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Date: December 2, 2005.

Robert E. Polson,

Office of the Secretary, Paperwork Reduction Act Reports Clearance Officer.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

Agency for Toxic Substances and Disease Registry

[ATSDR-215]

Update on the Status of the Superfund Substance-Specific Applied Research Program

Editorial Note: FR Doc. 05-23361 was originally published at page 71506 in the issue of Tuesday, November 29, 2005. The corrected document is republished below in its entirety, due to printing errors.

AGENCY: Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services (HHS).

ACTION: Notice.

SUMMARY: This Notice provides the status of ATSDR's Superfund-mandated Substance-Specific Applied Research Program (SSARP) which was last updated in a **Federal Register** notice in 2002 (67 FR 4836). Authorized by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also known as the Superfund statute), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) [42 U.S.C. 9604 (i)], this research program was initiated on October 17, 1991. At that time, a list of priority data needs for 38 priority hazardous substances frequently found at waste sites was

announced in the **Federal Register** (56 FR 52178). The list was subsequently revised based on public comments and published in final form on November 16, 1992 (57 FR 54150).

The 38 substances, each of which is found on ATSDR's Priority List of Hazardous Substances (68 FR 63098, November 7, 2003), are aldrin/dieldrin, arsenic, benzene, beryllium, cadmium, carbon tetrachloride, chloroethane, chloroform, chromium, cyanide, p,p'-DDT, DDE, DDD, di(2-ethylhexyl) phthalate, lead, mercury, methylene chloride, nickel, polychlorinated biphenyl compounds (PCBs), polycyclic aromatic hydrocarbons (PAHs—includes 15 substances), selenium, tetrachloroethylene, toluene, trichloroethylene, vinyl chloride, and zinc.

On July 30, 1997, priority data needs for 12 additional hazardous substances frequently found at waste sites were determined and announced in the **Federal Register** (62 FR 40820). The 12 substances, each of which is included in ATSDR's Priority List of Hazardous Substances, are chlordane, 1,2-dibromo-3-chloropropane, di-n-butyl phthalate, disulfoton, endrin (includes endrin aldehyde), endosulfan (alpha-, beta-, and endosulfan sulfate), heptachlor (includes heptachlor epoxide), hexachlorobutadiene, hexachlorocyclohexane (alpha-, beta-, delta- and gamma-), manganese, methoxychlor, and toxaphene.

More recently, priority data needs for 10 additional hazardous substances frequently found at waste sites were determined and announced in the **Federal Register** (68 FR 22704). The ten substances, each of which is included in ATSDR's Priority List of Hazardous Substances, are asbestos, benzidine, chlorinated dibenzo-p-dioxins, 1,2-dibromoethane, 1,2-dichloroethane, 1,1-dichloroethene, ethylbenzene, pentachlorophenol, 1,1,2,2-tetrachloroethane, and total xylenes.

Currently, the priority data needs for acrolein and barium are being identified and will be reported in a future **Federal Register** notice.

To date, 270 priority data needs have been identified for the 60 hazardous substances, and 86 priority data needs have been filled (Table 1). ATSDR fills these research needs through U.S. Environmental Protection Agency (EPA) regulatory mechanisms (test rules), private-sector voluntarism, and the direct use of CERCLA funds. Additional priority data needs are being addressed through collaboration with the National Toxicology Program (NTP), by ATSDR's Great Lakes Human Health Effects Research Program, and other Agency

programs. Priority data needs documents describing ATSDR's rationale for prioritizing research needs for each substance are available. See **ADDRESSES** section of this Notice.

This Notice also serves as a continuous call for voluntary research proposals. Private-sector organizations may volunteer to conduct research to address specific priority data needs identified in this Notice by indicating their interest through submission of a letter of intent to ATSDR (see **ADDRESSES** section of this Notice). A Tri-Agency Superfund Applied Research Committee (TASARC) composed of scientists from ATSDR, National Institute of Environmental Health Sciences (NIEHS)/NTP, and the EPA, will review all proposed voluntary research studies.

DATES: ATSDR provides updates on the status of its Substance-Specific Applied Research Program approximately every three years or sooner, as needed. ATSDR considers the voluntary research effort to be important to the continuing implementation of the SSARP. Therefore, the Agency strongly encourages private-sector organizations to volunteer at any time to conduct research to fill data needs until ATSDR announces that other research mechanisms are in place to address those specific data needs.

ADDRESSES: Private-sector organizations interested in volunteering to conduct research can write to Yee-Wan Stevens, M.S., Applied Toxicology Branch, Division of Toxicology and Environmental Medicine, ATSDR, 1600 Clifton Road, NE., Mailstop F-32, Atlanta, Georgia 30333, e-mail: YStevens@cdc.gov. Information about pertinent ongoing or completed research that may fill priority data needs cited in this Notice should be similarly addressed.

Other Requirements: Projects that involve the collection of information from ten or more individuals and funded by cooperative agreement will be subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act.

FOR FURTHER INFORMATION CONTACT: Yee-Wan Stevens, M.S., Applied Toxicology Branch, Division of Toxicology and Environmental Medicine, ATSDR, 1600 Clifton Road, NE., Mailstop F-32, Atlanta, Georgia 30333, telephone: (770) 488-3325, fax: (770) 488-4178.

SUPPLEMENTARY INFORMATION:

Background

CERCLA as amended by SARA [42 U.S.C. 9604(i)] requires that ATSDR (1) jointly with the EPA, develop and

prioritize a list of hazardous substances found at National Priorities List (NPL) sites, (2) prepare toxicological profiles for these substances, and (3) assure the initiation of a research program, in conjunction with NTP, to address identified data needs associated with the substances. Before starting such a program, ATSDR will consider recommendations of the InterAgency Testing Committee on the type of research that should be done. This committee was established under section 4(e) of the Toxic Substances Control Act of 1976 [15 U.S.C. 2604(e)](TSCA).

The major goals of the ATSDR SSARP are (1) to address the substance-specific information needs of the public and scientific community, and (2) to supply information necessary to improve the database used to conduct comprehensive public health assessments of populations living near hazardous waste sites. We anticipate that the information will help to establish linkages between levels of contaminants in the environment and levels in human tissue and organs associated with adverse health effects. Once such links have been established, strategies to mitigate potentially harmful exposures can be developed. This program will also provide data that can be generalized to other substances or areas of science, including risk assessment of chemicals, thus creating a scientific information base for addressing a broader range of data needs.

ATSDR encourages the use of *in vitro* assessment methods and other innovative tools for filling priority data needs. For example, the Agency believes that physiologically based pharmacokinetic (PBPK) modeling could serve as a valuable tool in predicting across route similarities (or differences) in toxicological responses to hazardous substances. Therefore, on a case-by-case basis, a priority data need can be filled using existing data and modeling. In addition, ATSDR is a member of NTP's InterAgency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) and supports development, validation, and acceptance of alternative toxicological test methods that reduce, refine, and replace the use of animals, as appropriate.

CERCLA section 104(i)(5)(D) states that it is the sense of Congress that the costs for conducting this research program "be borne by the manufacturers and processors of the hazardous substance in question," as required in TSCA and the Federal Insecticide, Fungicide, and Rodenticide Act of 1972

[7 U.S.C. 136 et seq.] (FIFRA), or by cost recovery from responsible parties under CERCLA. To execute this statutory intent, ATSDR developed a plan whereby parts of the SSARP are being conducted via the regulatory mechanisms referenced (TSCA/FIFRA), private-sector voluntarism, and the direct use of CERCLA funds.

The TASARC, composed of scientists from ATSDR, NIEHS/NTP, and EPA, has been set up to:

(1) Advise ATSDR on the assignment of priorities for mechanisms to address data needs,

(2) Coordinate knowledge of research activities to avoid duplication of research in other programs and under other authorities,

(3) Advise ATSDR on issues of science related to substance-specific data needs, and

(4) Maintain a scheduled forum that provides an overall review of the ATSDR SSARP.

