

during the environmental analysis, will be considered during the preparation of the environmental impact statement once it's been filed with the Commission. The application and additional information is substantially complete, and the environmental analysis will proceed on the issues as set forth in Scoping Document 2 and in the application materials.

1. *Description of Project:* The proposed run-of-river project would consist of the following features: (1) an approximately 1,000-foot-long masonry dam to elevation 97.47 feet National Geodetic Vertical datum, topped with a 3.1-foot-high rubber dam; (2) upstream and downstream fish passage facilities; (3) the Fish Lift Park adjoining the dam; (4) a 2,290-acre reservoir that extends approximately 25 miles upstream; (5) a three-level canal system adjacent to the river with headgates at the dam; (6) six separate hydroelectric facilities, named Hadley Falls Station, Riverside Station, Boatlock Station, Beebe-Holbrook Units, Skinner Unit and Chemical Units, and except for the Hadley Falls Station which has its intake structure adjacent to the canal headgate structure, the facilities withdraw water from the canal system; (7) a total nameplate capacity of 58,756 kilowatts (kW), consisting of the existing 43,756 kW project plus a 15,000 kW expansion at the Hadley Falls Station; (8) transmission line connections; and (9) appurtenant facilities. The estimated average annual generation is about 212,000 megawatt-hours (MWh), which would increase to about 262,750 MWh after completing the expansion in 2006.

m. *Purpose of Project:* The power generated by the project would be used within the Holyoke Gas & Electric Department's distribution system, with a portion sold to the Massachusetts Municipal Wholesale Electric Company.

n. *This notice also consists of the following standard paragraphs:* D10.

o. *Available Locations of Application:* A copy of the application, as amended and supplemented, is available for inspection and reproduction at the Commission's Public Reference and Files and Maintenance Branch, located at 888 First Street, N.E., Room 2A-1, Washington, D.C. 20426, or by calling (202) 208-2326. Copies are also available for inspection and reproduction at the Holyoke Gas & Electric Department, 99 Suffolk Street, Holyoke, Massachusetts, 01040.

D10. *Filing and Service of Responsive Documents*—The application is ready for environmental analysis at this time, and the Commission is requesting comments, reply comments,

recommendations, terms and conditions, and prescriptions.

The Commission directs, pursuant to Section 4.34(b) of the Regulations (see Order No. 533 issued May 8, 1991, 56 FR 23108, May 20, 1991) that all comments, recommendations, terms and conditions and prescriptions concerning the application be filed with the Commission within 60 days from the issuance date of this notice. All reply comments must be filed with the Commission within 105 days from the date of this notice.

Anyone may obtain an extension of time for these deadlines from the Commission only upon a showing of good cause or extraordinary circumstances in accordance with 18 CFR 385.2008.

All filings must (1) bear in all capital letters the title "COMMENTS", "REPLY COMMENTS", "RECOMMENDATIONS," "TERMS AND CONDITIONS," or "PRESCRIPTIONS;" (2) set forth in the heading the name of the applicant and the project number of the application to which the filing responds; (3) furnish the name, address, and telephone number of the person submitting the filing; and (4) otherwise comply with the requirements of 18 CFR 385.2001 through 385.2005. All comments, recommendations, terms and conditions or prescriptions must set forth their evidentiary basis and otherwise comply with the requirements of 18 CFR 4.34(b). Agencies may obtain copies of the application directly from the applicant. Any of these documents must be filed by providing the original and the number of copies required by the Commission's regulations to: The Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426. An additional copy must be sent to Director, Division of Project Review, Office of Hydropower Licensing, Federal Energy Regulatory Commission, at the above address. Each filing must be accompanied by proof of service on all persons listed on the service list prepared by the Commission in this proceeding, in accordance with 18 CFR 4.34(b), and 385.2010.

**David P. Boergers,**

*Secretary.*

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## ENVIRONMENTAL PROTECTION AGENCY

[FRL-6186-7]

### Notice of Availability of Draft RCRA Waste Minimization PBT Chemical List

**AGENCY:** Environmental Protection Agency.

**ACTION:** Notice of data availability.

**SUMMARY:** Today's notice makes available for public comment a list of 53 persistent, bioaccumulative, and toxic (PBT) chemicals and chemical categories which may be found in hazardous wastes regulated under the Resource Conservation and Recovery Act (RCRA). This notice responds to States, industry organizations, environmental groups, and individuals who commented on the EPA's national RCRA waste minimization policy, and it will be used to promote voluntary waste minimization efforts which reduce the generation of PBT chemicals found in RCRA hazardous waste by at least half by the year 2005.

EPA requests comment on today's RCRA Waste Minimization PBT Chemical List (also referred to as the RCRA PBT List) and the methodology used to develop today's List. EPA is not seeking comment on the Waste Minimization Prioritization Tool (WMPT), which is discussed in today's notice, because the Agency has sought extensive public review and comment on the WMPT in a previous notice.

Particular issues for comment are identified in the discussion that follows.

EPA will publish a final RCRA PBT List in 1999. This notice and the final RCRA PBT List are a significant component of an overall PBT strategy being developed by Agency. The overall strategy will encompass the PBT priorities and programs identified by other EPA offices, particularly those that cannot be addressed by single media controls and approaches.

**DATES:** Please submit written comments by January 8, 1999 to the address below.

**TO OBTAIN COPIES:** Copies of the draft list and all documents cited in this notice can be obtained by calling the RCRA/Superfund/CERCLA Hotline at (800) 424-9346, TDD (800) 553-7672 (hearing impaired), or (703) 412-9810 in the Washington, DC metropolitan area, from 9:00 a.m. until 6:00 p.m. Eastern time.

The draft list and supporting documents are also available in electronic format on the Internet, and can be obtained by accessing:  
WWW: <http://www.epa.gov/wastemin>  
FTP: <ftp://ftp.epa.gov>  
Login: anonymous

Password: your Internet address

**TO SUBMIT COMMENTS:** Please send an original and two copies of comments, referencing docket number F-98-MMLP-FFFFF, to: RCRA Docket Information Center, Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters (EPA, HQ), 401 M Street, SW, Washington, DC 20460. Hand deliveries of comments should be made to the Arlington, VA, address provided below. Comments may also be submitted electronically by sending electronic mail through the Internet to: rcra-docket@epamail.epa.gov. Comments in electronic format should also be identified by the docket number F-98-MMLP-FFFFF. All electronic comments must be submitted as an ASCII file that contains no special characters or any form of encryption.

Commenters should not submit electronically any confidential business information (CBI). CBI submissions must be sent under separate cover, and must include an original and two copies. CBI must be addressed to: RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA, 401 M Street SW, Washington, DC 20460.

Public comments (not including CBI) and supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling (703) 603-9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost \$0.15/page.

**FOR FURTHER INFORMATION CONTACT:** For further information on waste minimization, specific aspects of this notice, or public meetings regarding this notice, contact the RCRA/Superfund/EPCRA Hotline at the address and telephone numbers cited above, or Newman Smith at the U.S. Environmental Protection Agency, Office of Solid Waste, Waste Minimization Branch, 401 M Street, SW (5302W), Washington, DC 20460; telephone: (703) 308-8757, fax: (703) 308-8433.

#### **SUPPLEMENTARY INFORMATION:**

### **I. Background**

#### **A. Why Is EPA Taking This Action?**

EPA regulates thousands of chemicals and wastes under its multiple environmental authorities, and has worked with States, the regulated

community, environmental groups, and individuals to make significant progress in controlling harmful chemical releases to the environment. Notwithstanding this important progress, recent national and international attention has focused on persistent, bioaccumulative and toxic (PBT) chemicals which can pose long-term problems when released to the environment. Today's notice focuses national attention on identifying ways to reduce the generation of PBT chemicals which may be found in hazardous wastes regulated under RCRA.

