determination as to the validity of manufacturer-furnished test data on the basis of:

(a) The correlation between the test procedures used by the manufacturer or testing agent and the procedures prescribed in subpart D;

(b) The choice of test vehicle(s) as representative of the manufacturer's claim for operation and/or principles of operation;

(c) The degree of control exercised over ambient and operating conditions in the tests, including vehicle calibrations;

(d) Accuracy and precision of the measurement techniques and instrumentation used in the tests;

(e) Disclosure of all test data acquired on the device, whether representing positive, negative, or inconclusive results;

(f) Qualifications and independence of the testing agent; and

(g) The extent to which test data include evaluation of the durability of the device, or its effect on vehicle durability.

§ 610.25 Evaluation of test data.

Valid manufacturer-furnished test data will be evaluated with respect to:

(a) Vehicle applicability;

(b) Dependence of device effects upon vehicle type;

(c) Device effects on fuel economy, and on emissions, with statistical or other caveats as established by the data base;

(d) Definition of claims which can be made based on the available data; and

(e) Substantiation of specified claims made by the manufacturer.

Subpart C—Test Requirement Criteria

§ 610.30 General.

(a) If the Administrator determines, by the criteria given in subpart B, that the claims made for a device are not supported by existing test data or other information, the Administrator will request the manufacturer to furnish additional information, and may design a test program to investigate those areas where claims appear to be erroneous or unsupported or where adverse effects due to use of the device are suspected.

(b) In cases where the Administrator determines on the basis of the preliminary analysis that a device either can have no significant beneficial effect on fuel economy, or will have an adverse effect on emissions, he may elect not to design a test program or test the device and to publish only his preliminary analysis and conclusions.

(c) If the evaluation was initiated upon application of a manufacturer (as described in § 610.12(c)) and the manufacturer elects not to have the device tested, the Administrator's preliminary analysis and conclusions will be published.

(d) For each device that the Agency intends to test, the Administrator will give the manufacturer prior notice by mail of the Agency's intent to test the device and provide the manufacturer the opportunity to attend the test sessions and to comment on the specific test design and results.

[44 FR 17946, Mar. 23, 1979, as amended at 49 FR 18489, May 1, 1984]

§ 610.31 Vehicle tests for fuel economy and exhaust emissions.

(a) The tests described in subpart D, E, or F may be conducted if existing

data or other information are insufficient to support claims for a device in any of these areas:

(1) Degree of improvement in fuel economy

(2) Effect on exhaust emissions

(3) Vehicle applicability

(b) The Administrator may determine that, in certain cases, tests using engine dynamometers are adequate for determining the effect of a device. Examples of such cases are given below.

(1) *Long-term effects.* In some cases, it may be necessary for the engine to operate for several thousand miles before the effectiveness can be adequately measured. In such cases an engine dynamometer will permit a less expensive and better controlled durability and economy test than one in which a vehicle must be driven on a durability route and then tested on a chassis dynamometer or test track.

(2) *Durability requirements.* Aspects of engine durability can be efficiently determined using specialized engine testing rather than through durability mileage accumulation in a vehicle. A number of standard engine tests are presently used which can be incorporated into this requirement.

(c) When in the judgment of the Administrator a device cannot satisfactorily be evaluated using either dynamometer or track versions of the City Fuel Economy Test and the Highway Fuel Economy Test, the Administrator will select or design other procedures.

§ 610.32 Test fleet selection.

(a) The composition and size of the test fleet will be determined by the Administrator. In a device evaluation program initiated at the request of the FTC, the composition and size of the test fleet will be determined by the Administrator in consultation with the FTC.

(b) The goal of the test fleet selection will be the provision of a data base adequate to give the Administrator reasonable confidence in the conclusions to be reached.

(c) Once the number of vehicles to be tested has been determined, the Administrator will specify the test fleet makeup by make, model, model year, engine displacement and carburetor, transmission type, and such other factors as he may deem relevant to the testing program.

§ 610.33 Durability tests.

