

## Environmental Protection Agency

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## PART 246—SOURCE SEPARATION FOR MATERIALS RECOVERY GUIDELINES

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APPENDIX TO PART 246—RECOMMENDED BIBLIOGRAPHY

AUTHORITY: Secs. 1008 and 6004 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6907, 6964).

SOURCE: 41 FR 16952, Apr. 23, 1976, unless otherwise noted.

### Subpart A—General Provisions

#### § 246.100 Scope.

(a) These guidelines are applicable to the source separation of residential, commercial, and institutional solid wastes. Explicitly excluded are mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; infectious wastes; classified waste.

(b) The "Requirement" sections contained herein delineate minimum actions for Federal agencies for the recovery of resources from solid waste through source separation. Pursuant to section 211 of the Solid Waste Disposal Act, as amended, and Executive Order 11752 section 4(a), the "Requirement"

sections of these guidelines are mandatory for all Federal agencies that generate solid waste. In addition, they are recommended to State, interstate, regional, and local governments for use in their activities.

(c) The "Recommended Procedures" sections are presented to suggest actions or preferred methods by which the objectives of the requirements can be realized. The "Recommended Procedures" are not mandatory for Federal agencies.

(d) The Environmental Protection Agency will render technical assistance in the form of sample cost analysis formats, sample bid specifications, implementation guidance documents and other guidance to Federal agencies when requested to do so, pursuant to section 3(d)1 of Executive Order 11752.

(e) Within one year after the effective date of these guidelines, agencies shall make a final determination as to what actions shall be taken to adopt the requirements of these guidelines and shall, within two months of such determination, submit to the Administrator a schedule of such actions.

(f) Federal agencies that make the determination not to source separate as described in §§ 246.200-1, 246.201-1, and 246.202-1, for whatever reason, shall make available to the Administrator the analysis and rationale used in making that determination. The Administrator shall publish notice of the availability of this report to the general public in the FEDERAL REGISTER. The following are considered to be valid reasons for not source separating under individual facts and circumstances: inability to sell the recovered materials due to lack of market, and costs so unreasonably high as to render source separation for materials recovery economically impracticable.

(1) The following points are to be covered in the report:

(i) A description of alternative actions considered with emphasis on those alternatives which involve source separation for materials recovery.

(ii) A description of ongoing actions which will be continued and new actions taken or proposed. This statement should identify all agency facilities which will be affected by these ac-

tions including a brief description of how such facilities will be affected.

(iii) An analysis in support of the action chosen by the agency including technical data, market studies, and policy considerations used in arriving at such a determination.

In covering the points above, agencies should make every effort to present information succinctly in a form easily understood, but in sufficient detail so that the factors influencing the decision not to source separate for materials recovery are clear.

(2) The above report shall be submitted to the Administrator as soon as possible after a final agency determination has been made not to adopt the requirements of these guidelines, but in no case later than sixty days after such final determination. The Administrator will indicate to the agency his concurrence/nonconcurrence with the agency's decision, including his reason therefor.

(3) Implementation of actions that would preclude source separation for materials recovery shall be deferred, for sixty days where feasible, in order to give the Administrator an opportunity to receive, analyze and seek clarification of the above required report.

(4) It is recommended that where the report required by § 246.100(f) concerns an action for which an Environmental Impact Statement (EIS) is required by the National Environmental Policy Act, that the report be circulated together with the EIS.

(g) The report required under § 246.100(e) and (f) shall be made on forms to be prescribed by the Administrator by notice in the FEDERAL REGISTER.

[41 FR 16952, Apr. 23, 1976, as amended at 47 FR 36603, Aug. 20, 1982]

#### § 246.101 Definitions.

As used in these guidelines:

(a) *Agricultural solid waste* means the solid waste that is generated by the rearing of animals, and the producing and harvesting of crops or trees.

(b) *Baler* means a machine used to compress solid wastes, primary materials, or recoverable materials, with or without binding, to a density or from

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which will support handling and transportation as a material unit rather than requiring a disposable or reusable container. This specifically excludes briquetters and stationary compaction equipment which is used to compact materials into disposable or reusable containers.

(c) *Bulk container* means a large container that can either be pulled or lifted mechanically onto a service vehicle or emptied mechanically into a service vehicle.

(d) *Classified Waste* means waste material that has been given security classification in accordance with 50 U.S.C. 401 and Executive Order 11652.