Today's notice provides a mechanism for implementing the national waste minimization policy of RCRA—to reduce or eliminate the generation of hazardous waste, wherever feasible, and as expeditiously as possible. This national policy sets a clear preference for source reduction and recycling methods over end-of-pipe waste treatment and disposal methods to reduce releases of harmful chemicals to the environment. In 1988, the General Accounting Office (GAO) encouraged EPA to focus on reducing the toxicity as well as the volume of hazardous waste, and recommended that EPA "establish specific, quantifiable waste minimization goals."<sup>1</sup>

Congress expanded this national policy in the Pollution Prevention Act of 1990, and in Clean Air Act amendments of 1990. As Congress stated in the Pollution Prevention Act, "there are significant opportunities for industry to reduce or prevent pollution at the source through cost effective changes in production, operation, and raw materials use. Such changes offer industry substantial savings in reduced raw material, pollution control, and liability costs as well as help protect the environment and reduce risks to worker health and safety." The Clean Air Act promotes pollution prevention as a national goal, and includes pollution prevention as an important element in setting and achieving industrial emissions control standards.

EPA recognizes that progress has been made in reducing volumes of hazardous wastes. However, today's notice expands EPA's focus to reducing the toxicity of hazardous wastes, in addition to the volume, by reducing RCRA PBT chemical generation at the source, rather than relying on reducing the volume and/or toxicity of hazardous waste through waste treatment alone. This "PBT chemical" approach, which is

now being addressed at the international level, recognizes that small releases of PBT chemicals, even releases that are in compliance with existing regulations, may nevertheless cause a build up of human health or ecological problems over the long term.

Today's notice also responds to extensive comments EPA received from industry organizations, environmental groups, government agencies, and individuals during stakeholder meetings held during 1993 and 1994 to develop RCRA's Waste Minimization National Plan. Six principles for reducing hazardous waste generation on a national level emerged from those discussions:

- Focus on source reduction as the preferred means of environmental management, and recycling as the second preference, over treatment and disposal of hazardous wastes;
- Set environmental priorities based on risk;
- Focus on reducing the chemical composition of hazardous waste, not the volume of hazardous wastes, and carefully consider the interrelationships between hazardous waste reduction and the reduction of toxic releases to air and water;
- Set environmental goals for source reduction and recycling of priority chemicals, and track progress toward these goals. Promote accountability and recognition for regulated companies, government agencies, and other stakeholders involved in the process;
- Provide flexibility to industry and States in the selection of chemical priorities, goals for source reduction and recycling of priority chemicals, and in selecting approaches for achieving source reduction and recycling goals; and
- Involve the public.

As a result of these discussions, EPA published the Waste Minimization National Plan<sup>2</sup> (WMNP), which commits the Agency to implementing a national waste minimization program centered around these principles. Most importantly, the WMNP sets national goals to:

- Reduce, as a nation, the presence of the most persistent, bioaccumulative, and toxic (PBT) chemicals in RCRA hazardous wastes 10% by the year 2000, and at least 50 percent by the year 2005 (from a 1991 baseline);
- Promote source reduction (and recycling where RCRA PBT chemicals can not be reduced at the source) over treatment and disposal technologies; and

<sup>1</sup> New Approach Needed to Manage the Resource Conservation and Recovery Act; p. 57; United States General Accounting Office Report to Congress; July 1988.

<sup>2</sup> Waste Minimization National Plan, US EPA, 1994. EPA530-R-94-045.

- Avoid the transfer of RCRA PBT chemicals across environmental media.

EPA believes today's notice provides a strong foundation for achieving these goals. The next section describes more specifically how EPA, State governments, industry organizations, environmental groups and citizens may participate in achieving these goals.

*B. What Are Persistent, Bioaccumulative, and Toxic (PBT) Chemicals, and Why Are They an Environmental Concern?*

PBT chemicals exhibit varying degrees of three properties: Persistent (P) chemicals do not readily break down in the environment; bioaccumulative (B) chemicals are not easily metabolized and can accumulate in human or ecological foodchains through consumption or uptake; toxic (T) chemicals may be hazardous to human health or the environment in a variety of ways, depending on the chemical and the organism that is exposed. Examples of toxic effects include cancer and birth defects in humans and reduced populations and altered community structures within ecosystems. Individual chemicals may exhibit none, some, or all of these characteristics. Chemicals which exhibit PBT characteristics, once released to the environment, may present increasing long-term toxic effects to human health and the environment, even when these chemicals are released in small quantities.

RCRA PBT chemicals could be released to the environment from several types of sources, including: Leaks from hazardous waste treatment, storage or disposal units, authorized releases of PBTs in treated hazardous wastes (e.g., combustion emissions or residues which must be treated to levels which minimize threats to human health and the environment prior to land disposal), or the combined effect of *de minimis* releases of PBT chemicals permitted under multiple permitting authorities. Because of the potential risks posed by these chemicals, the international community recognizes the chemicals as a global environmental concern. EPA is creating a priority in its hazardous waste minimization program for these chemicals.

*C. How Will EPA and Other Stakeholders Use the RCRA PBT List?*

EPA will use the RCRA PBT List to:

- Measure progress toward the national goal of reducing the generation of RCRA PBT chemicals by at least half by the year 2005. EPA will measure progress using data reported to the

national Toxics Release Inventory (TRI) and other nationally available data;

- Report national progress on a periodic basis;
- Identify and acknowledge industrial sectors which contribute to national progress; and
- Promote coordinated waste minimization programs at the Federal, State, and local level.

EPA's 1986 Waste Minimization Report to Congress<sup>3</sup> concluded that promoting voluntary (rather than mandatory) waste minimization mechanisms would be the most effective means of reducing the volume and/or toxicity of RCRA regulated hazardous waste stream generation. Therefore, EPA will rely on voluntary activities to promote the reductions of RCRA PBT chemicals in hazardous waste, recognizing that some voluntary activities may ultimately take place in conjunction with a regulatory activity (e.g., voluntarily implementing pollution prevention measures to meet permit compliance requirements).

EPA will use the TRI as its primary source of data to measure and evaluate progress toward the national goal of reducing the presence of PBT chemicals in RCRA hazardous wastes by at least half by 2005. The BRS will be used to provide supplemental information and analysis. As discussed further below, the method for reporting progress is under development, and will build on the method described in today's notice for estimating the presence of PBT chemicals in RCRA hazardous wastes.

EPA is committing to its national RCRA PBT reduction goal to meet the requirements of the Government Performance and Results Act (GPRA). The GPRA sets government-wide requirements to improve performance of government programs by "managing for results" and linking programmatic budgets to performance. EPA believes its effort to reduce long term human health and ecological problems by reducing the generation of RCRA related PBT chemicals at the source is a crucial GPRA goal.

EPA will work with interested States, industry organizations, environmental groups, and citizens to promote a variety of source reduction opportunities and programs which reduce the generation of RCRA PBT chemicals at the source. For example, during informal discussions, some States, companies, citizens, and other interested parties indicated they could use the RCRA PBT List as a guide for setting waste minimization priorities for

wastes which are currently treated or disposed. Government agencies could use the List as a starting point to identify industrial sectors or particular chemicals for focusing voluntary pollution prevention technical assistance resources. Industry trade associations or individual companies could use the list for setting waste minimization priorities and reducing waste management costs. Individual organizations or a consortium of organizations could use the RCRA PBT list to develop Project XL proposals in cases where significant reductions in the generation of RCRA PBT chemicals are possible, but regulatory flexibility is needed to achieve the reductions (information on Project XL is available on the Internet at [www.epa.gov/projectxl](http://www.epa.gov/projectxl)). Citizen groups might use the RCRA PBT list to promote pollution prevention as a preferred environmental solution over waste treatment or disposal at siting hearings or other public comment or waste management forums.

EPA will also report national progress toward meeting national goals publicly, on a periodic basis, to encourage accountability.