The Administrator may determine that a device under evaluation will require durability testing in addition to the basic evaluation testing for device effectiveness. This requirement may be necessary for several reasons:

(a) A retrofit device manufacturer may claim that some mileage accumulation may be needed before the full effectiveness of the device can be obtained. If such claims are made, durability testing as described in subpart E may be performed. To determine whether the effectiveness change during the mileage accumulation is a function of the device or of the mileage accumulation alone, in some durability tests it may be necessary to run the mileage accumulation on vehicles with and without the device. Due to the high cost of durability testing and in particular of such duplicate testing, it will be used only where it is judged by the Administrator to be necessary.

(b) A device may have a limited life expectancy or be such that it requires replacement or adjustment at a prescribed mileage interval. Confirmatory durability tests may be run to assess whether such mileage intervals are proper and effective.

(c) A device may be suspected of having an adverse effect on the durability of the engine to which it is applied. After identification of a potential failure mode, durability tests may be conducted to investigate any changes in engine characteristics associated with that failure mode. Examples are valve problems, deterioration in spark plug life, increase in carburetor or combustion chamber deposits, or increased engine wear. If it is not possible to directly measure the change in the suspect characteristic, then a durability run may be made as described in subpart E, in which fuel economy and exhaust emissions are periodically checked during the accumulation of up to 15,000 miles.

(d) A critical item which can influence fuel economy is vehicle maintenance. Any durability test program used in evaluation of the effectiveness

of a fuel economy device will be designed to differentiate maintenance effects from the effect of the device. Any maintenance associated with the device operation will be rigidly controlled. If the maintenance appears to be a significant factor in the effectiveness of a device, then it may be necessary to run a control test on vehicles without the device installed where the same maintenance is performed to quantify any incremental effect of that maintenance.

§ 610.34 Special test conditions.

If the Administrator determines that a device may have potentially detrimental effects on the operation of a vehicle when operated in ambient conditions outside the range specified in 40 CFR part 86, or if the device manufacturer claims a fuel economy improvement in such conditions, additional tests may be performed. These tests will determine whether the device will significantly limit the operational usefulness of the vehicle and will assess the claimed fuel economy benefit.

(a) *Extreme temperatures.* As required by the Administrator, tests will be conducted at extreme ambient temperature conditions to determine the effect due to devices (e.g. engine heaters) for which fuel economy improvements at extreme temperatures are made. For other devices it may be necessary to determine whether the cold starting and driving capability of device-equipped vehicles is affected sufficiently to make them dangerous, or whether fuel economy characteristics at extreme temperatures are significantly worse than before the device was installed.

(b) *High altitude.* Devices for which specific claims of improved fuel economy at high altitude are made may be tested using the procedures in subpart D, at altitudes above 4000 feet. For other devices, testing at high altitude may be necessary for determining whether a device will make the vehicle less useful or efficient when operated at various altitudes. The Administrator will determine when such testing is required.

§ 610.35 Driveability and performance tests.

If the Administrator determines that driveability and performance of a vehicle may be adversely affected by the use of a device, a number of automobiles to be determined by the Administrator will be subjected to the driveability and performance tests discussed in §§610.62 and 610.63, respectively.

Subpart D—General Vehicle Test Procedures

§ 610.40 General.

Two chassis dynamometer test procedures, the Federal Test Procedure and the Highway Fuel Economy Test will generally be used to evaluate the effectiveness of the devices supplemented by steady state or engine dynamometer tests where warranted. Under unusual circumstances, other test procedures, durability test procedures or special test procedures such as track versions of the City and Highway fuel economy tests may be used. These procedures are described in subparts E and F.

§ 610.41 Test configurations.

(a) In order to measure the effectiveness of a retrofit device at least two, and in some cases, three vehicle configurations defined in §610.11 will be tested. Each vehicle will be tested at least twice in each configuration, as determined by the Administrator.

(b) The first test configuration is a baseline configuration. In this configuration the baseline or unretrofitted vehicle emissions will be measured.