TASARC has met 12 times since the initiation of the SSARP. It has guided referral of priority data needs to EPA and the associated development of test rules through TSCA. In addition, it has endorsed the proposals of several private-sector organizations to conduct voluntary research. Furthermore, TASARC has become a forum for other federal agencies to bring forth their research agendas. For example, it has coordinated research efforts on hazardous pollutants with the Office of Air and Radiation, EPA. TASARC has developed testing guidelines for immunotoxicity; and has endorsed the use of decision-support methodologies such as physiologically based pharmacokinetic (PBPK) modeling and benchmark-dose modeling, where appropriate.

Additional priority data needs are being addressed through collaborative research efforts with NTP, by ATSDR's Great Lakes Human Health Effects Research Program, and other Agency programs.

Criteria for Evaluating Status of Priority Data Needs

To update the activities covered under the SSARP, criteria for evaluating the status of the priority data needs were developed. Based on these criteria and the review of the current literature, a priority data need can be filled, or unchanged.

The criteria for evaluating the status of the priority data needs are described below.

General Criteria

A priority data need is filled:

- If it has been referred to one of the implementation mechanisms and research has been initiated (Exception: priority data needs referred to EPA [i.e., included in the EPA/ATSDR test rule] and/or ATSDR Voluntary Research Program remain as priority data needs until the studies have been completed, peer reviewed and accepted by ATSDR), OR

- If an updated ATSDR toxicological profile contains relevant new studies, or if other relevant, peer-reviewed, and publicly available new studies (not included in the toxicological profile) have been identified since the finalization of the priority data needs document; and based on such studies, it is generally agreed that a priority data need has been filled.

Furthermore, in the event a priority data need is considered filled, it does not necessarily mean that the study has been completed and that ATSDR has accepted the data. It does, however, indicate that the Agency no longer considers it a priority to initiate additional studies at this time.

A priority data need remains unchanged:

- If no mechanism or information has been identified to address the priority data need, or

- If the priority data need is included in the ATSDR/EPA test rule under development and/or ATSDR Voluntary Research Program, or it is associated with a pilot substance in EPA's Voluntary Children's Chemical Evaluation Program.

Specific Criteria

Examples of specific criteria for two categories of priority data needs are described below.

- Epidemiologic studies—A priority data need is filled if multiple new studies assessing key health end points are available in ATSDR's updated toxicological profile and/or ongoing studies have been identified, e.g., human health studies supported by ATSDR's Great Lakes Human Health Effects Research Program or the Minority Health Professions Foundation Research Program. In some cases, ATSDR indicates that it will continue to evaluate new data as they become available to determine whether additional studies are needed.

- Exposure levels in humans (adults and/or children)—A priority data need is filled if (a) there are current and adequate biomonitoring data for exposed populations associated with health effects (from published or ongoing studies), or (b) there are reference range data (e.g., the Centers for Disease Control and Prevention's Third

National Report on Human Exposure to Environmental Chemicals, with data from a random sample of participants from the National Health and Nutrition Examination Survey [NHANES]) or generally agreed upon background population levels. In the latter case, ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites. It should be noted that for some of the chemicals listed in the National Report, the measurements are reported as below the limit of detection (LOD) for those chemicals. However, the LODs for all the chemicals monitored are available in the Report, and therefore, these data can be considered as estimates of background exposure levels.

In updating the SSARP, the status of the priority data needs may change as new information becomes available. Further, during the literature review, new studies may be identified suggesting other effects of concern, such as those related to endocrine disruptors and children's health, which were not included in the original list of priority data needs. In such cases, additional priority data needs may be added to the research agenda. For example, in addressing issues relating to children's health, ATSDR considers it a priority to obtain data on exposure levels in children; therefore, when such information is available, it is used to fill this additional priority data need (e.g., cadmium, chlordane, chlorinated dibenzo-p-dioxins, DDT, lead, and pentachlorophenol, see Table 1).

In contrast, the Agency may consider a previously identified priority data need to no longer be a priority to fill at this time and thus be deleted from the list of priority data needs. However, it remains a data need for the Agency. For example, as a result of reevaluation of the database for di-n-butyl phthalate, two of its previously identified priority data needs, i.e., immunotoxicity and neurotoxicity studies via oral exposure are no longer considered to be priority data needs. This is due to the fact that the immune system does not appear to be a target for di-n-butyl phthalate toxicity and that additional neurotoxicity studies do not seem necessary because of the lack of effects seen in long-term neurotoxicity studies. In addition, under the Agency's Voluntary Research Program, the Halogenated Solvents Industry Alliance, Inc. (HSIA) proposed to fill a trichloroethylene priority data need (dose-response data for

intermediate-duration, oral exposure) by conducting PBPK modeling to obtain the data for oral exposure using existing inhalation data. However, ATSDR is concerned that, based on the existing data for this exposure duration, it is not clear if the most sensitive end point for oral exposure is the same as that for inhalation exposure. Therefore, the Agency believes it is prudent not to consider it a priority to conduct a PBPK study to obtain the oral data at this time pending evaluation of additional information. This is reflected in Table 1 from which this priority data need has been deleted.

Update of Activities in the SSARP

An update of the activities associated with the mechanisms for implementing the ATSDR Substance-Specific Applied Research Program (SSARP) is discussed below.

A. TSCA/FIFRA

In developing and implementing the SSARP, ATSDR, NIEHS/NTP, and EPA have identified a subset of priority data needs for substances of mutual interest to the federal programs. These priority data needs are being addressed through a program of toxicological testing under TSCA according to established procedures and guidelines. On several occasions when ATSDR identified priority data needs for oral exposure, other agencies needed inhalation data. In response, ATSDR considers proposals to conduct inhalation studies in conjunction with physiologically based pharmacokinetic (PBPK) studies in lieu of oral studies. ATSDR expects that inhalation data derived from these studies can be used with PBPK modeling to address its oral toxicity priority data needs. Currently, an EPA/ATSDR test rule, under development, includes eight ATSDR substances, i.e., benzene, chloroethane, cyanide (hydrogen cyanide and sodium cyanide), methylene chloride, tetrachloroethylene, toluene and trichloroethylene, and addresses 13 ATSDR priority data needs (Table 2). The test rule is presently undergoing ATSDR and EPA final review and is anticipated to be available for public comment in Spring 2006.

At least seven metals included in the ATSDR's SSARP (arsenic, beryllium, chromium, manganese, mercury, nickel, and selenium, associated with 21 priority data needs) (Table 2) have been forwarded to EPA through TASARC for toxicity testing. The EPA is currently developing a risk assessment framework for metals. Once the framework has been adopted, the EPA will solicit testing proposals for these metals and

pursue appropriate testing mechanisms at a later date.

B. Private-Sector Voluntarism

As part of the Substance-Specific Applied Research Program (SSARP), ATSDR announced a set of proposed procedures for conducting voluntary research in the **Federal Register** (57 FR 4758) on February 7, 1992. Revisions based on public comments were published on November 16, 1992 (57 FR 54160). Private-sector organizations are encouraged to volunteer to conduct research to fill specific priority data needs at no expense to ATSDR. All study protocols and final reports are subjected to ATSDR's external peer review, and ATSDR accepts the study results based on the peer reviewers' recommendation and the industry groups' satisfactory response to the reviewers' comments.

To date, ATSDR has established memoranda of understanding with four industry groups. Through the voluntary research efforts of these organizations, at least 15 research needs (12 priority data needs and 3 data needs) for methylene chloride, tetrachloroethylene (perchloroethylene), trichloroethylene, polychlorinated biphenyl compounds [PCBs], and vinyl chloride have been or are being filled (Table 2).

Industry groups which conducted studies under the Voluntary Research Program include: *The American Chemistry Council (ACC)* [formerly the Chemical Manufacturers Association (CMA)] ATSDR accepted the ACC studies "Vinyl chloride: Combined inhalation two-generation reproduction and developmental toxicity study in CD rats."

General Electric Company (GE)

GE conducted studies on polychlorinated biphenyls including "An assessment of the chronic toxicity and oncogenicity of Aroclors 1016, 1242, 1254, and 1260 administered in diet to rats," "PCB congener analyses," and "Metabolite detection as a tool for determining naturally occurring aerobic PCB biodegradation." Although these studies do not specifically address ATSDR's priority data needs for PCBs, they do address other Agency research needs for these substances.