*D. How Will EPA Measure Progress Toward the National RCRA Hazardous Waste PBT Reduction Goal?*

EPA is considering several alternatives for developing a national RCRA hazardous waste PBT chemical reduction measurement method. One of the key factors in developing a measurement method is the selection of an appropriate national database for reporting, storing and retrieving data on PBT chemicals found in RCRA hazardous waste. EPA considered, among others, two widely used national databases, the RCRA hazardous waste Biennial Reporting System (BRS) and the Toxics Release Inventory (TRI), and selected the TRI as the primary database for measuring national PBT chemical reductions in hazardous waste. The TRI is a publicly accepted and widely used source of data on toxic chemicals being used, manufactured, treated, transported, and/or released to the environment. TRI reports information on specific chemicals which may be contained in waste. Using chemical-specific TRI information enables EPA to measure reductions of chemical quantities found in wastes over time. In contrast, the Biennial Reporting System provides information on waste stream volumes, rather than chemical specific data, and will be used for supplemental analysis in cases for chemicals which are on the RCRA PBT List, but which are not reported in the TRI.

<sup>3</sup> Minimization of Hazardous Waste Report to Congress, October 1986, EPA-530-SW-86-033.

The measurement method will include only those facilities which report data to the TRI data, and who are also RCRA hazardous waste generators. EPA will publish and seek public comment on its draft measurement method in 1999.

EPA will submit national interim progress reports as part of its environmental performance reporting under the Government Performance and Results Act. A final national progress report will be submitted for the year 2005.

#### *E. How Will EPA Encourage Progress Toward the National RCRA PBT Reduction Goals?*

EPA will work with States, industry, environmental groups and other stakeholders to identify and implement a variety of implementation approaches, including workshops, technical assistance, progress reporting, partnership agreements, and regulatory reinvention and pilot projects, to promote progress toward the national RCRA PBT reduction goal. To encourage stakeholder input, EPA will conduct public meetings to listen to stakeholder comments on the List and on technical and programmatic measures which could be used to reduce the generation of PBT chemicals. Information regarding public meetings can be obtained by contacting Newman Smith by phone at (703) 308-8757, or on the Internet at [smith.newman@epa.gov](mailto:smith.newman@epa.gov). EPA will combine the efforts of these interested parties into a draft national RCRA PBT reduction implementation strategy in mid-1999. EPA will solicit public comment on the draft strategy and will publish a final implementation strategy later in 1999.

After publication of the final implementation strategy, EPA will continue to work with interested parties to promote and document source reduction and recycling successes, and measure and report progress, as stated above.

#### *F. How is Today's RCRA PBT List Different From Other Chemical Lists?*

Today's draft RCRA PBT list differs from other lists, including those used in the RCRA program, because of its purpose and design. Today's draft RCRA PBT list:

- Focuses on reducing RCRA PBT chemicals at the point of generation, before they are stored, transported, treated, recycled, or disposed on the land. Other regulatory lists are often used to set treatment technology standards, or concentration based limits on chemicals after treatment;

- Focuses on long-term human health and ecological problems, rather than more short term or acute human health or ecological effects.

- Will be used as a voluntary guide for identifying national waste minimization priorities and measuring national reduction progress, and may be used flexibly by other government agencies and companies. It is not a regulatory list that must be adhered to by all stakeholders.

The basis for developing the RCRA PBT list is explained in the following sections of this notice.

#### *G. Why Focus on the Reduction of RCRA PBT Wastes at the Point of Hazardous Waste Generation Rather Than After Treatment?*

Nearly all of the regulations promulgated under the RCRA program set standards for safe management or cleanup of hazardous wastes after they are generated or managed. To meet these standards, the regulated community has frequently used "end-of-pipe" treatment and control technologies. Significant progress has been made using "end-of-pipe" technologies, even though the costs are significant, and they do not completely eliminate releases of toxic chemicals to the environment.

To address these issues, government agencies and the regulated community have increased their focus on the use of source reduction and recycling measures in place of, or as a supplement to, end-of-pipe technologies to meet or exceed regulatory requirements and to reduce the costs of waste management.

The organizations and individuals involved in the development of the Waste Minimization National Plan strongly urged EPA to promote source reduction and recycling over waste treatment and disposal to reduce or eliminate the potential long term effects of RCRA PBT chemicals which may build up in the environment. They recognized that, even with stringent waste management standards, waste management units may fail, accidents may occur during transport and handling, and *de minimis* authorized releases may, nevertheless, occur. As a result, although many sources of these chemicals may individually be in compliance with hazardous waste and other regulations, RCRA PBT chemicals may continue to be released and build up in the environment. Reducing RCRA PBT chemical generation at the source is a more certain way of reducing or eliminating potential RCRA PBT risks to the environment, while reducing or eliminating the costs of managing wastes.

#### *H. How Will EPA Work With States, Industries, and Other Interested Parties Who Have Different Priorities?*

EPA encourages Federal government agencies, States, the regulated community and other organizations to incorporate the priorities contained in today's proposed RCRA PBT list in their current environmental priorities and programs. EPA is aware that some organizations have chemical reduction priorities which differ in varying degrees from today's List. Examples of chemical priority lists from 15 State, tribal and international organizations are in the docket for today's notice. Based on a comparison of these lists with today's draft RCRA PBT List, EPA believes many organizations will find chemicals that are common to their own and today's List.

EPA believes establishing common priorities provides an opportunity for progress toward the national RCRA PBT reduction goal. Therefore, EPA will actively work with States, industry, environmental groups and other interested parties to identify and integrate, to the extent possible, common RCRA PBT reduction priorities and multimedia implementation approaches to promote progress toward the national RCRA PBT chemical reduction goals.

EPA believes States should use flexibility available through the National Environmental Performance Partnership System (NEPPS) to address priorities for multi-media, multi-programmatic environmental protection, including the priorities contained in today's List. EPA has included a goal, similar to the WMNP goal, as a Core Performance Measure in the NEPPS program. This goal seeks to "decrease the quantity of waste generated, decrease the toxicity of waste generated, and increase recycling of wastes.

## **II. Waste Minimization Prioritization Tool Revisions and Information Stewardship**

#### *A. What is the Waste Minimization Prioritization Tool? When and How Was it Revised?*

The Waste Minimization Prioritization Tool (WMPT), a Windows-based chemical hazard screening tool developed by EPA, generates relative rankings of chemicals based on their potential to cause chronic human health and ecological problems. The WMPT generates rankings based on four sets of chemical properties, including: Chemical persistence, bioaccumulation potential, chronic human and ecological toxicity, and chemical mass. The last property,

chemical mass, is an optional variable that can be used at the user's discretion to generate rankings.

This section outlines the process EPA used to seek public review of the WMPT, an outline of comments received, and a summary of the changes made to the WMPT in response to the comments. EPA used WMPT rankings based on the first three of the four properties noted above as input to the development of the RCRA PBT List. The reasons for this are described in the following sections.

EPA released Beta Version 1.0 of the WMPT software<sup>4</sup> and the accompanying User's Guide<sup>5</sup> for public comment on June 23, 1997.<sup>6</sup> In addition to the public comments received in the docket, EPA received comments from several other sources during the public comment period, including: peer review comments obtained from technical experts in industry, environmental groups, and states during a focus group meeting in September 1997; comments from an intra-Agency technical workgroup that reviewed the WMPT as a means of identifying "PBT" chemicals; and comments from a WMPT pilot project conducted by EPA Region 9 in the Santa Clara Valley, California. Comments were received on many facets of the WMPT. EPA received a variety of comments, including recommendations to:

- Modify the weighting and aggregation of persistence, bioaccumulation, human toxicity, and ecological toxicity scores in the WMPT.
- Modify the WMPT to better represent actual risk, as opposed to hazard.
- Revise the data quality hierarchies for persistence and bioaccumulation data to place preference on measured data (e.g., data gathered in laboratory tests and field studies) rather than predicted data (i.e., data derived from predictive models).
- Improve the quality of data that are used as the basis for scoring by updating existing Agency data sources (e.g., the Integrated Risk Information System) and by incorporating new sources of data currently available to EPA or obtainable from non-EPA sources.
- Provide the rationale behind the "fenceline values" (i.e., thresholds) that separate low, medium, and high scores.
- Score metals based on bioavailability rather than environmental persistence.

- Modify the persistence scoring approach to consider partitioning to media other than water (e.g., to air).

- Modify the current low/medium/high "binning" approach to include more than three bins and better discriminate among chemicals in scoring.