(c) A second test configuration, an adjusted configuration, may be required at the discretion of the Administrator if a device requires both hardware and engine parameter modifications to achieve the fuel economy improvement. If, in the Administrator's judgment, based on a review of the available information, the combined effects of retrofit hardware installation and parametric adjustment could be substantially duplicated by parametric adjustment alone, then the Administrator may specify a second test, to evaluate such adjustment exclusive of the retrofit hardware.

(d) The third series of tests, in the retrofitted configuration, will evaluate the full retrofit system installed on the vehicle.

§ 610.42 Fuel economy measurement.

(a) Fuel consumption will be measured by:

(1) The carbon balance method, or

(2) Gravimetric or volumetric methods. In the gravimetric and volumetric methods, fuel consumption is determined by weighing the fuel source before and after a test, or by measuring the volume of fuel consumed during a test. Since the distance traveled during the tests is known, the fuel economy, in miles per gallon, can be calculated. Gravimetric and volumetric methods require the use of special test equipment in addition to the emissions measuring equipment.

(b) The carbon balance procedure for measuring fuel consumption relates the carbon products in the exhaust to the amount of fuel burned during the test. This method will be the one used to measure fuel economy unless track or road tests are employed.

(c) Three values of fuel economy will be reported: for city driving ('75 FTP), for highway driving (HFET), and the combined city/highway value calculated according to this equation:

$$MPG_{combined} = 1 / \left[\frac{0.55}{MPG_{city}} + \frac{0.45}{MPG_{hwy}} \right]$$

§ 610.43 Chassis dynamometer procedures.

(a)(1) *1975 Federal Test Procedure.* Vehicle exhaust emissions and fuel economy under urban driving conditions will be measured according to the Federal emission test procedure described in 40 CFR part 86, subpart B, which is known as the 1975 Federal Test Procedure ('75 FTP). However, the following modifications will be employed:

(i) No evaporative emission loss, as specified by 40 CFR part 86 need be measured (with the exception of devices modifying or disconnecting existing evaporative control devices in such a manner as would be expected to adversely affect their evaporative emission control performance).

(ii) Vehicle preconditioning shall consist of operation of the vehicle through one (1) EPA Urban Dynamometer Driving Schedule. This preconditioning must be done at least 12 hours, but no earlier than 36 hours before the emission test.

(iii) While the test fuel must meet the specifications outlined in 40 CFR part 86, fuel conditioning as specified for evaporative emission test procedures is not required.

(b) *Highway Fuel Economy Test.* The test vehicle is fully warmed up at the start of the highway Fuel Economy Test which is ordinarily run immediately following the Federal Emission Test Procedure. The test procedure to be followed for generation of highway fuel economy data is that specified in § 600.111.

(c) *Steady state tests.* Constant speed, road load tests may be conducted to help give insight into operational differences and exhaust emission and fuel economy changes due to a retrofit device. Speeds between 0 (engine idling) and 60 mpg will be investigated, with a time period at each speed long enough to ensure that engine operation has stabilized.

Subpart E—Durability Test Procedures

§ 610.50 Test configurations.

(a) In addition to the tuneup to manufacturer's specifications per § 610.41, all vehicles in the durability fleet will have installed the following new parts: Air, oil, and fuel filters, spark plugs, points, condenser, rotor, distributor cap, PCV valve, and emission control devices such as vacuum control valves and EGR valves.

(b) Vehicles included in the durability fleet will be subjected at zero device-miles to the same test sequence for fuel economy and exhaust emissions as specified in subpart D. Subsequently, they will be tested at 3,000 device-mile intervals, up to and including the final mileage point of 15,000 device-miles. Testing at these mileage points will be performed with the vehicle equipped with the full retrofit system.

(c) After the 15,000-mile test the vehicle will be tuned as necessary and the device adjusted to the manufacturer's

specifications as required. The fully restored retrofitted configuration will then be tested. The device will then be removed from the vehicle and the vehicle set to vehicle manufacturer's specifications. A tuned baseline test will then be conducted.