Halogenated Solvents Industry Alliance, Inc. (HSIA)

To date, ATSDR has entered into five MOUs with HSIA to conduct studies to fill priority data needs for methylene chloride, tetrachloroethylene and trichloroethylene. In addition, in 2002, HSIA signed a letter of agreement with ATSDR stating that HSIA volunteers to

conduct studies to fill ATSDR's remaining priority data needs for tetrachloroethylene (perchloroethylene) and trichloroethylene. These studies are being done in conjunction with the EPA/ATSDR test rule and EPA's Voluntary Children's Chemical Evaluation Program. In some cases, HSIA first conducted a study via inhalation which was followed by route extrapolation via PBPK modeling to obtain data for oral exposure. This is because, for specific chemicals, EPA requires inhalation data while ATSDR has determined that ingestion of contaminated environmental media is the primary exposure route at hazardous waste sites.

HSIA studies accepted by ATSDR include: Addressing priority data needs for methylene chloride with physiologically based pharmacokinetic modeling" which evaluates acute- and subchronic-duration toxicity and developmental toxicity via oral exposure.

"Methylene chloride: 28 day inhalation toxicity study in the rat to assess potential immunotoxicity."

"Immunotoxic potential of orally administered dichloromethane from immunotoxicity studies conducted by the inhalation route." (PBPK modeling)

"Trichloroethylene: Inhalation developmental toxicity study in CD rats." HSIA will conduct PBPK modeling to obtain data for oral exposure based on the inhalation data.

"Trichloroethylene (TCE): Immunotoxicity potential in CD rats following a 4-week vapor inhalation exposure." The final report of the study is undergoing ATSDR's external peer review. Pending ATSDR's acceptance of the inhalation study, HSIA will conduct PBPK modeling to obtain data for oral exposure based on the inhalation data.

"Perchloroethylene: Study of effects on embryo-fetal development in CD rats by inhalation administration." HSIA will conduct PBPK modeling to obtain data for oral exposure based on the inhalation data.

Electric Power Research Institute, Inc. (EPRI)

In addition to the substance-specific MOUs described above, ATSDR also signed an MOU with EPRI to conduct a study "Validation of test methods for assessing neurodevelopment in children." In this particular case, ATSDR and three other federal agencies (the Food and Drug Administration, EPA, and NIEHS) were also funding partners.

C. CERCLA-Funded Research (Minority Health Professions Foundation Research Program)

During FY 1992, ATSDR announced a \$4 million cooperative agreement program with the Minority Health Professions Foundation (MHPF) to support substance-specific investigations. A not-for-profit Internal Revenue Code 501(c)(3) organization, the MHPF comprises 11 minority health professions schools at historically black colleges and universities. The MHPF mission is to research health problems that disproportionately affect poor and minority citizens. The purpose of the cooperative agreement was to address substance-specific data needs for priority hazardous substances identified by ATSDR. In addition, the agreement strengthened the environmental health research opportunities for scientists and students at MHPF member institutions and enhanced existing disciplinary capacities to conduct research in toxicology and environmental health. The MHPF published a report, "Environmental Health and Toxicology Research Program: Meeting Environmental Health Challenges Through Research, Education, and Service," that describes the research findings and other successes from the first 5 years of the program.

In the first five year project period that concluded during FY 1997, nine priority data needs for 21 priority hazardous substances and 22 other research needs for these and other substances were addressed. Research initiated in the second 5-year project period included studies to address 10 additional priority data needs for chlordane, di-n-butyl phthalate, lead, manganese, the polycyclic aromatic hydrocarbons (PAHs), zinc, and eight other research needs. To date, 14 priority data needs have been filled through this cooperative agreement (Table 1).

During 2003, ATSDR announced a new five year cooperative agreement program with the MHPF. The purpose of the program is to apply findings from the previous ten year environmental health and Toxicology Research Program and to improve public health and environmental medicine in low-income and minority communities. The new program builds on earlier efforts and expands the Program's public environmental health impact on affected communities. Activities across the following four research and environmental public health focus areas were funded to initiate this new program: substance-specific toxicology research, environmental exposure

assessment, community-based environmental health education, and environmental health education for primary-care providers. No additional priority data needs are being addressed under this new program.

To date, Program research findings and other activities have resulted in the publication of more than 50 manuscripts in peer-reviewed journals. The institutions which have received awards and their respective studies are listed in Table 2.

D. National Toxicology Program (NTP)

Section 104(i)(5) of CERCLA directs the administrator of ATSDR (in consultation with the administrator of EPA and agencies and programs of the Public Health Service) to assess whether adequate information on the health effects of priority hazardous substances found at NPL sites is available. Where adequate information is not available, ATSDR, in cooperation with the National Toxicology Program (NTP), is required to assure the initiation of a program of research designed to determine these health effects (and techniques for developing methods to determine such health effects).

ATSDR continues to collaborate with NTP to address priority data needs of mutual interest. Chemicals for which NTP has conducted studies (or is in the process of conducting studies) to fill ATSDR's priority data needs include carbon tetrachloride, 1,1-dichloroethene, di-n-butyl phthalate, disulfoton, and heptachlor (Table 2).

E. Great Lakes Human Health Effects Research Program

Some of the priority data needs identified in the SSARP have been independently identified as research needs through the ATSDR Great Lakes Human Health Effects Research Program, a separate research program.

In support of the Great Lakes Critical Programs Act of 1990, ATSDR announced in Fiscal Year 1992 the availability of \$2 million for a grant program to conduct research on the potential for short- and long-term adverse health effects from consumption of contaminated fish from the Great Lakes basin. Research undertaken through this program is intended to build on and amplify the results of past and ongoing fish consumption research in the Great Lakes basin. The ATSDR-supported research projects focus on known high-risk populations to define further the human health consequences of exposure to persistent toxic substances (PTSs) identified in the Great Lakes basin. These at-risk populations include sport anglers; African

Americans, Asians and other non-English speaking populations; pregnant women; fetuses, nursing infants, and children of mothers who consume contaminated Great Lakes sport fish; the elderly, and the urban poor. To date, the research activities of the ATSDR Great Lakes Human Health Effects Research Program have resulted in 70 publications in peer-reviewed journals.

Currently, 14 priority data needs for 24 priority hazardous substances (including 15 PAHs) identified in the SSARP are being addressed through this program. The institutions which have received awards and their respective studies are listed in Table 2.

F. Other ATSDR Programs

In its role as a public health agency addressing environmental health, ATSDR may collect human data to validate substance-specific exposure and toxicity findings. The need for additional information on levels of contaminants in humans has been identified, and remains as a priority data need for 59 of the 60 priority substances (Table 1). In some cases, ATSDR anticipates obtaining this information through exposure and

health effects studies, and through establishing and using substance-specific subregistries of people within the Agency's National Exposure Registry who have potentially been exposed to these substances. Regarding the priority data need for exposure subregistries, the list of the 60 priority hazardous substances in the SSARP was forwarded to ATSDR's Division of Health Studies for consideration as potential candidates for subregistries of exposed persons, based on criteria described in its 1994 document, "National Exposure Registry: Policies and Procedures Manual (Revised)," Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Atlanta, Georgia, NTIS Publication No. PB95-154571. Currently, ATSDR has established exposure subregistries for benzene, dioxin, 1,1,1-trichloroethane (not included in the SSARP), trichloroethylene, and tremolite asbestos.

G. Conclusion

The results of the research conducted via the SSARP are expected to provide

information necessary to improve the database used to conduct comprehensive public health assessments of populations living near hazardous waste sites. The information will enable the Agency to establish linkages between levels of contaminants in the environment and levels in human tissue and organs associated with adverse health effects, ultimately helping to determine methods for interdicting exposure and mitigating toxicity. This program will also provide data that can be generalized to other substances or areas of science, including risk assessment of chemicals, thus creating a scientific information base for addressing a broader range of data needs. The Agency plans to provide an update on the status of this research program approximately every three years or sooner, as needed.