- Provide a better indication of the uncertainty associated with chemical values and scores by providing additional information on the sources of data used in the WMPT and on the quality of the data.

- Complete a peer review of the WMPT.

- Provide a process for modifying data values and scores in the WMPT as new data become available.

An intra-Agency WMPT Workgroup was established to review the comments and provide recommendations on changes to the WMPT. With the purpose in mind of preparing chemical rankings for development of the RCRA PBT List, the Workgroup focused on addressing technical and scientific comments that would potentially affect RCRA PBT chemical scores. Comments that would not affect RCRA PBT chemical scores (e.g., comments recommending improving the user-friendliness of the Tool and User's Guide) were deferred until a later time.

EPA considered the comments and recommendations. As a result, the following changes were made to the WMPT:

- For each chemical, the higher of the human health and ecological concern scores (previously referred to as human health and ecological risk potential scores) was used to indicate overall concern for the purpose of developing the RCRA PBT List, rather than adding the two scores together.

- Measured data were given preference over predicted data in deriving persistence and bioaccumulation scores. Adjustments in data preferences were made in scoring bioaccumulation potential, (i.e., bioaccumulation factors were given preference over bioconcentration factors, and the log of the octanol-water partition coefficient was no longer used).

- New persistence, bioaccumulation, human toxicity, and ecological toxicity data (which meet our data quality standards) from a number of sources were included in the WMPT.

- The fenceline values separating low, medium, and high scores for persistence, bioaccumulation, and toxicity were better documented; in some cases, the fenceline values were recalculated.

- A multimedia partitioning model was used to estimate the partitioning of chemicals to air, water, soils, and sediments and to calculate overall environmental persistence, rather than estimating persistence in surface water alone.

- Data transparency was improved by better documenting data sources and indicating the preference levels for the underlying data used for scoring; some data that could not be sufficiently documented for the purpose of the WMPT were removed.

The comments received and EPA's responses are discussed in detail in the Waste Minimization Prioritization Tool Comment Response Document for the RCRA Waste Minimization PBT Chemical List Docket (referred to as the WMPT Comment Response Document below). This document is available in RCRA docket #F-98-MMLP-FFFFF and at EPA's Internet home page at [www.epa.gov/wastemin](http://www.epa.gov/wastemin).

After making the changes to the WMPT outlined above, EPA prepared spreadsheets containing revised data and scoring information. This information was used as input for developing the RCRA PBT List. As a result of the expanded and improved data used in the WMPT, approximately 2,900 chemicals receive human health or ecological concern scores, compared with approximately 1,800 chemicals in the beta version of the WMPT. Of the 2,900 chemicals, 122 chemicals score from 7 to 9 (i.e., relatively high) for human health concern and 666 score from 7 to 9 for ecological concern. Some score from 7 to 9 for both criteria. Altogether, 681 chemicals score from 7 to 9 for one or both of the two scores.

EPA has placed in the docket (#F-98-MMLP-FFFFF) a document titled Waste Minimization Prioritization Tool Spreadsheet Document for the RCRA Waste Minimization PBT Chemical List Docket (referred to below as the WMPT Spreadsheet Document) that: (1) explains changes made to the WMPT as a result of the public and peer review processes, and (2) displays spreadsheets and scoring information for 1,300 chemicals which received a score of 6 or above for human health or ecological concern. This document is also available at EPA's Internet home page at [www.epa.gov/wastemin](http://www.epa.gov/wastemin).

Information on the approximately 3,900 chemicals that scored from 3 to 5 or that are unscored is not included in the docket, since these chemicals did not appear to be appropriate candidates for the RCRA PBT List. Information on these chemicals will be provided in a future version of the WMPT.

<sup>4</sup> EPA530-C-97-003.

<sup>5</sup> Waste Minimization Prioritization Tool (Beta Test Version 1.0): User's Guide and System Documentation (EPA530-R-97-019).

<sup>6</sup> 62 FR 33868.

The WMPT Comment Response Document and WMPT Spreadsheet Document are included in today's docket to provide the reader with background information on changes made to the WMPT and its use as a foundation for the development of today's draft RCRA PBT List. The WMPT spreadsheets contained in the docket are not intended to support other applications at this time. EPA is not requesting public comment on this information, since the WMPT has already received widespread and comprehensive public review. Additional applications beyond supporting the development of today's draft RCRA PBT List will be discussed when the WMPT is re-released in 1999. That release of the WMPT revisions will include the scoring changes used in today's notice and improvements to the tool's software features.

#### *B. How Will Ensure Stewardship of the Waste Minimization Prioritization Tool and Underlying Scientific Information?*

EPA is committed to coordinating the collection of environmental data and to making it available to the public through the Agency's "Reinventing Environmental Information Initiative." In 1997,<sup>7</sup> EPA announced three important information management reforms, which:

- Establish key data standards to improve the value of environmental information, data sharing and integration;
- Provide universal voluntary access to electronic reporting to reduce burdens and improve data quality and timeliness; and
- Implement these data standards and electronic reporting reforms in the Agency's national systems in partnership with the states through the One Stop Program.

Consistent with these principles, EPA commits to maintaining sound scientific information as a foundation for reducing RCRA PBT generation. The EPA has taken measures to practice principles of information stewardship in the development of today's draft RCRA PBT List by:

- Identifying the most up to date and documented information that is readily available;
- Excluding undocumented scientific information;
- Seeking expert advice to make assumptions, assess data quality and weigh contradictory information;

- Making information about data sources, data quality, assumptions publicly known;
- Inviting public review and comment on the data used; and
- Making appropriate adjustments to information.

The Office of Solid Waste intends to follow these principles of information stewardship to ensure the integrity of data used in the Waste Minimization Prioritization Tool. As noted above, EPA will release an updated, user-friendly version of the WMPT in 1999, and will discuss how best to maintain stewardship of this tool and the underlying data with interested organizations and individuals at that time.

### **III. Development of Today's Draft RCRA PBT List**

The Agency followed several steps to develop today's draft RCRA Waste Minimization PBT Chemical List (referred to as the RCRA PBT List below). Each of these steps is discussed in more detail below.

#### *A. How Were Initial Candidates for the RCRA PBT List Identified?*

The first step in developing today's draft RCRA PBT List was to assemble an initial list of candidate chemicals for further examination. EPA drew from two sources to establish this initial candidate chemical list: (1) The Waste Minimization Prioritization Tool discussed above, and (2) a composite list of PBT chemicals identified as priorities by other EPA program offices. This step is discussed below, and is described in the Chemical Screening Report for the RCRA PBT List Docket (referred to below as the Screening Report), which is located in RCRA docket number F-98-MMLP-FFFFF.

#### **1. Candidates From the Waste Minimization Prioritization Tool**

EPA selected as candidates from the WMPT those chemicals which scored 7 or higher (on a scale of 3-9) for either human health concern or ecological concern. A total of 681 chemicals scored in the WMPT met this criterion. EPA then grouped certain polycyclic aromatic hydrocarbons into a single polycyclic aromatic hydrocarbons category, and grouped individually listed polychlorinated biphenyls with the existing polychlorinated biphenyls category, resulting in a total of 660 candidate chemicals and chemical groups.

EPA selected the cut-off score of 7 for human health or ecological concern in order to ensure that chemical candidates represent at least moderately high

concern for PBT. In order to attain a score of 7, a chemical must receive the highest WMPT score for at least two of the three factors (P, B and T) or the highest score for one factor and moderate scores for the other two factors. EPA believes that a higher cut-off score would be overly restrictive, eliminating from further consideration many chemicals of significant RCRA PBT concern, while a lower cut-off score would be unnecessarily expansive, drawing in many chemicals which would not represent a sufficiently high level of RCRA PBT concern for this national PBT waste minimization effort.

#### **2. PBT Priorities Identified by Other EPA Programs**

In addition to drawing candidate chemicals from the WMPT, EPA considered PBT chemical priorities identified by other EPA programs through internal PBT coordination efforts. This list of 34 chemicals included 18 chemicals which scored below 7 for human health or ecological concern in the WMPT, and 16 chemicals that were either not included in the WMPT, or were included, but were not scored because there were insufficient data. These chemicals were included in the candidate pool for development of the RCRA PBT List to determine the extent to which they may also be a RCRA PBT waste minimization candidate. Including these 34 chemicals in the candidate pool brought the total number of candidate chemicals and chemical groups to 694.