(e) *Collection* means the act of removing solid waste (or materials which have been separated for the purpose of recycling) from a central storage point.

(f) *Commercial establishment* means stores, offices, restaurants, warehouses and other non-manufacturing activities.

(g) *Commercial solid waste* means all types of solid wastes generated by stores, offices, restaurants, warehouses and other non-manufacturing activities, and non-processing wastes such as office and packing wastes generated at industrial facilities.

(h) *Construction and demolition waste* means the waste building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition operations on pavements, houses, commercial buildings and other structures.

(i) *Compartmentalized vehicle* means a collection vehicle which has two or more compartments for placement of solid wastes or recyclable materials. The compartments may be within the main truck body or on the outside of that body as in the form of metal racks.

(j) *Corrugated container waste* means discarded corrugated boxes.

(k) *Corrugated box* means a container for goods which is composed of an inner fluting of material (corrugating medium) and one or two outer liners of material (linerboard).

(l) *Federal facility* means any building, installation, structure, land, or public work owned by or leased to the Federal Government. Ships at sea, aircraft in the air, land forces on maneu-

vers, and other mobile facilities are not considered Federal facilities for the purpose of these guidelines. United States Government installations located on foreign soil or on land outside the jurisdiction of the United States Government are not considered Federal facilities for the purpose of these guidelines.

(m) *Food waste* means the organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods; commonly called garbage.

(n) *Generation* means the act or process of producing solid waste.

(o) *High-grade paper* means letterhead, dry copy papers, miscellaneous business forms, stationery, typing paper, tablet sheets, and computer printout paper and cards, commonly sold as "white ledger," "computer printout" and "tab card" grade by the wastepaper industry.

(p) *Industrial solid waste* means the solid waste generated by industrial processes and manufacturing.

(q) *Infectious waste* means: (1) Equipment, instruments, utensils, and fomites (any substance that may harbor or transmit pathogenic organisms) of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies; (2) laboratory wastes, such as pathological specimens (e.g. all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites attendant thereto; (3) surgical operating room pathologic specimens and disposable fomites attendant thereto and similar disposable materials from outpatient areas and emergency rooms.

(r) *Institutional solid waste* means solid wastes generated by educational, health care, correctional and other institutional facilities.

(s) *Mining wastes* means residues which result from the extraction of raw materials from the earth.

(t) *Post-consumer waste* (PCW) means a material or product that has served its intended use and has been discarded for disposal or recovery after passing through the hands of a final consumer.

(u) *Recoverable resources* means materials that still have useful physical, chemical, or biological properties after serving their original purpose and can, therefore, be reused or recycled for the same or other purposes.

(v) *Recovery* means the process of obtaining materials or energy resources from solid waste.

(w) *Recycled material* means a material that is used in place of a primary, raw or virgin material in manufacturing a product.

(x) *Recycling* means the process by which recovered materials are transformed into new products.

(y) *Residential solid waste* means the wastes generated by the normal activities of households, including but not limited to, food wastes, rubbish, ashes, and bulky wastes.

(z) *Separate collection* means collecting recyclable materials which have been separated at the point of generation and keeping those materials separate from other collected solid waste in separate compartments of a single collection vehicle or through the use of separate collection vehicles.

(aa) *Sludge* means the accumulated semiliquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins. It does not include solid or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved material in irrigation return flows or other common water pollutants.

(bb) *Solid waste* means garbage, refuse, sludge, and other discarded solid materials, including solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities, but does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants. Unless specifically noted otherwise, the term “solid waste” as used in these guidelines shall not include mining, agricultural, and industrial solid wastes; hazardous

wastes; sludges; construction and demolition wastes; and infectious wastes.

(cc) *Source separation* means the setting aside of recyclable materials at their point of generation by the generator.

(dd) *Specification* means a clear and accurate description of the technical requirements for materials, products or services, identifying the minimum requirements for quality and construction of materials and equipment necessary for an acceptable product. In general, specifications are in the form of written descriptions, drawings, prints, commercial designations, industry standards, and other descriptive references.

(ee) *Stationary compactor* means a powered machine which is designed to compact solid waste or recyclable materials, and which remains stationary when in operation.

(ff) *Storage* means the interim containment of solid waste after generation and prior to collection for ultimate recovery or disposal.

(gg) *Virgin material* means a raw material used in manufacturing that has been mined or harvested and has not as yet become a product.