Dated: November 17, 2005.

Kenneth Rose,

Acting Director, Office of Policy, Planning, and Evaluation, National Center for Environmental Health/Agency for Toxic Substances and Disease Registry.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Aldrin/Dieldrin	1A	Dose-response data in animals for intermediate-duration oral exposure.	Filled	An MRL was derived in the 2000 updated ATSDR toxicological profile.
	1B	Bioavailability from soil.	This priority data need, previously addressed in a study in the Great Lakes Research Program, is no longer investigated in that study.
	1C	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	.....
	1D	Potential candidate for subregistry of exposed persons.	ATSDR.	.....
Arsenic	2A	Comparative toxicokinetic studies to determine if an appropriate animal species can be identified.	EPA.	.....
	2B	Half-lives in surface water, groundwater.	EPA.	.....
	2C	Bioavailability from soil	EPA.	.....
	2D	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, background level data are available in ATSDR's 1993 toxicological profile, and at least seven ATSDR studies that evaluated urine arsenic levels and potential adverse health effects are available. Also, additional studies are available in ATSDR's 2000 updated toxicological profile.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Asbestos	3A	Epidemiologic studies of individuals occupationally exposed to asbestos levels lower than those experienced before the institution of current occupational standards governing the use of asbestos, but higher than current levels in the general population. These studies should be performed in conjunction with the immunotoxicity studies.			
	3B	Immunotoxicity studies of individuals occupationally exposed to asbestos.			
	3C	Development of human and rat lung retention models to aid in extrapolating between rat and human data.			
	3D	Improved analytical methods for screening samples and determining the chemical structure of asbestos fibers. Also, techniques are needed to normalize studies in which different analytical methods were employed.			
	3E	Exposure levels, fiber size distribution, and asbestos fiber type in areas with natural geologic deposits of friable asbestos and at hazardous waste sites. Also, techniques for estimating air levels of asbestos from soil concentrations and activity scenarios.			
	3F	Exposure levels in humans living near hazardous waste sites and in other populations, such as humans living in areas with naturally high levels of friable asbestos.			
	3G	Potential candidate for subregistry of exposed persons.	ATSDR	Filled	ATSDR established registry to follow the health of people who were exposed to asbestos in Libby, Montana. The name of the registry is the Tremolite Asbestos Registry (TAR).
Benzene	4A	Dose-response data in animals for acute- and intermediate-duration oral exposure. The subchronic study should include an extended reproductive organ histopathology.	EPA .....	.....	Reproductive toxicity study is the only component of this PDN that is included in the EPA/ATSDR test rule.
	4B	Prenatal developmental toxicity study via oral exposure.	EPA .....	.....	Previously planned study in the MHPF Research Program to address this priority data need was canceled.
	4C	Neurotoxicology battery of tests via oral exposure.	EPA.		
	4D	Epidemiologic studies on the health effects of benzene (Special emphasis end points include immunotoxicity).	.....	Filled	Based on an evaluation of the data in ATSDR's 1997 updated toxicological profile. ATSDR will continue to evaluate new data as they become available to determine if additional studies are needed.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Benzidine	4E	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations are available (Ashley <i>et al.</i> 1992, 1994; Needham <i>et al.</i> 1995), and at least one ATSDR study that evaluated blood benzene levels and potential adverse health effects is available. ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	5A	Dose-response data for acute- and intermediate-duration exposure via the oral route (the study of intermediate-duration exposure should include evaluation of reproductive and endocrine organ histopathology, lymphoid tissues histopathology as well as examination of relevant blood components, and nervous system histopathology).			
	5B	Exposure levels in humans living near hazardous waste sites.			
Beryllium	5C	Exposure levels in children.	ATSDR.		
	5D	Potential candidate for subregistry of exposed persons.			
	6A	Dose-response data in animals for acute- and intermediate-duration inhalation exposures. The subchronic study should include extended reproductive organ histopathology.	EPA.		
	6B	Prenatal developmental toxicity study via inhalation exposure.	EPA.		
	6C	Environmental fate in air; factors affecting bioavailability in air.	EPA.		
	6D	Analytical methods to determine environmental speciation.	.....	Filled	Based on an evaluation of the data in ATSDR's 2000 updated toxicological profile.
	6E	Immunotoxicology battery of tests following oral exposure.	EPA.		
	6F	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in urine are available (Paschal <i>et al.</i> 1998, CDC 2005). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
Cadmium	6G	Exposure levels in children .....	.....	Filled	Reference range concentrations in urine are available (CDC 2005).
	6H	Potential candidate for subregistry of exposed persons.	ATSDR.		
	7A	Analytical methods for biological tissues and fluids and environmental media.	.....	Filled	Based on an evaluation of the data in ATSDR's 1999 updated toxicological profile.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Carbon tetrachloride	7B	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, reference range concentrations in blood and urine are available (CDC 2005), and at least nine ATSDR studies that evaluated blood and urine cadmium levels and potential adverse health effects are available.
	7C	Exposure levels in children .....	.....	Filled	Reference range concentrations in blood and urine are available (CDC 2005).
	8A	Dose-response data in animals for chronic oral exposure. The study should include extended reproductive organ and nervous tissue histopathology.			
	8B	Immunotoxicology battery of tests via oral exposure.	NTP	Filled	NTP dose-finding study and one study in ATSDR's 1994 updated toxicological profile addressed the priority data need.
	8C	Half-life in soil .....	.....	Filled	One study in ATSDR's 1994 updated toxicological profile provided information on half-life in soil.
	8D	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in blood are available (Ashley <i>et al.</i> 1992, 1994; Needham <i>et al.</i> 1995). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
Chlordane	8E	Potential candidate for subregistry of exposed persons.	ATSDR.		
	9A	Oral multigenerational studies to evaluate reproductive toxicity.	MHPF	Filled	Availability of studies in the MHPF Research Program.
	9B	Bioavailability studies following ingestion of contaminated media.			
	9C	Exposure levels in humans (adults) living near hazardous waste sites and other populations potentially exposed to chlordane.	.....	Filled	Reference range concentrations in serum are available (CDC 2005). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
Chlorinated dibenzo-p-dioxins (CDDs).	9D	Exposure levels in children .....	.....	Filled	Reference range concentrations in serum are available (CDC 2005).
	9E	Potential candidate for subregistry of exposed persons.	ATSDR.		
	10A	Studies via oral exposure designed to assess childhood susceptibility.			

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Chloroethane	10B	Comparative toxicokinetic studies examining the relative absorption of CDDs across exposure routes and the relative contribution of each exposure route to total body burdens.			
	10C	Exposure levels in humans (adults) living near hazardous waste sites.	.....	Filled	Reference range concentrations in serum are available (CDC 2005). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	10D	Exposure levels in children .....	.....	Filled	Reference range concentrations in serum are available (CDC 2005).
	11A	Dose-response data in animals for acute- and intermediate-duration oral exposures. The sub-chronic study should include an evaluation of immune and nervous system tissues, and extended reproductive organ histopathology.	EPA.		
	11B	Dose-response data in animals for chronic inhalation exposures. The study should include an evaluation of nervous system tissues.	EPA.		
Chloroform	11C	Potential candidate for subregistry of exposed persons.	ATSDR.		
	12A	Dose-response data in animals for intermediate-duration oral exposure.	.....	Filled	An MRL was derived in ATSDR's 1997 updated toxicological profile.
	12B	Epidemiologic studies on the health effects of chloroform (Special emphasis end points include cancer, neurotoxicity, reproductive and developmental toxicity, hepatotoxicity, and renal toxicity).	.....	Filled	Based on an evaluation of the data in ATSDR's 1997 updated toxicological profile. ATSDR will continue to evaluate new data as they become available to determine if additional studies are needed.
	12C	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in blood are available (Ashley <i>et al.</i> 1992, 1994; and Needham <i>et al.</i> 1995). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
Chromium	12D	Potential candidate for subregistry of exposed persons.	ATSDR.		
	13A	Dose-response data in animals for acute-duration exposure to chromium (VI) and (III) via oral exposure and for intermediate-duration exposure to chromium (VI) via oral exposure.	EPA.		
	13B	Multigeneration reproductive toxicity study via oral exposure to chromium (III) and (VI).	EPA.		