#### *B. What Inclusion/Elimination Criteria Were First Applied to the Candidate Chemicals?*

After assembling the initial candidate chemical list, EPA eliminated chemicals that would not be good candidates for RCRA waste minimization efforts because they are unlikely to be present in RCRA hazardous waste in significant quantities, or are present, but are not highly toxic. Three criteria were used to screen out these chemicals: pesticides which are banned from production and use; chemicals with zero reported quantities in waste; and chemicals with low WMPT toxicity scores. This step is summarized below, and is described in detail in the Screening Report.

#### **1. Banned Pesticides**

EPA first eliminated those chemicals that are pesticides banned from use in the United States and are not known to have other, non-pesticidal sources or uses. This screen eliminated 28 chemicals from further consideration, including a number of well-known PBT chemical priorities such as DDT. EPA

<sup>7</sup> Administrator Carol Browner and Deputy Administrator Fred Hansen. EPA Common Sense Initiative Meeting. July 21, 1997.

did not eliminate from further consideration pesticides that are "severely restricted," but not banned in the U.S.

### 2. Chemicals Not Present in RCRA Wastes

EPA also eliminated from further consideration chemicals that are not likely to be found in RCRA hazardous waste, based on quantities reported in the Agency's Toxics Release Inventory (TRI) database<sup>8</sup> and the National Hazardous Waste Constituent Survey (NHWCS).<sup>9</sup> Chemical quantities reported in the TRI were adjusted to estimate quantities present in hazardous waste streams by: including only TRI reporters who had RCRA ID numbers; in the case of underground injected wastes, including only TRI reporters with RCRA ID numbers who also had RCRA UIC (Underground Injection [well] Code) ID numbers; and excluding air and water releases from TRI production-related wastes. This screen eliminated 510 candidate chemicals, leaving 156 chemicals to be considered further in developing the RCRA waste minimization list. Some highly PBT chemicals were eliminated in this step (e.g., dioxin) because they are generated in very small quantities, which are not reported in the TRI. These were flagged and re-examined in the last step, described below in Section E.

### 3. Chemicals With Low Toxicity

Finally, EPA checked to ensure that none of the 156 chemicals passing the above screens became a candidate based on high P and/or B scores, but had a low score for human health or ecological toxicity. The rationale for this screen was that, even though some chemicals may persist or bioaccumulate in the environment, they should not be a candidate for the national RCRA PBT List if the chemical is not likely to be at least moderately toxic in the environment. None of the 156 candidate chemicals had low toxicity scores.

#### C. How Were the Remaining Candidate Chemicals Ranked?

To identify the best candidate chemicals for RCRA source reduction and recycling efforts, EPA developed four "primary" criteria for ranking the remaining chemicals. These criteria included: (1) Each chemical's PBT score

from the WMPT; (2) chemical quantity and prevalence (or frequency of occurrence) in hazardous waste; (3) evidence that the chemical is present in the environment, particularly at levels of concern; and (4) the degree to which the chemical is a concern to the RCRA program.

Ranking the candidate chemicals was completed by: Summing subcriteria scores within each of the four primary criteria discussed above; converting the scores for each primary criterion to a 25 point scale (i.e., the Agency gave equal weight to the four primary criteria); summing scores for each chemical; and arranging the chemicals in rank order on a scale of 1–100. The individual subcriteria were scored on a 0, 1, 2, 3 scale (except where noted). The values on this scale were assigned to different ranges of data values by examining the underlying data distributions and using natural breaks in the distributions or creating comparably sized groups. The process used to score and rank chemicals in this step is summarized below and is described in detail in the Chemical Ranking Report for the RCRA PBT List Docket (referred to below as the Ranking Report), located in RCRA docket number F-98-MMLP-FFFFF.

#### 1. PBT Scores

In this step, each candidate chemical was scored based on the higher of its WMPT human or ecological concern scores. The scoring approach is provided in Table 1 below. Each chemical with a WMPT score was assigned a subcriterion score from 0–3. Chemicals not scored in the WMPT were ranked by summing and normalizing scores for the remaining three primary criteria, to compensate for the missing WMPT score.

TABLE 1.—PBT CHARACTERISTICS SCORING

| PBT characteristics subcriterion   | Sub-criterion score |
|--|---------------------|
| Higher of WMPT human health and ecological concern scores equals 9 .....   | 3                   |
| Higher of WMPT human health and ecological concern scores equals 8 .....   | 2                   |
| Higher of WMPT human health and ecological concern scores equals 7 .....   | 1                   |
| WMPT human health and ecological concern scores are both less than 7 ..... | 0                   |

#### 2. Quantity and Prevalence

The Agency believes that RCRA PBT chemicals which occur in greater quantities, or are more prevalent, in hazardous waste should be given a higher national priority for RCRA waste minimization than other PBT chemicals. Therefore, EPA assigned higher scores to chemicals with greater quantity, or prevalence, in hazardous waste.

EPA used TRI and NHWCS data to determine chemical quantities in waste and used Biennial Reporting System (BRS) data<sup>10</sup> to determine waste stream quantities associated with each chemical. EPA also used TRI, NHWCS, and BRS data to determine the number of facilities generating or managing each chemical in hazardous waste.

TRI quantity and prevalence data were adjusted to identify and estimate chemical quantities and prevalence in RCRA hazardous waste by: (1) Including only TRI reporters who had RCRA ID numbers; (2) in the case of underground injected wastes, including only TRI reporters with RCRA ID numbers who also had RCRA UIC ID numbers; and (3) excluding air and water releases from TRI production-related waste. NHWCS quantity and prevalence data were used only where TRI quantity and prevalence data were unavailable. To estimate the quantities of BRS waste streams and number of generators associated with particular chemicals, EPA used the RCRA Chemical-Waste Code Crosswalk,<sup>11</sup> which identifies hazardous waste codes that may be associated with particular chemicals.

The TRI reports quantity information on both metals and metal compounds. The quantity information reported for a metal compound only includes the metal component of the compound. In keeping with this approach for metal reporting, EPA added together the quantities reported in TRI as metals and metal compounds.

The TRI/NHWCS score and the BRS score were weighted equally (i.e., were added together and divided by two) in deriving both the quantity and prevalence subcriteria scores. If the BRS score was missing for a chemical, the TRI/NHWCS score was used as the quantity or prevalence subcriterion score. The quantity subcriterion score was added to the prevalence subcriterion score in deriving the

<sup>8</sup> U.S. EPA. 1997. 1991 and 1995 Toxic Release Inventory (TRI) Data.

<sup>9</sup> U.S. EPA. 1998. National Hazardous Waste Constituent Survey. Office of Solid Waste. Washington, DC. This is a survey of chemical constituent presence in hazardous waste streams managed by RCRA treatment, storage and disposal facilities.

<sup>10</sup> U.S. EPA. 1997. Biennial Reporting System Flat Files. Office of Solid Waste and Emergency Response, Washington, DC.

<sup>11</sup> The RCRA Chemical-Waste Code Crosswalk (EPA530-D-97-005) is from the beta version of the WMPT; it is included in RCRA Docket #F-98-MMLP-FFFFF. Chemicals not listed in the crosswalk were not evaluated on the BRS-based criteria.

quantity/prevalence criterion score for each chemical. The scoring for quantity and prevalence is presented in Table 2 below.