§ 610.51 Mileage accumulation procedure.

(a) Except as otherwise provided in this part, the mileage accumulation procedure will be that provided in 40 CFR part 86. This mileage accumulation schedule, or a suitable alternate procedure approved by the Administrator, will be used.

(b) Fuel used in the accumulation of mileage will be commercial fuel available in the retail market and shall conform to the requirements of 40 CFR part 86 for mileage accumulation fuel.

(1) The requirements of this paragraph may be modified by the Administrator when it is a fuel or fuel additive that is being tested.

§ 610.52 Maintenance.

(a) Maintenance during the durability evaluation can best be considered in three separate categories:

(1) Normal scheduled vehicle maintenance,

(2) Unscheduled vehicle maintenance, and

(3) Retrofit maintenance.

(b) Normal scheduled vehicle maintenance is the periodic service specified in the original owner's manual supplied to the owner at the time of new vehicle purchase.

(1) Normal periodic engine oil changes, vehicle lubrication, and oil filter changes, as specified in the original owner's manual, will be performed during durability mileage accumulation.

(2) For purposes of this part, the following items of normally scheduled vehicle maintenance will not be performed during the durability mileage accumulation:

(i) Normal tune-up items:

(A) Spark plugs.

(B) Condenser.

(C) Rotor.

(D) Distributor cap.

(ii) Air Cleaner element.

(iii) PCV Inspection.

(iv) Dwell and timing check.

(v) Charging circuit check.

(3) Periodic maintenance items specified in the original owner's manual, other than those listed above, may be performed if found to be necessary by the Administrator.

(c) *Unscheduled maintenance.* Because the vehicles used for durability evaluation in this program will probably have considerable mileage accumulation and unknown maintenance prior to inclusion in the program, it can be anticipated that certain vehicle and engine failures may occur, which may be unrelated to the retrofit device. Unscheduled maintenance will be performed only in those cases where a significant and obvious driveability problem has been reported by the driver of the vehicle.

(1) Correction of the following problems will be made as soon as the problems occur:

(i) Tire replacement (same size and type).

(ii) Vehicle body repairs (remote from engine and retrofit).

(iii) Windshield wipers.

(iv) Fluid levels unrelated to retrofit.

(v) Brakes.

(vi) Hoses unrelated to retrofit.

(vii) Belts unrelated to retrofit.

(viii) Suspension failures.

(ix) Wheel alignment.

(x) Steering.

(xi) Wheel bearings.

(xii) Non-engine electrical system.

(xiii) Drivetrain components (U-joints, axles, transmission adjustments, etc.)

(2) Other unscheduled maintenance of the engine or drivetrain may be made as directed by the Administrator. Upon notification of a need for unscheduled maintenance, the Administrator may decide that before and after maintenance fuel economy tests are required.

(d) *Retrofit maintenance.* Maintenance of the retrofit device will normally not be performed during the accumulation of durability mileage of 15,000 miles. However, certain retrofit devices may require periodic maintenance that is directly related to device function. An example is the periodic addition of fluid to the reservoir of a vapor injector. The Administrator will determine whether periodic maintenance will be

allowed, based on his review of available information including the device manufacturer's maintenance instructions to the consumer.

(e) A log of all maintenance shall be kept for every vehicle. These logs will be summarized in the final report by the Administrator.

Subpart F—Special Test Procedures

§ 610.60 Non-standard ambient conditions.

(a) *Extreme temperatures.* For vehicles required to be tested at extreme temperatures, the test sequence described in § 610.41 will be performed using either test track or dynamometer, in ambient temperatures outside the 60° to 90° range specified in § 610.64 as determined by the Administrator. The driveability tests described in § 610.62 may also be performed at non-standard temperatures, as determined to be necessary by the Administrator.

(b) *High altitudes.* Vehicles required to be tested at high altitudes will undergo the tests described in § 610.43 if necessary, on either test track or dynamometer as determined by the Administrator. One test location, at an elevation of no less than 4000 feet, will be selected.