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Cyanide	13C	Immunotoxicology battery of tests following oral exposure to chromium (III) and (VI).	EPA.		In addition to the data from the Great Lakes Research Program, reference range concentrations in urine are available (Paschal <i>et al.</i> 1998). Also, at least two ATSDR studies that evaluated urine chromium levels and potential adverse health effects are available.
	13D	Prenatal developmental toxicity study via oral exposure to chromium (III) and (VI).	EPA.		
	13E	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	
	14A	Dose-response data in animals for acute- and intermediate-duration exposures via inhalation. The subchronic study should include extended reproductive organ histopathology and evaluation of neurobehavioral and neuropathological end points.	EPA.		
	14B	Prenatal developmental toxicity study via oral exposure.	EPA.		
1,2-dibromo-3-chloropropane	14C	Evaluation of the environmental fate of cyanide in soil.	Filled	A study addressing the priority data need was submitted by industry to EPA in response to EPA's solicitation for proposals for test rule making. Scientists from EPA and ATSDR reviewed the study and considered that this research need is no longer a priority.
	14D	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.			
	14E	Potential candidate for subregistry of exposed persons.	ATSDR.		
	15A	Dose-response data in animals for acute-duration exposure via the oral route (including reproductive organ histopathology).			
	15B	Dose-response data in animals for chronic-duration exposure via the oral route (including reproductive organ histopathology).			
	15C	Prenatal developmental toxicity study via oral exposure.			
	15D	Immunotoxicology testing battery via oral exposure.	Previously planned study in the MHPF Research Program to address this priority data need was canceled.
	15E	Neurotoxicology testing battery via oral exposure.	Previously planned study in the MHPF Research Program to address this priority data need was canceled.
	15F	Exposure levels in humans living near hazardous waste sites and other exposed populations, such as exposed workers.			
	15G	Potential candidate for subregistry of exposed persons.	ATSDR.		

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴			
1,2-Dibromoethane	16A	Dose-response data in animals for acute- and intermediate-duration exposure by the oral route (the study of intermediate-duration exposure should include evaluation of neuropathology and observation for overt signs of neurotoxicity).	ATSDR.					
	16B	Multigeneration reproductive toxicity studies via oral exposure.						
	16C	Developmental toxicity studies via oral exposure.						
	16D	Immunotoxicity battery studies via oral exposure.						
	16E	Exposure levels in humans living near hazardous waste sites and in other populations, such as workers exposed to 1, 2-dibromoethane.						
	16F	Exposure levels in children.						
	16G	Potential candidate for subregistry of exposed persons.						
1,2-Dichloroethane	17A	Dose-response data in animals for acute-duration (14-day) exposure by the inhalation route, including a comparison of young and adult animals.				ATSDR.		
	17B	Dose-response data in animals for acute-duration (14-day) exposure by the oral route, including a comparison of young and adult animals.						
	17C	Dose-response data in animals for intermediate-duration exposure by the inhalation route (the study should be performed in conjunction with the neurotoxicology battery of tests).						
	17D	Neurotoxicology battery of tests following inhalation exposure.						
	17E	Neurotoxicology battery of tests following oral exposure.						
	17F	Dose-response data in animals for chronic-duration exposure by the oral route.						
	17G	Prenatal developmental toxicity data for inhalation exposure (assessment of developmental cardiotoxicity and neurotoxicity).						
	17H	Prenatal developmental toxicity data for oral exposure (assessment of developmental cardiotoxicity and neurotoxicity).						
	17I	Additional analyses and studies for comparative toxicokinetics across species, ages, routes, and durations.						
	17J	Children's susceptibility.						
		17K	Exposure levels in humans living near hazardous waste sites.					
	17L	Exposure levels in children.						
	17M	Potential candidate for subregistry of exposed persons.						
1,1-Dichloroethene	18A	Dose-response data in animals for acute-duration exposure by the inhalation route.	NTP	Filled	Availability of ongoing NTP study.			

TABLE 1.—ATSDR’S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
	18B	Dose-response data in animals for chronic-duration exposure by the inhalation route.	NTP	Filled	Availability of ongoing NTP study.
	18C	Dose-response data in animals for acute- and intermediate-duration exposure by the oral route.			
	18D	Carcinogenicity studies in two species following inhalation exposure.			
	18E	Reproductive toxicity studies assessing male and female end points following inhalation exposure.			
	18F	Prenatal developmental toxicity studies following oral exposure.			
	18G	Immunotoxicology battery of tests following oral exposure.			
	18H	Battery of neurobehavioral tests following inhalation exposure.			
	18I	Children’s susceptibility.			
	18J	Exposure levels in humans living near hazardous waste sites.			
	18K	Exposure levels in children.			
	18L	Potential candidate for subregistry of exposed persons.	ATSDR.		
DDT	19A	Dose-response data in animals for chronic-duration oral exposure.			
	19B	Comparative toxicokinetic study (across routes/species).			
	19C	Bioavailability and bioaccumulation from soil.			
	19D	Epidemiologic studies on the health effects of DDT, DDD, and DDE (Special emphasis end points include immunotoxicity, and reproductive and developmental toxicity).	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, multiple studies in ATSDR’s 2000 updated toxicological profile are available.
	19E	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, reference range concentrations in serum are available (CDC 2005). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	19F	Exposure levels in children .....	.....	Filled	Reference range concentrations in serum are available (CDC 2005).
	19G	Potential candidate for subregistry of exposed persons.	ATSDR.		
Di (2-ethylhexyl) phthalate	20A	Epidemiologic studies on the health effects of DEHP (Special emphasis end points include cancer).			

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Di-n-butyl phthalate	20B	Dose-response data in animals for acute- and intermediate-duration oral exposures. The sub-chronic study should include an extended histopathologic evaluation of the immunologic and neurologic systems.	.....	.....	This research need remains as a priority data need because the previously developed MRL for acute-duration (1993 toxicological profile) was withdrawn. However, a new MRL for intermediate-duration was derived in ATSDR's 2002 updated Toxicological Profile. Therefore, this priority data need is considered partially filled because additional adequate acute-duration data for deriving an MRL are still lacking.
	20C	Multigeneration reproductive toxicity study via oral exposure.	.....	.....	This research need is reassigned as a priority data need based on an evaluation of the data in ATSDR's 2002 updated toxicological profile. Also, the NTP Center for the Evaluation of Risks to Human Reproduction Expert Panel Report (October 2000) has identified critical data needs for reproductive toxicity.
	20D	Comparative toxicokinetic studies (Studies designed to examine how primates metabolize and distribute DEHP as compared with rodents via oral exposure).	.....	Filled	The existing database provides adequate information to fill this priority data need based on ATSDR's reevaluation of the published data.
	20E	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.			
	20F	Potential candidate for subregistry of exposed persons.	ATSDR.		
	21A	Dose-response data in animals for acute-duration exposure via the oral route.	NTP	Filled	Availability of an NTP study.
	21B	Dose-response data in animals for chronic-duration exposure via the oral route.			
	21C	Carcinogenicity studies via oral exposure.			
	21D	In vivo genotoxicity studies	MHPF	Filled	Availability of a study in the MHPF Research Program.
	21E	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.			
Disulfoton	21F	Environmental fate of di-n-butyl phthalate in environmental media.			
	21G	Bioavailability in contaminated environmental media near hazardous waste sites.			
	21H	Potential candidate for subregistry of exposed persons.	ATSDR.		
	22A	Immunotoxicology testing battery following oral exposure.	NTP	Filled	Availability of ongoing NTP study.
	22B	Exposure levels of disulfoton in tissues/fluids for populations living near hazardous waste sites and other populations, such as exposed workers.			
	22C	Disulfoton should be considered as a potential candidate for a subregistry of exposed persons.	ATSDR.		