TABLE 2.—QUANTITY AND PREVALENCE SCORING

| Quantity/prevalence subcriterion             | Value range                    | Subcriterion score |
|--|--------------------------------|--------------------|
| TRI chemical quantity (pounds/yr) .....      | Greater than 10,000,000 .....  | 3                  |
|  | 1,000,000–10,000,000 .....     | 2                  |
|  | 1–1,000,000 .....              | 1                  |
|  | Less than 1 .....              | 0                  |
| NHWCS chemical quantity (pounds/yr) .....    | Greater than 1,000,000 .....   | 3                  |
|  | 100,000–1,000,000 .....        | 2                  |
|  | 1–100,000 .....                | 1                  |
|  | Less than 1 .....              | 0                  |
| BRS waste stream quantity (tons/yr) .....    | Greater than 100,000,000 ..... | 3                  |
|  | 10,000,000–100,000,000 .....   | 2                  |
|  | 1–10,000,000 .....             | 1                  |
|  | Less than 1 .....              | 0                  |
| TRI number of generators .....               | More than 99 .....             | 3                  |
|  | 10–99 .....                    | 2                  |
|  | 1–9 .....                      | 1                  |
|  | 0 .....                        | 0                  |
| NHWCS number of handlers <sup>12</sup> ..... | More than 10 .....             | 3                  |
|  | 5–10 .....                     | 2                  |
|  | 1–4 .....                      | 1                  |
|  | 0 .....                        | 0                  |
| BRS number of generators .....               | More than 9,999 .....          | 3                  |
|  | 1,000–9,999 .....              | 2                  |
|  | 1–999 .....                    | 1                  |
|  | 0 .....                        | 0                  |

### 3. Environmental Presence<sup>12</sup>

The Agency believes that PBT chemicals which are detected in the environment more frequently than other chemicals should be given higher priority for reduction through source reduction and recycling. EPA ranked each chemical's "presence in the environment" using measurement indicators contained in the following three national databases: (1) EPA's Fish

Advisory Database <sup>13</sup> (EPA used the most current year of fish advisory data in the U.S.—1997); (2) EPA's National Sediment Inventory <sup>14</sup> (EPA used data on sediment contamination in the U.S. for all years contained in the database; and (3) the Agency for Toxic Substances and Disease Registry's Hazdat Database <sup>15</sup> (EPA used data on chemicals found in the toxic cleanup sites identified on the EPA's Superfund National Priority List (NPL) covered

under the Comprehensive Environmental Response, Compensation and Liability Act.

Scores were developed using the scoring approach in Table 3 below. Each environmental presence subcriterion was scored from 0–3. The scores for the three subcriteria were weighted equally (in this case being added together) in deriving an environmental presence criterion score for each PBT chemical.

TABLE 3.—ENVIRONMENTAL PRESENCE SCORING

| Environmental presence subcriterion           | Value range                    | Subcriterion score |
|---|--------------------------------|--------------------|
| Fish Advisory Database (1997 data) .....      | More than 99 advisories .....  | 3                  |
|   | 10–99 advisories .....         | 2                  |
|   | 1–9 advisories .....           | 1                  |
|   | No advisories .....            | 0                  |
| National Sediment Inventory (1980–1993) ..... | More than 999 detections ..... | 3                  |
|   | 100–999 detections .....       | 2                  |
|   | 1–99 detections .....          | 1                  |
|   | No detections .....            | 0                  |
| ATSDR HazDat Database (all NPL sites) .....   | More than 499 sites .....      | 3                  |
|   | 100–499 sites .....            | 2                  |
|   | 1–99 sites .....               | 1                  |
|   | No sites .....                 | 0                  |

<sup>12</sup> The number of handlers is the number of RCRA treatment, storage, or disposal facilities that managed a chemical, rather than the number of generators of the chemical.

<sup>13</sup> U.S. EPA. 1998. 1997 National Listing of Fish Consumption Advisories. Office of Water,

Washington, DC. [www.epa.gov/OST/fishadvice](http://www.epa.gov/OST/fishadvice). June.

<sup>14</sup> U.S. EPA. 1997. The Incidence and Severity of Sediment Contamination in Surface Waters of the United States; Volume 1: The National Sediment Quality Survey. Office of Science and Technology, Washington, DC. EPA/823/R-97/006.

<sup>15</sup> Agency for Toxic Substances and Disease Registry. 1998. Hazardous Substance Release/Health Effects Database. website: [atsdr1.atsdr.cdc.gov/8080/hazdat/html](http://atsdr1.atsdr.cdc.gov/8080/hazdat/html).

EPA used the ATSDR data since no comparable data were readily available from RCRA corrective action sites.



#### 4. RCRA Programmatic Concern

EPA believes PBT chemicals that are of particular concern to the RCRA program should be given higher priority in developing today's draft RCRA PBT List than PBT chemicals identified in the WMPT or other programs that are not a particular concern to the RCRA program. To identify "RCRA-relevant" PBT chemicals, EPA selected the candidate PBT chemicals which are found on one or more regulatory lists used in the RCRA hazardous waste generation, management, and corrective action programs. The scoring scheme for these chemicals is provided in Table 4 below.

EPA used a wider subcriterion scoring range (0–4) for this criterion to reflect the broad range of RCRA programmatic concerns. This wider scoring range was then normalized (i.e., was converted to a 25 point scale) so that the criterion was weighted equally with the other primary criteria.

A score of 4 was assigned to PBT chemicals that: (1) Are capable of forming dense nonaqueous phase liquids (DNAPLs) that make groundwater cleanups particularly difficult;<sup>16</sup> (2) are identified as "difficult to treat" chemicals under the Land Disposal Restrictions (LDR) program;<sup>17</sup> or (3) are targeted for co-regulation under RCRA and the Clean Air Act

Section 112 in EPA's proposed maximum achievable control technology (MACT) combustion rule for hazardous waste incinerators, cement kilns or light weight aggregate kilns, or are currently regulated under the RCRA boilers and industrial furnaces (BIF) rule (since chemicals regulated under these rules could potentially be transferred to the air or soil media after combustion).<sup>18, 19</sup>

Chemicals which are not on any of the regulatory lists discussed in the previous paragraph, but are on the Toxicity Characteristic (TC) list (40 CFR 261.24) or the Appendix VII list of chemicals, which is used as the basis for hazardous waste listings (40 CFR part 261), are assigned a score of 3. The Agency has historically taken regulatory actions in the RCRA program based on risk assessments and damage cases involving these chemicals.

If a chemical was not on any of the lists noted above but is regulated under RCRA based on technological standards rather than risk-based standards (i.e., chemicals covered by the Universal Treatment Standards (UTS) list (40 CFR 268.48), it was assigned a score of 2. If a chemical was not on any of the lists noted above, but was on the RCRA P list of acute hazardous waste (40 CFR 261.33), the U list of toxic waste (40 CFR 261.33), the Appendix VIII hazardous waste constituent list (40 CFR part 261), or the Appendix IX ground water monitoring list (40 CFR part 264), the chemical was assigned a score of 1. These chemicals are regulated under RCRA, but are of lesser concern. For instance, Appendix IX chemicals are used to set permit

parameters. However, if they are not on the lists mentioned above, are of lesser concern. In addition, although P list chemicals are of concern due to their acute hazards, they are generated infrequently and usually in small quantities.

Chemicals not found on any of the lists discussed above received a 0 score. The scoring of subcriteria for RCRA Programmatic Concern is summarized in Table 4 below.

TABLE 4.—RCRA PROGRAMMATIC CONCERN SCORING

| RCRA programmatic concern subcriterion   | Subcriterion score |
|--|--------------------|
| Chemicals contained on any of the following lists: (1) Chemicals that can form dense non-aqueous phase liquids; (2) chemicals identified as "difficult to treat," or (3) chemicals regulated under the MACT rule for hazardous waste incinerators, cement kilns and light weight aggregate kilns, or the RCRA rule for boilers and industrial furnaces ..... | 4                  |
| Presence on the toxicity characteristic list or the Appendix VII list of chemicals serving as the basis for hazardous waste listings .....   | 3                  |
| Presence on the land disposal restrictions universal treatment standards list .....  | 2                  |
| Presence on the RCRA P list of acute hazardous waste, the U list of toxic waste, the Appendix VIII hazardous waste constituent list, or the Appendix IX ground water monitoring list .....   | 1                  |
| Chemical not present on any of the above RCRA lists .....  | 0                  |

<sup>16</sup> See the following three references:

Cohen, R.M., J.W. Mercer, and J. Matthews. 1993. DNAPL Site Evaluation. CRC Press, Boca Raton, FL.