### Subpart B—Requirements and Recommended Procedures

#### § 246.200 High-grade paper recovery.

##### § 246.200–1 Requirements.

High-grade paper generated by office facilities of over 100 office workers shall be separated at the source of generation, separately collected, and sold for the purpose of recycling.

##### § 246.200–2 Recommended procedures: High-grade paper recovery from smaller offices.

The recovery of high-grade paper generated by office facilities of less than 100 office workers should be investigated in conformance with the following recommended procedures and implemented where feasible.

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### § 246.200-3 Recommended procedures: Market study.

An investigation of markets should be made by the organization responsible for the sale of recyclable materials in each Federal agency and should include at a minimum:

(a) Identifying potential purchasers of the recovered paper through standard market research techniques;

(b) Directly contacting buyers, and determining the buyers' quality specifications, the exact types of paper to be recycled, potential transportation agreements and any minimum quantity criteria; and

(c) Determining the price that the buyer will pay for the recovered paper and the willingness of the buyer to sign a contract for purchase of the paper at a guaranteed minimum price.

### § 246.200-4 Recommended procedures: Levels of separation.

A two-level separation is recommended for most facilities. This separation should consist of (a) high-grade wastepaper and (b) all other waste. Facilities that produce large enough quantities of waste computer paper and cards to make their separation into a separate category cost effective may choose to implement three levels of separation: (1) Computer papers, (2) other high-grade papers, (3) all other wastes.

### § 246.200-5 Recommended procedures: Methods of separation and collection.

(a) Systems designed to recover high grades of office paper at the source of generation, i.e., the desk, are the desk-top system, the two-wastebasket system, and the office centralized container system.

(b) With the desk-top system, recyclable paper is placed by the generator in a container on his desk, while other waste is placed in a wastebasket. With the two-wastebasket system, recyclable paper is placed by the generator in one desk-side wastebasket, and all other waste is placed in another. In the centralized container system, large containers for the collection of recyclables are placed in centralized locations within the office areas of the

building. Nonrecyclable waste is placed in desk-side wastebaskets.

(c) The recommended system is the desk-top system because it is designed to maximize recovery of high value material in an economically feasible manner. While the two-wastebasket system and centralized container system have been implemented with success in isolated instances, data indicate that, on the whole, these systems have experienced high levels of contamination, low levels of participation, and low revenues. The desk-top system has been designed to minimize these problems.

(d) The precise method of separation and collection used to implement the desk-top system will depend upon such things as the physical layout of the individual facility, the ease of collection, and the projected cost effectiveness of using various methods. The recommended desk-top system is carried out in the following manner:

(1) Workers are to deposit high-grade paper into a desk-top tray or other small desk-top holder to be supplied by the agency. This holder should be designed in such a way as to prevent it holding contaminants, such as food or beverage containers.

(2) At the office worker's convenience or when the tray is filled, the worker carries the paper to a conveniently located bulk container within the office area. This large container should be located in an area the worker frequents in the normal course of business.

(3) In locations where computer cards and printouts are to be collected separately, the receptacle for these wastes should be near the computer terminal or in some other logical, centrally located place.

(4) Collection of the high-grade paper from the bulk containers in the office area should be performed by the janitorial or general maintenance service.

The number of locations and the frequency of collection of these containers will be determined by office size and maintenance staff capacity.

(e) Mixed paper and some high-grade office papers have also been recovered for recycling by hand-picking in an individual building's trash room or at a centralized facility serving several

buildings. With these hand-picking systems, recyclable waste is not separated at the source of generation, but is mixed with other waste in the usual manner and removed to a centralized location where recyclable paper is picked out of the mixed waste by hand. Facilities may choose to use this method of high-grade paper recovery if it is shown by analysis to be economically preferable to source separation.

**§ 246.200-6 Recommended procedures: Storage.**

Among the alternatives for paper storage are on-site bailing, the use of stationary compactors, or storage in corrugated boxes or normal waste containers. Stored paper should be protected from fire, inclement weather, theft, and vandalism.

**§ 246.200-7 Recommended procedures: Transportation.**

Transportation to market may be supplied by the facility, by a private hauler, or by the purchaser. Collection of the recyclable paper should be on a regular, established schedule.