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Endosulfan (α , β , and sulfate)	23A	Acute-duration oral exposure studies.	ATSDR.		
	23B	Data on sensitive neurologic end point following oral exposure.			
	23C	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.			
	23D	Data on the bioavailability of endosulfan from soil.			
	23E	Potential candidate for subregistry of exposed persons.			
Endrin/endrin aldehyde	24A	Dose-response animal data for acute oral exposure to endrin.	ATSDR.		
	24B	Multigeneration reproductive toxicity studies via oral exposure to endrin.			
	24C	Accurately describe the toxicokinetics of endrin and its degradation products and identify the animal species to be used as the most appropriate model for human exposure.			
	24D	Exposure levels for endrin and its degradation products in humans living near hazardous waste sites.			
	24E	Accurately describe the environmental fate of endrin, including environmental breakdown products and rates, media half-lives, and chemical and physical properties of the breakdown products that help predict mobility and volatility.			
	24F	Potential candidate for subregistry of exposed persons.			
	25A	Dose-response data for acute-duration exposure by the inhalation route.			
Ethylbenzene	25B	Dose-response data for chronic-duration exposure by the inhalation route.	ATSDR.		
	25C	Dose-response data for acute- and intermediate-duration exposure by the oral route; the study of intermediate-duration exposure should include an evaluation of clinical signs of neurotoxicity and histopathology of reproductive organs, endocrine glands, and nervous system.			
	25D	Multigeneration toxicity study examining reproductive end points and indicators of endocrine disruption following inhalation exposure.			
	25E	Prenatal developmental study with continued assessment of offspring during postnatal development following oral exposure.			
	25F	Studies for comparative toxicokinetics.			
	25G	Exposure levels in humans living near hazardous waste sites.			
	25H	Exposure levels in children.			

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Heptachlor/heptachlor epoxide	25I	Potential candidate for subregistry of exposed persons.	ATSDR.		
	26A	Dose-response animal data for acute- and intermediate-duration oral exposures, including immunopathology.			
	26B	Multigeneration reproductive toxicity studies via the oral route of exposure.	NTP	Filled	Availability of publication "The effects of perinatal/juvenile heptachlor exposure on adult immune and reproductive system function in rats" by Smialowicz et al. (2001), Toxicological Sciences 61:164–175.
	26C	Prenatal developmental toxicity studies via the oral route of exposure.	.....	Filled	Based on ATSDR's review of the literature, i.e., Smialowicz et al. (2001), Toxicological Sciences 61:164–175 and Moser et al. (2001) Toxicological Sciences 60 (2):315–326.
	26D	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in serum are available (CDC 2005). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	26E	Exposure levels in children .....	.....	Filled	Reference range concentrations in serum are available (CDC 2005).
	26F	Bioavailability from contaminated air, water, and soil and bioaccumulation potential.			
Hexachlorobutadiene	26G	Potential candidate for subregistry of exposed persons.	ATSDR.		
	27A	Dose-response data in animals for acute-duration exposure via the oral route.			
	27B	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.			
	27C	Environmental fate studies that determine the extent to which hexachlorobutadiene volatilizes from soil, and studies that determine the reactions and rates which drive degradation in soil.			
	27D	Bioavailability studies in soil and plants.			
Hexachlorocyclohexane (α , β and γ).	27E	Potential candidate for subregistry of exposed persons.	ATSDR.		
	28A	Dose-response data for chronic-duration oral exposure.	.....	Filled	An MRL was derived in ATSDR's 1999 updated toxicological profile.
	28B	Mechanistic studies on the neurotoxicity, hepatotoxicity, reproductive toxicity, and immunotoxicity of hexachlorocyclohexane.			

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Lead	28C	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in serum are available (CDC 2005). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	28D	Exposure levels in children .....	.....	Filled	Reference range concentrations in serum are available (CDC 2005).
	28E	Potential candidate for subregistry of exposed persons.	ATSDR.		
	29A	Mechanistic studies on the neurotoxic effects of lead.	MHPF	Filled	Multiple studies (at least 13 publications from the MHPF Research Program + numerous studies in ATSDR's 1999 updated toxicological profile) are available.
	29B	Analytical methods for tissue levels.	MHPF	Filled	A publication from the MHPF Research Program and numerous studies in ATSDR's 1999 toxicological profile are available.
	29C	Exposure levels in humans (adults) near hazardous waste sites and other populations, such as exposed workers.	MHPF	Filled	In addition to the data from Great Lakes Research Program and MHPF Research Program, reference range concentrations in blood and urine are available (CDC 2005; Paschal et al. 1998), and at least 19 ATSDR studies that evaluated blood lead levels and potential adverse health effects are available.
Manganese	29D	Exposure levels in children .....	.....	Filled	Reference range concentrations in blood and urine are available (CDC 2005).
	30A	Dose-response data for acute- and intermediate-duration oral exposures (the subchronic study should include reproductive histopathology and an evaluation of immunologic parameters including manganese effects on plaque-forming cells (SRBC), surface markers (D4:D8 ratio), and delayed hypersensitivity reactions).	MHPF	Filled	Availability of studies in the MHPF Research Program.
	30B	Toxicokinetic studies on animals to investigate uptake and absorption, relative uptake of differing manganese compounds, metabolism of manganese, and interaction of manganese with other substances following oral exposure.	MHPF	Filled	Availability of studies in the MHPF Research Program.
	30C	Epidemiological studies on the health effects of manganese (Special emphasis end points include neurologic, reproductive, developmental, immunologic, and cancer).	.....	Filled	Based on an evaluation of the data in ATSDR's 2000 updated toxicological profile. ATSDR will continue to evaluate new data as they become available to determine if additional studies are needed.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Mercury	30D	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.			
	30E	Relative bioavailability of different manganese compounds and bioavailability of manganese from soil.	EPA.		
	31A	Multigeneration reproductive toxicity study via oral exposure.	MHPF	Filled	Availability of publications from the MHPF Research Program.
	31B	Dose-response data in animals from chronic-duration oral exposure.	.....	Filled	An MRL was derived in ATSDR's 1999 updated toxicological profile.
	31C	Immunotoxicology battery of tests via oral exposure.	EPA.		
	31D	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, background levels data are available in ATSDR's 1997 updated toxicological profile, and multiple ATSDR studies that evaluated blood, urine, hair mercury levels and potential adverse health effects are available. Also, reference range concentrations in blood and urine are available (CDC 2005).
Methoxychlor	31E	Exposure levels in children .....	.....	Filled	Reference range concentrations in blood and urine are available (CDC 2005).
	31F	Potential candidate for subregistry of exposed persons.	ATSDR.		
	32A	Evaluate neurologic effects after long-term, low-level oral exposure.	.....	Filled	Based on an evaluation of the data in ATSDR's 2000 updated toxicological profile.
	32B	Exposure levels of methoxychlor and primary metabolites in humans living near hazardous waste sites and those individuals with the potential to ingest it.			
Methylene chloride	32C	Evaluate the fate, transport, and levels of the degradation products of methoxychlor in soil.			
	32D	Potential candidate for subregistry of exposed persons.	ATSDR.		
	33A	Dose-response data in animals for acute- and intermediate-duration oral exposure. The subchronic study should include extended reproductive organ histopathology, neuropathology, and immunopathology.	EPA	Filled	ATSDR accepted HSIA's toxicity study for acute- and intermediate-duration exposure duration in February 1997. Also, ATSDR accepted HSIA's immunotoxicity study via inhalation in November 2000 and the oral data obtained via PBPK modeling conducted by HSIA based on the immunotoxicity data from the inhalation study. Neurotoxicity screening battery testing remains in the ATSDR/EPA test rule under development.
	33B	Prenatal developmental toxicity study via the oral route.	Vol Res	Filled	ATSDR accepted HSIA's study in February 1997.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Nickel	33C	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in blood are available (Ashley <i>et al.</i> 1992, 1994; Needham <i>et al.</i> 1995). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	33D	Potential candidate for subregistry of exposed persons.	ATSDR.		
	34A	Epidemiologic studies on the health effects of nickel (Special emphasis end points include reproductive toxicity).	.....	Filled	Based on at least two relevant studies in ATSDR's 1997 updated toxicological profile. ATSDR will continue to evaluate new data as they become available to determine if additional studies are needed.
	34B	Prenatal development toxicity study via the oral route.	EPA	Filled	In ATSDR's 1997 updated toxicological profile, a study confirming the results of two previous studies is available.
	34C	Dose-response data in animals for acute- and intermediate-duration oral exposures.	EPA.		
	34D	Neurotoxicology battery of tests via oral exposure.	EPA.		
	34E	Bioavailability of nickel from soil ..	EPA.		
Pentachlorophenol	34F	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	Based on availability of the data from the Great Lakes Research Program and an evaluation of ATSDR's 1997 updated toxicological profile.
	34G	Potential candidate for subregistry of exposed persons.	ATSDR.		
	35A	Comparative toxicokinetic studies.			
	35B	Exposure levels in humans (adults) living near hazardous waste sites.	.....	Filled	Reference range concentrations in urine are available (CDC 2005). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
Polychlorinated biphenyls (PCBs)	35C	Exposure levels in children .....	.....	Filled	Reference range concentrations in urine are available (CDC 2005).
	35D	Potential candidate for subregistry of exposed persons.	ATSDR.		
	36A	Dose-response data in animals for acute- and intermediate-duration oral exposure.	G. Lakes ..	.....	Although an MRL for intermediate-exposure duration was derived in ATSDR's 2000 updated toxicological profile, an MRL for acute-exposure duration is still lacking.
	36B	Biodegradation of PCBs in water; bioavailability of PCBs in air, water, and soil.			