U.S. EPA. 1993. Evaluation of the Likelihood of DNAPL Presence at NPL Sites, National Results. Office of Solid Waste and Emergency Response, Washington, DC. EPA/540/R-93/073.

U.S. EPA. 1991. Estimating Potential for Occurrence of DNAPL at Superfund Sites. Office of Solid Waste and Emergency Response, Environmental Research Laboratory, Washington, DC. EPA publication 9355-4-07FS.

<sup>17</sup> Eby, E. 1998. Internal communication. Waste Treatment Branch, Office of Solid Waste, U.S. EPA. May.

<sup>18</sup> U.S. EPA. 1991. Burning of Hazardous Waste in Boilers and Industrial Furnaces: Final Rule. 56 FR 7134. February 21.

<sup>19</sup> U.S. EPA. 1996. Revised Standards for Hazardous Waste Combustors: Proposed Rule. 61 FR 173858. April 19.

The Agency conducted limited sensitivity testing of the ranking methodology by observing changes in the rankings in response to modifying the ranking criteria. Several scenarios were tested, including eliminating each of the primary criteria in turn and eliminating both the RCRA Relevance and Environmental Presence criteria together.

In general, the methodology appeared to be fairly robust in its identification of the top ranking chemicals. Scenarios which alternatively dropped the RCRA Relevance, Quantity/Prevalence, and the PBT Score criteria each displaced roughly 10 chemicals from the top 50. Elimination of the Environmental Presence criterion had less of an impact on the rankings than dropping the other criteria. This indicates that, when one of the four criteria is removed from the ranking method, the remaining criteria and data support the ranking to a substantial degree.

In a more drastic sensitivity scenario, dropping two of the criteria, RCRA Relevance and Environmental Presence, together substantially altered the rankings—30 chemicals in the top 50 were displaced, and several chemicals changed by more than 50 rank positions. These results are not surprising considering the substantial change to the scoring method (half of the criteria are removed). For further information, see the report Revised Chemical Ranking Methodology Testing Results in RCRA docket number F-98-MMLP-FFFFF.

#### *D. What Cutoff Was Applied to the Ranked Chemicals to Obtain the Draft RCRA PBT List?*

After ranking the 150 candidate chemicals, EPA selected a cutoff value to identify the "top tier" of chemicals for tracking on a national level. EPA narrowed the candidate list to the 61 chemicals which had a score of 50 points (the half way point on the scoring scale) as a basis for inclusion in the draft RCRA PBT List proposed today. EPA determined that a national list of 50 to 60 chemicals was appropriate, given limited Agency, State, and private resources to reduce and measure these chemicals.

#### *E. What Final Adjustments Were Made to the Draft RCRA PBT List?*

As a final step, EPA added and removed certain chemicals from the list for the particular reasons described below. Adding and removing chemicals reduced the draft RCRA PBT List from 61 to 53 chemicals.

##### 1. U.S./Canada Binational Agreement Level 1 Chemicals

EPA added dioxins, furans, and octachlorostyrene to the RCRA PBT List because of their high priority on the "Level 1" list of the U.S./Canada Binational Agreement.<sup>20</sup> Four other Level 1 chemicals were already among the top tier chemicals for the RCRA PBT List.<sup>21</sup> Nine chemicals on the Level 1 list, including eight banned pesticides and alkyl lead, are excluded because they are either no longer produced (e.g., banned pesticides), or are found in very limited quantities in wastes from only a few production processes (e.g., alkyl lead).<sup>22</sup> In either case, these chemicals are not very amenable to reductions through waste minimization. The Binational Agreement and the Level 1 list are available for review in RCRA docket number F-98-MMLP-FFFFF.

##### 2. Chemicals With Low or no PBT Scores

The Agency initially added chemicals identified by other EPA programs to the candidate list to provide a comprehensive starting point in the RCRA PBT List development process. At this final step in the RCRA PBT List development process, six chemicals were removed for the following reasons. Five of the chemicals—tetrachlorethylene, trichlorethylene, methylene chloride, 1,2-dichloroethane, and 1,1,2,2-tetrachloroethane—were removed because their WMPT PBT scores are below 7. Although individual States may wish to pursue reductions in these chemicals, EPA determined they are not among the most highly toxic for a national list. The sixth, silver, was removed because it has no PBT score.

##### 3. PCBs

The Agency removed the PCB chemical group from the RCRA PBT List

because production of PCBs is banned in the U.S. and waste minimization opportunities for PCBs in process waste streams are believed to be very limited.

##### 4. Di-n-octyl Phthalate and Butyl Benzyl Phthalate

The Agency previously removed both of these chemicals from the EPCRA Section 313 List of Toxic Chemicals in response to delisting petitions. Consequently, the Agency examined these chemicals more closely to determine whether to continue to include them on the draft RCRA PBT List. The Agency decided to remove di-n-octyl phthalate from the draft RCRA PBT List because data developed in response to that delisting petition indicated that the human and ecological toxicity data were not conclusive. However, EPA has retained butyl benzyl phthalate on the draft RCRA PBT List because the ecological toxicity criteria considered for delisting from the EPCRA list were different than the criteria used in the WMPT for determining high levels of concern for ecological toxicity.

##### 5. Hexachlorocyclohexane Isomers

The Agency removed the alpha, beta, and delta hexachlorocyclohexane isomers and retained the gamma isomer. The gamma isomer is believed to be the predominant PBT isomer in waste streams, and achieving waste minimization for this isomer would result in reductions in the other isomers as well.

#### **IV. EPA's Draft RCRA Waste Minimization PBT Chemical List and Issues for Public Comment**

##### *A. Which Chemicals Are Included on the Draft RCRA PBT List?*

Table 5 below presents EPA's draft RCRA PBT List. The chemicals are listed in alphabetical order. No rank ordering is intended in this List, and, in fact, the List treats these chemicals as equal environmental priorities. The Chemical Abstract Service Registry Number (CASRN) is also shown, where available.

TABLE 5.—DRAFT RCRA PBT LIST

|                     | CASRN |
|---------------------|-------|
| Dioxins and Furans: |       |

<sup>20</sup> U.S. EPA. 1997. Great Lakes Binational Toxics Strategy. Great Lakes National Program Office, Chicago, IL. [www.epa.gov/grtlakes/p2/bnsintro.html](http://www.epa.gov/grtlakes/p2/bnsintro.html)

<sup>21</sup> These four chemicals include hexachlorobenzene, mercury and compounds, PCBs, and benzo(a)pyrene. PCBs were subsequently removed from the proposed RCRA PBT List (see discussion below), and benzo(a)pyrene was

included in the category polycyclic aromatic hydrocarbons.

<sup>22</sup> The eight banned pesticides include aldrin, dieldrin, chlordane, DDT, DDD, DDE, toxaphene, and mirex.