§ 610.61 Engine dynamometer tests.

The Administrator will choose a test procedure or procedures from various engine dynamometer durability test procedures used by research organizations in government, the oil industry, engine manufacturing companies, and independent laboratories.

§ 610.62 Driveability tests.

Driveability assessment (at normal ambient temperatures) of the baseline configuration, of the adjusted configuration (if required by the Administrator), and of the fully retrofitted configuration may be conducted at zero device-miles for all vehicles included in the durability fleet, and at approximately zero device-miles at low ambient temperatures (0 °F–20 °F). Driveability evaluation procedures will be provided by the Administrator when necessary.

§ 610.63 Performance tests.

The effect of a device on a vehicle's performance will be determined by performing wide-open-throttle 0 to 60 mph acceleration tests (at normal ambient temperatures) on the baseline vehicle configuration, on the adjusted configuration (if required), and on the fully retrofitted configuration. Tests will be conducted on a dry, level, smooth-surfaced test track, with appropriate speed-time measuring equipment, on as many vehicles as determined to be necessary.

§ 610.64 Track test procedures.

(a) Cases may arise where it will be necessary to evaluate the fuel economy effects of a retrofit device on a test track, because the effect of the device cannot be adequately tested using the chassis dynamometer procedures. (An obvious example is a device that changes the aerodynamic drag of the test vehicle.) In such cases, testing will be performed on a dry, level, smooth-surfaced test track for such dimensions that the speeds required by the city and highway fuel economy tests may be safely achieved.

(1) Because aerodynamic drag is not a linear function of velocity, it will be necessary to limit testing to times when the wind velocity is less than 5 mph, with gusts less than 10 mph.

(2) Testing will also be limited to ambient temperatures between 60° and 90 °F, and to times when the ambient temperature remains reasonably constant during individual tests. Temperature differences between tests of baseline and retrofit configurations will also be minimized.

(3) Exhaust emissions will not be measured during track testing.

(4) Fuel economy of a vehicle running on a track will be measured using either a volumetric or gravimetric procedure approved by the Administrator.

(5) Vehicle speed and distance will be measured with a ''fifth wheel'' type of device. Suitable apparatus will be used to generate a permanent record (strip chart recorder, etc.) of the vehicle speed versus time.

(b) *City fuel economy test.* Although essentially the same procedures will be used for track testing as for dynamometer testing, some modifications will

be necessary to insure safe operation of the test vehicle and to adjust to the requirements of track testing.

(1) An assistant to the driver will be necessary to steer the vehicle, so that the driver will not be distracted from following the speed-time schedules used in the Federal test procedure.

(2) The test vehicle will be preconditioned within the same time constraints given in § 610.43(a)(1)(ii). Preconditioning may take place either on the track or on a dynamometer. The 12-hour soak after preconditioning will take place in an area where the ambient temperature will remain within the 60° to 90 °F range, indoors, if necessary.

(3) The vehicle will be transported to the test track without being started. If the distance from soak area to track is no greater than one-quarter mile, then the vehicle may be pushed or towed to the track. Otherwise the vehicle must be transported by truck or trailer.

(4) Fuel economy will be determined by either a gravimetric or volumetric method.

(c) *Highway fuel economy test.* The highway test will follow the city fuel economy test in the same manner as in dynamometer tests (§ 610.43(b)). Fuel economy will be measured by gravimetric or volumetric methods.

(d) *Steady state tests.* Steady state tests on the track will be run in the same manner as on the dynamometer except that fuel economy will be measured by gravimetric or volumetric methods.

§ 610.65 Other test procedures.

The Administrator may, pursuant to § 610.31(c), choose a test procedure or procedures from those used by research organizations in government, the oil industry, engine manufacturing companies, and independent laboratories. If none of these is deemed suitable, the Administrator may, in consultation with the party requesting the test, design a dynamometer, track or road test to measure the effects of the device.

PARTS 611–699 [RESERVED]