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Polycyclic aromatic hydrocarbons (PAHs) (Includes 15 substances).	36C	Dose-response data in animals for acute- and intermediate-duration inhalation exposures. The subchronic study should include extended reproductive organ histopathology.			
	36D	Epidemiologic studies on the health effects of PCBs (Special emphasis end points include immunotoxicity, gastrointestinal toxicity, liver toxicity, kidney toxicity, thyroid toxicity, and reproductive/developmental toxicity).	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, multiple studies in ATSDR's 2000 updated toxicological profile are available.
	36E	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, background levels data are available (ATSDR's 1997 updated toxicological profile, Needham <i>et al.</i> 1996, and CDC 2005). Also, multiple ATSDR studies that evaluated blood and breast milk PCB levels and potential adverse health effects are available.
	36F	Exposure levels in children .....	.....	Filled	Reference range concentrations in serum are available (CDC 2005).
	36G	Potential candidate for subregistry of exposed persons.	ATSDR.		
	36H ⁵	Chronic toxicity and oncogenicity via oral exposure.	Vol Res	Filled	ATSDR accepted the final report of the GE study in October 1997.
	36I ⁵	Aerobic PCB biodegradation in sediment.	Vol Res	Filled	ATSDR accepted the final report of the GE study in July 1999.
	36J ⁵	PCB congener analysis	Vol Res G. Lakes	Filled	ATSDR accepted the final report of the GE study in October 1997. Also, data from the Great Lakes Research Program are available.
	37A	Dose-response data in animals for intermediate-duration oral exposures. The subchronic study should include extended reproductive organ histopathology and immunopathology.	MHPF	Filled	MRLs for four PAHs were derived in ATSDR's 1995 updated toxicological profile. A publication from the MHPF Research Program addressing this priority data need is available.
	37B	Prenatal developmental toxicity study via inhalation or oral exposure.	MHPF	Filled	Data from the MHPF Research Program including a publication are available.
	37C	Mechanistic studies on PAHs, on how mixtures of PAHs can influence the ultimate activation of PAHs, and on how PAHs affect rapidly proliferating tissues.	MHPF	Filled	In addition to publications from the MHPF Research Program, studies are available in ATSDR's 1995 updated toxicological profile.
	37D	Dose-response data in animals for acute- and intermediate-duration inhalation exposures. The subchronic study should include extended reproductive organ histopathology and immunopathology.	MHPF	Filled	Data from the MHPF Research Program including one publication are available.
	37E	Epidemiologic studies on the health effects of PAHs (Special emphasis end points include cancer, dermal, hemolymphatic, and hepatic toxicity).	.....	Filled	Multiple studies in ATSDR's 1995 updated toxicological profile are available. ATSDR will continue to evaluate new data as they become available to determine if additional studies are needed.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Selenium	37F	Exposure levels in humans (adults) living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	Based on data from the Great Lakes Research Program and an evaluation of the ATSDR 1995 updated toxicological profile. Also, reference range concentrations in urine are available (CDC 2005). The Agency continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	37G	Exposure levels in children	Filled .....		Reference range concentrations in urine are available (CDC 2005).
	37H	Potential candidate for subregistry of exposed persons.	ATSDR.		
	38A	Dose-response data in animals for acute-duration oral exposure.	EPA.		
	38B	Immunotoxicology battery of tests via oral exposure.	EPA.		
	38C	Epidemiologic studies on the health effects of selenium (Special emphasis end points include cancer, reproductive and developmental toxicity, hepatotoxicity, and adverse skin effects).	.....	Filled	Based on an evaluation of ATSDR's 2001 updated toxicological profile. ATSDR will continue to evaluate new data as they become available to determine if additional studies are needed.
1,1,2,2-Tetrachloroethane	38D	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	G. Lakes ..	Filled	In addition to the data from the Great Lakes Research Program, reference range concentrations in serum are available (NHANES III). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	38E	Potential candidate for subregistry of exposed persons.	ATSDR.		
	39A	Prenatal developmental toxicity study by the oral route.			
	39B	Immunotoxicity battery following oral exposure.			
	39C	Mammalian in vivo genotoxicity assays.			
	39D	Exposure levels in humans living near hazardous waste sites.			
	39E	Exposure levels in children.			
	39F	Potential candidate for subregistry of exposed persons.	ATSDR.		
Tetrachloroethylene	40A	Dose-response data in animals for acute-duration oral exposure, including neuropathology and demeanor, and immunopathology.	.....	Filled	An MRL was derived in the ATSDR 1997 updated toxicological profile.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Toluene	40B	Multigeneration reproductive toxicity study via oral exposure.	Vol Res ....	.....	HSIA's inhalation study was accepted by ATSDR and included in ATSDR's 1997 updated toxicological profile. However, ATSDR has identified ingestion of contaminated environmental media to be the primary exposure route for this chemical at waste sites. HSIA will obtain the oral data from the inhalation study by conducting PBPK modeling.
	40C	Dose-response data in animals for intermediate-duration oral exposure, including neuropathology, and immunopathology.	EPA. Vol Res		HSIA will obtain oral data for intermediate-duration toxicity and neurotoxicity by PBPK modeling based on existing inhalation data. Also, it will conduct an inhalation immunotoxicity study, followed by PBPK modeling to obtain oral data.
	40D	Prenatal developmental toxicity study via oral exposure.	Vol Res ....	.....	HSIA's developmental toxicity study via inhalation was accepted by ATSDR. However, ATSDR has identified ingestion of contaminated environmental media to be the primary exposure route for this chemical at waste sites. HSIA will obtain the oral data from the inhalation study by conducting PBPK modeling.
	40E	Developmental neurotoxicity study via oral exposure.	EPA Vol Res.		
	40F	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in blood are available (Ashley <i>et al.</i> 1992, 1994; Needham <i>et al.</i> 1995). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	40G	Potential candidate for subregistry of exposed persons.	ATSDR.		
	41A	Dose-response data in animals for acute- and intermediate-duration oral exposures. The subchronic study should include an extended histopathologic evaluation of the immune system.	.....	Filled	Availability of MRLs for acute- and intermediate-exposure durations in ATSDR's 2000 updated toxicological profile.
	41B	Comparative toxicokinetic studies (Characterization of absorption, distribution, and excretion via oral exposure).	.....	Filled	Based on evaluation of the data in ATSDR's 2000 updated toxicological profile.
	41C	Neurotoxicology battery of tests via oral exposure.	EPA MHPF		A publication for acute exposure but not longer term exposure is available in the MHPF Research Program. Also, this priority data need is included in the EPA/ATSDR test rule.
	41D	Mechanism of toluene-induced neurotoxicity.	.....	Filled	Multiple studies in ATSDR's 1994 and 2000 updated toxicological profiles are available.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Toxaphene	41E	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in blood are available (Ashley <i>et al.</i> 1992, 1994; Needham <i>et al.</i> 1995), and additional data in ATSDR's 2000 updated toxicological profile are available. ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	41F	Potential candidate for subregistry of exposed persons.	ATSDR.		
	42A	Identify the long-term health consequences of exposure to environmental toxaphene via oral exposure.			
	42B	Conduct additional immunotoxicity studies for chronic-duration via oral route of exposure.			
	42C	Conduct additional neurotoxicity studies for chronic-duration via oral route of exposure.			
Trichloroethylene	42D	Exposure levels in humans living in areas near hazardous waste sites with toxaphene and in those individuals with the potential to ingest it.			
	42E	Potential candidate for subregistry of exposed persons.	ATSDR.		
	43A	Dose-response data in animals for acute-duration oral exposure.	.....	Filled	An MRL was derived in ATSDR's 1997 updated toxicological profile.
	43B	Neurotoxicology battery of tests via the oral route.	EPA MHPF .....	.....	A publication for acute exposure but not longer term exposure is available in the MHPF Research Program. Also, this priority data need is included in the EPA/ATSDR test rule and ATSDR's Voluntary Research Program.
			Vol Res		
	43C	Immunotoxicology battery of tests via oral route.	Vol Res ....	.....	HSIA has completed an inhalation immunotoxicity study which is undergoing ATSDR peer review. HSIA will obtain oral data via PBPK modeling based on the inhalation data.
	43D	Prenatal developmental toxicity study via oral exposure.	Vol Res ....	.....	ATSDR has accepted HSIA's final report for an inhalation developmental toxicity study. HSIA will use PBPK modeling to obtain data for oral exposure based on the results of its inhalation study.
	43E	Developmental neurotoxicity study via oral exposure.	EPA Vol Res		
	43F	Epidemiologic studies on the health effects of trichloroethylene (Special emphasis end points include cancer, hepatotoxicity, renal toxicity, developmental toxicity, and neurotoxicity).	.....	Filled	Based on evaluation of the data in ATSDR's 1997 updated toxicological profile. ATSDR will continue to evaluate new data as they become available to determine if additional studies are needed.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—
Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
Vinyl chloride	43G	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	Filled	Reference range concentrations in blood are available (Ashley <i>et al.</i> 1992, 1994; Needham <i>et al.</i> 1995). ATSDR acknowledges that reference concentration data can support exposure and health assessments at waste sites, but the Agency also continues to recognize the importance of collecting additional data on uniquely exposed populations at waste sites.
	44A	Dose-response data in animals for acute-duration inhalation exposure.	.....	Filled	An MRL was derived in ATSDR's 1997 updated toxicological profile.
	44B	Multigeneration reproductive toxicity study via inhalation.	Vol Res	Filled	ATSDR accepted the final report of ACC's study in November 2000.
	44C	Dose-response data in animals for chronic-duration inhalation exposure.			
	44D	Mitigation of vinyl chloride-induced toxicity.			
	44E	Prenatal developmental toxicity study via inhalation.	Vol Res	Filled	ATSDR accepted the final report of ACC's study in November 2000.
Xylenes	44F	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.			
	44G	Potential candidate for subregistry of exposed persons.	ATSDR.		
	45A	Dose-response data for chronic-duration exposure by the oral route. This study should be done in conjunction with the neurotoxicology battery of tests.			
	45B	Neurotoxicology battery of tests following oral exposure.			
	45C	Two-generation reproductive study following oral exposure.			
	45D	Developmental toxicity study that includes neurodevelopmental end points following oral exposure.			
	45E	Exposure levels in humans living near hazardous waste sites.			
	45F	Exposure levels in children.			
Zinc	45G	Potential candidate for subregistry of exposed persons.	ATSDR.		
	46A	Dose-response data in animals for acute- and intermediate-duration oral exposures. The subchronic study should include an extended histopathologic evaluation of the immunologic and neurologic systems.	MHPF	Filled	Availability of ongoing studies in the MHPF Research Program.
	46B	Multigeneration reproductive toxicity study via oral exposure.	MHPF	Filled	Availability of ongoing studies in the MHPF Research Program.
	46C	Carcinogenicity testing (2-year bioassay) via oral exposure.			
	46D	Exposure levels in humans living near hazardous waste sites and other populations, such as exposed workers.	.....	.....	This priority data need, previously anticipated to be addressed under the voluntary research program, is not being investigated under any of the ATSDR research programs.