**§ 246.200-8 Recommended procedures: Cost analysis.**

After potential markets have been located (but prior to initiation of formal bidding procedures), preliminary determinations of various separation methods, storage, and transportation costs have been made, and estimated tonnages of both recoverable high-grade paper and residual solid waste have been established, an analysis should be conducted which compares the costs of the present waste collection and disposal system with the proposed segregated systems. At a minimum, the study should include all capital, operating and overhead costs and take into account credits for revenue from paper sales and savings from diverting recycled materials from disposal. Potential costs to upgrade collection and disposal practices to comply with EPA's Guidelines for the Storage and Collection of Residential, Commercial and Institutional Solid Wastes (40 CFR part 243) and Thermal Processing and Land Disposal Guidelines (40 CFR parts 240 and 241) should be included in the analysis. In formulating a separation sys-

tem and evaluating its costs, every effort should be made to use janitorial and waste collection resources efficiently. This cost analysis should enable the facility to determine the most cost effective method of implementing the requirement of this part.

**§ 246.200-9 Recommended procedures: Contracts.**

Formal bids should be requested for purchase of the recovered materials, such bids being solicited in conformance with bidding procedures established for the responsible agency. Contracts should include the buyer's quality specifications, quantity and transportation agreements, a guarantee that the material will be accepted for one year or more, and a guaranteed minimum purchase price.

**§ 246.200-10 Recommended procedures: Public information and education.**

A well-organized and well-executed public information and education program explaining the justification, goals, methods and level of separation should be conducted to inform and motivate office personnel and secure their cooperation in separating their waste. This public information and education program should precede the program and continue on a regular basis for its duration.

**§ 246.201 Residential materials recovery.**

**§ 246.201-1 Requirement.**

Separation of used newspapers at the source of residential generation in conjunction with separate collection shall be carried out at all facilities in which more than 500 families reside, and the newspapers shall be sold for the purpose of recycling.

**§ 246.201-2 Recommended procedures: Newsprint recovery from smaller residential facilities.**

The recovery of newsprint generated by residential facilities of less than 500 families should be investigated in conformance with the following recommended procedures and implemented where feasible.

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### § 246.201-3 Recommended procedures: Glass, can, and mixed paper separation.

In areas where markets are available, it is recommended that glass, cans, and mixed paper be separated at the source of generation and separately collected for the purpose of recycling.

### § 246.201-4 Recommended procedures: Market study.

An investigation of markets should be made for each material by the organization responsible for sale of recyclable materials in each agency and should include at a minimum:

- (a) Identifying potential purchasers of the recovered material through standard market research techniques.
- (b) Directly contacting buyers and determining the buyers' quality specifications, potential transportation agreements and any minimum quantity criteria.
- (c) Determining the prices that the buyer will pay for the recovered material and the willingness of the buyer to sign a contract for the purchase of the material at guaranteed minimum prices.

### § 246.201-5 Recommended procedures: Methods of separation and collection.

Following separation within the home, any of the following methods of collection may be used:

- (a) Materials may be placed at the curbside by the resident and may be collected from each household using separate trucks or compartmentalized vehicles.
- (b) For multi-family dwellings, separated materials may be placed in bulk containers located outside of the building and collected by trucks dispatched to collect recyclables.
- (c) Collection stations may be set up at convenient locations to which residents bring recyclables. These stations should provide separate bulk containers for each item to be recycled. The size and type of container will depend on the volume and type of material collected, the method of transportation to be used in hauling the materials to market and the frequency of removal.

### § 246.201-6 Recommended procedures: Transportation to market.

Transportation to market may be supplied by the facility or the community generating the waste, by a private hauler, or by the purchaser.

### § 246.201-7 Recommended procedures: Cost analysis.

After potential markets have been located (but prior to initiation of formal bidding procedures), preliminary determinations of various separation methods, storage and transportation costs have been made, and estimated tonnages of both recoverable materials and residual solid waste have been established, an analysis should be conducted which compares the costs of the present waste collection and disposal system with the proposed segregated systems. At a minimum this study should include all capital, operating and overhead costs and take into account credits for revenue from paper sales and savings from diverting recycled materials from disposal. Potential costs to upgrade collection and disposal practices to comply with EPA's Guidelines for the Storage and Collection of Residential, Commercial and Institutional Solid Wastes (40 CFR part 243) and Thermal Processing and Land Disposal Guidelines (40 CFR parts 240 and 241) should be included in the analysis. In formulating a separate collection system and evaluating its costs, every effort should be made to use idle equipment and underutilized collection manpower to reduce separate collection costs. This cost analysis should enable the facility to determine the most cost effective method if implementing the requirements of this part.