TABLE 5.—DRAFT RCRA PBT LIST—Continued

|  | CASRN      |
|--|------------|
| Dioxins (PCDD) .....                       | .....      |
| Furans (PCDF) .....                        | .....      |
| Chlorinated Solvents:                      |            |
| Chloroform .....                           | 67-66-3    |
| 1,1-Dichloroethane .....                   | 75-34-3    |
| 1,1,1-Trichloroethane .....                | 71-55-6    |
| Chlorobenzenes:                            |            |
| 1,2-Dichlorobenzene .....                  | 95-50-1    |
| 1,3-Dichlorobenzene .....                  | 541-73-1   |
| 1,4-Dichlorobenzene .....                  | 106-46-7   |
| 1,2,4-Trichlorobenzene .....               | 120-82-1   |
| 1,2,4,5-Tetrachlorobenzene .....           | 95-94-3    |
| Pentachlorobenzene .....                   | 608-93-5   |
| Hexachlorobenzene .....                    | 118-74-1   |
| Other Halogenated Organics:                |            |
| 4-Bromophenyl phenyl ether .....           | 101-55-3   |
| Hexachlorobutadiene .....                  | 87-68-3    |
| Octachlorostyrene .....                    | 29082-74-4 |
| Pesticides                                 |            |
| alpha-Endosulfan .....                     | 959-98-8   |
| beta-Endosulfan .....                      | 33213-65-9 |
| Heptachlor .....                           | 76-44-8    |
| Heptachlor epoxide .....                   | 1024-57-3  |
| gamma-Hexachlorocyclohexane .....          | 58-89-9    |
| Methoxychlor .....                         | 72-43-5    |
| Pentachloronitrobenzene .....              | 82-68-8    |
| Pentachlorophenol .....                    | 87-86-5    |
| 2,4,5-Trichlorophenol .....                | 95-95-4    |
| Organonitrogens:                           |            |
| Nitrobenzene .....                         | 98-95-3    |
| Nonhalogenated Phenolics:                  |            |
| Phenol .....                               | 108-95-2   |
| 2,4,6-tris-(1,1-Dimethylethyl)phenol ..... | 732-26-3   |
| Phthalate esters:                          |            |
| Bis-(2-ethylhexyl) phthalate .....         | 117-81-7   |
| Butylbenzyl phthalate .....                | 85-68-7    |
| Dibutyl phthalate .....                    | 84-74-2    |
| Polycyclic aromatic hydrocarbons**:        |            |
| Acenaphthene .....                         | 83-32-9    |
| Acenaphthylene .....                       | 208-96-8   |
| Anthracene .....                           | 120-12-7   |
| Benzo(g,h,i)perylene .....                 | 191-24-2   |
| Fluoranthene .....                         | 206-44-0   |
| Fluorene .....                             | 86-73-7    |
| 2-Methylnaphthalene .....                  | 91-57-6    |
| Naphthalene .....                          | 91-20-3    |
| PAH group (as defined in TRI).             |            |
| Phenanthrene .....                         | 85-01-8    |
| Pyrene .....                               | 129-00-0   |
| Metals                                     |            |
| Antimony .....                             | 7440-36-0  |
| Arsenic .....                              | 7440-38-2  |
| Beryllium .....                            | 7440-41-7  |
| Cadmium .....                              | 7440-43-9  |
| Chromium .....                             | 7440-47-3  |
| Copper .....                               | 7440-50-8  |
| Lead .....                                 | 7439-92-1  |
| Mercury .....                              | 7439-97-6  |
| Nickel .....                               | 7440-02-0  |
| Selenium .....                             | 7782-49-2  |
| Zinc .....                                 | 7440-66-6  |
| Cyanide .....                              | 57-12-5    |

\*\* The Toxics Release Inventory reports some polycyclic aromatic hydrocarbons (PAHs) as a group, and reports other PAHs individually. The 10 individual PAHs listed in this table are not included in the TRI PAH group. See the *Screening Report* for a list of PAHs included in the TRI PAH group.

### *B. What Issues is EPA Requesting Public Comment On?*

The Agency welcomes public comment on any aspect of the methodology used to develop the draft RCRA PBT List, including the data sources, ranking criteria and scoring schemes, the cutoff criteria, and the final adjustments to the List. The Agency also requests comment on the specific issues listed below. The Agency is not requesting comment on the data or methodology used to develop the WMPT, or the scoring results of the WMPT. The WMPT went through a thorough, comprehensive and constructive public review and comment process. EPA has incorporated its response to those comments in the underpinnings of today's notice and therefore does not believe comments regarding the WMPT are generally pertinent to this effort.

Specific issues for comment include:

#### 1. Banned Chemicals

Is it appropriate to eliminate chemicals from consideration for the draft RCRA PBT List because they are no longer used in production or generated in hazardous waste, or are generated in very limited quantities from very few production processes, and therefore are not good candidates for future reductions through waste minimization? Is it appropriate to eliminate banned pesticides, PCBs, and alkyl lead for this reason, as the Agency has done in developing the List?

#### 2. Waste Minimization Feasibility

Should the agency eliminate from consideration PBT chemicals contained in hazardous waste for which there are few feasible waste minimization options available, or should the agency consider these as an incentive to encourage research and development of waste minimization methods for these chemicals?

#### 3. "Non-measurable" Chemicals

The draft RCRA PBT List includes 16 chemicals that were reported in the National Hazardous Waste Constituent Survey but are not reported in the Toxics Release Inventory, and therefore, cannot be easily tracked over time. Is it appropriate to include on the List chemicals for that TRI data, or other annual chemical-specific data, are not readily available for tracking national chemical reduction progress? Are there other reliable national sources of chemical reporting data that could be used to track generation and reductions of these chemicals?

#### 4. Chemicals With Very High P, B, and/or T Values

Should chemicals with very high data values for persistence, bioaccumulation potential, human toxicity, and/or ecological toxicity (e.g., with values at the top end of the data distributions) be considered for addition to the RCRA PBT List, even though TRI data are not available for tracking progress? How would progress be measured for these chemicals?

#### 5. Chemicals With Low Reported Quantities

Several chemicals on the RCRA PBT List are estimated in the National Hazardous Waste Constituent Survey to be generated in quantities of less than 100 pounds per year. The Agency did not use a specific quantity cutoff in developing the RCRA PBT List. Should a quantity cutoff be used? If so, what is the appropriate value for the cutoff? Should different cutoffs be used for chemicals which are the most toxic compared to others which are less toxic? If so, what should those cutoffs be?

#### 6. Priorities Identified by Other Organizations.

Should EPA add to the RCRA PBT List State or other organization's priority chemicals which do not already appear on the List? Among these chemicals, should those with low or no PBT scores (e.g., waste solvents), or those with low or no chemical quantities (e.g., some Level 1 U.S./Canada Binational Agreement chemicals) be included? A list of chemical priorities identified by several States is located in RCRA docket number F-98-MMLP-FFFFF.

#### 7. Including Recycled Wastes in Determining Quantities of RCRA-Relevant Waste Associated with Chemicals

In considering the quantity and prevalence of candidates for the RCRA PBT List (step C.4 above), the Agency included quantities that were recycled in its scoring procedure. Should recycled quantities be included when determining the quantities of chemicals associated with hazardous wastes in developing the RCRA PBT List, or should EPA measure chemicals only at the point of generation?

Dated: October 30, 1998.

**Elizabeth A. Cotsworth,**

*Acting Director, Office of Solid Waste.*

[FR Doc. 98-29952 Filed 11-6-98; 8:45 am]

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### FARM CREDIT ADMINISTRATION

#### Farm Credit Administration Board

#### Sunshine Act Meeting

**AGENCY:** Farm Credit Administration.

**SUMMARY:** Notice is hereby given, pursuant to the Government in the Sunshine Act (5 U.S.C. 552b(e)(3)), of the forthcoming regular meeting of the Farm Credit Administration Board (Board).

**DATE AND TIME:** The regular meeting of the Board will be held at the offices of the Farm Credit Administration in McLean, Virginia, on November 12, 1998, from 9:00 a.m. until such time as the Board concludes its business.

**FOR FURTHER INFORMATION CONTACT:** Floyd Fithian, Secretary to the Farm Credit Administration Board, (703) 883-4025, TDD (703) 883-4444.

**ADDRESS:** Farm Credit Administration, 1501 Farm Credit Drive, McLean, Virginia 22102-5090.

**SUPPLEMENTARY INFORMATION:** Parts of this meeting of the Board will be open to the public (limited space available), and parts of this meeting will be closed to the public. In order to increase the accessibility to Board meetings, persons requiring assistance should make arrangements in advance. The matters to be considered at the meeting are:

#### Open Session

##### A. Approval of Minutes

—October 8, 1998 (Open and Closed)

##### B. New Business

##### 1. Regulation

—Balloting and Stockholder Reconsideration Issues (Final) [12 CFR Part 611]

##### 2. Other

—Statement on Regulatory Burden (Notice of Intent; Comment Period Extension)

#### Closed Session\*

##### C. Report

—OSMO Report

\* Session Closed—Exempt pursuant to 5 U.S.C. 552b(c)(8) and (9).

Date: November 5, 1998.

**Floyd Fithian,**

*Secretary, Farm Credit Administration Board.*

[FR Doc. 98-30102 Filed 11-5-98; 1:18 pm]

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