### § 246.201-8 Recommended procedures: Contracts.

Formal bids should be requested for purchase of the recovered materials, such bids being solicited in conformance with bidding procedures established for the responsible jurisdiction. Contracts should include the buyer's quality specifications, quantity and transportation agreements, a guarantee that the material will be accepted for one year or more and a guaranteed minimum purchase price.

**§ 246.201-9 Recommended procedures:  
Public information and education.**

A well organized and well executed public information and education program explaining the justification, goals, methods and level of separation should be conducted to inform and motivate householders and to secure their cooperation in separating their waste. This public information and education program should precede the program and continue on a regular basis for its duration.

**§ 246.202 Corrugated container recovery.**

**§ 246.202-1 Requirement.**

Any commercial establishment generating 10 or more tons of waste corrugated containers per month shall separately collect and sell this material for the purpose of recycling.

**§ 246.202-2 Recommended procedures:  
Corrugated container recovery  
from smaller commercial facilities.**

The recovery of corrugated containers from commercial facilities generating less than 10 tons per month should be investigated in conformance with the following recommended procedures and implemented where feasible.

**§ 246.202-3 Recommended procedures:  
Market study.**

An investigation of markets should be made by the organization responsible for sale of recyclable material in each Federal agency and should include at a minimum:

- (a) Identifying potential purchasers of the recovered corrugated through standard market research techniques.
- (b) Directly contacting buyers and determining the buyers' quality specifications, potential transportation agreements and any minimum quantity criteria.
- (c) Determining the price that the buyer will pay for the recovered corrugated and the willingness of the buyer to sign a contract for purchase of the paper at a guaranteed minimum price.

**§ 246.202-4 Recommended procedures:  
Methods of separation and storage.**

The method selected will depend upon such variables as the physical layout of the individual generating facility, the rate at which the corrugated accumulates, the storage capacity of the facility, and the projected cost-effectiveness of using the various methods. All of the following suggested modes of separation and storage presuppose that the corrugated boxes will be accumulated at a central location in the facility after their contents are removed and that the boxes are flattened.

(a) Balers of various sizes: Corrugated boxes are placed in balers and compacted into bales. These bales may be stored inside or outside of the facility. The bales should be protected from fire, inclement weather, theft, and vandalism.

(b) Stationary compactors or bulk containers: Corrugated boxes are placed in a stationary compactor or bulk containers outside of the facility. The containers should be protected from fire, inclement weather, theft and vandalism.

**§ 246.202-5 Recommended procedures:  
Transportation.**

Transportation to market may be supplied by either the facility, a private hauler or the purchaser. In facilities to which goods are delivered from a central warehouse, corrugated may be backhauled by delivery trucks to the central facility and baled there for delivery to a user.

**§ 246.202-6 Recommended procedures:  
Cost analysis.**

After potential markets have been identified (but prior to initiation of formal bidding), preliminary determinations of various separation methods, storage and transportation costs have been made, and estimated tonnages of both recoverable material and residual solid waste have been established, an analysis should be conducted which compares the costs of the present waste collection and disposal system with the proposed segregated systems. At a minimum, the study should include all capital, operating



and overhead costs and take into account credits for revenue from paper sales and savings from diverting recycled materials from disposal. Potential costs to upgrade collection and disposal practices to comply with EPA's Guidelines for the Storage and Collection of Residential, Commercial and Institutional Solid Wastes (40 CFR part 243) and Thermal Processing and Land Disposal Guidelines (40 CFR parts 240 and 241) should be included in the analysis. This cost analysis should enable the facility to determine the most cost effective method of implementing these guidelines.

**§ 246.202-7 Recommended procedures: Establishment of purchase contract.**

Formal bids should be requested for purchase of the recovered materials, such bids being solicited in conformance with bidding procedures established for the responsible agency. Contracts should include the buyer's quality specifications, transportation agreements, a guarantee that the material will be accepted for one year or more and a guaranteed minimum purchase price.

**§ 246.203 Reevaluation.**

APPENDIX TO PART 246—RECOMMENDED BIBLIOGRAPHY

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**PART 247—COMPREHENSIVE PROCUREMENT GUIDELINE FOR PRODUCTS CONTAINING RECOVERED MATERIALS**

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