TABLE 1.—ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS FOR 60 PRIORITY HAZARDOUS SUBSTANCES—Continued

Substances	PDN ID ¹	PDN description	Program ²	Status change ³	Comments ⁴
	46E	Potential candidate for subregistry of exposed persons.	ATSDR.		

¹ Priority data need identification number.
² Programs addressing priority data needs. ATSDR = ATSDR's Division of Health Studies; EPA = U.S. Environmental Protection Agency; G. Lakes = Great Lakes Human Health Effects Research Program; MHPF = Minority Health Professions Foundation; NTP = National Toxicology Program; Vol Res = Voluntary research.
³ PDN can be filled or remain unchanged based on reevaluation of the database using criteria developed by ATSDR.
⁴ ACC = American Chemistry Council; Ashley *et al.* 1992 = Ashley DL, Bonin MA, Cardinali FL, *et al.* Anal Chem (1992) 64:1021–29; Ashley *et al.* 1994 = Ashley DL, Bonin MA, Cardinali FL *et al.*, Clin Chem (1994) 40/7:1401–4; ATSDR studies = Studies conducted by ATSDR's Division of Health Studies; GE = General Electric Company; HSIA = Halogenated Solvents Industry Alliance, Inc.; MHPF = Minority Health Professions Foundation; MRL = Minimal Risk Level; CDC 2005 = The third National Report on Human Exposure to Environmental Chemicals, prepared by the National Center for Environmental Health, Centers for Disease Control and Prevention, Atlanta, GA; Needham *et al.* 1995 = Needham LL, Hill RH Jr, Ashley DL, Pirkle JL, and Sampson EJ. Environ Health Perspect 103(Suppl 3):89–94; Needham *et al.* 1996 = Needham LL, Patterson DG Jr, Burse VW, Paschal DC, Turner WE, and Hill VW Jr. Toxicol Ind Health 12:507–513; NHANES III = The Third National Health and Nutrition Examination Survey, conducted by the National Center for Health Statistics, Centers for Disease Control and Prevention, Atlanta, GA; NTP = National Toxicology Program; Paschal *et al.* 1998 = Paschal DC, Ting BC, Morrow JC, *et al.* Environ Res, Section A 76: 53–59; PBPK modeling = physiologically based pharmacokinetic modeling; Toxicological profile = ATSDR's toxicological profiles for the Agency's priority hazardous substances.
⁵ Not a priority data need.

TABLE 2.—GROUPS WHICH ARE ADDRESSING/HAVE ADDRESSED ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS (PDNS)

Program	Firm, institution, agency, or consortium	Substance	PDN ID
Voluntarism	American Chemistry Council	Vinyl chloride	44B, 44E
		General Electric Company	36H*, 36I*, 36J*
		Halogenated Solvents Industry Alliance, Inc.	33A, 33B
Minority Health Professions Foundation.	Florida A & M University	Tetrachloroethylene	40B, 40C, 40D, 40E
		Trichloroethylene	43B, 43C, 43D, 43E
	The King/Drew Medical Center of the Charles R. Drew University of Medicine and Science.	Lead	29A
		Lead	29B, 29C
		PAHs	37A, 37B, 37C, 37D
	Meharry Medical College	Lead	29C
		Di-n-butyl phthalate	21D
	Morehouse School of Medicine	Lead	29A
		Toluene	41C
	Texas Southern University	Trichloroethylene	43B
Tuskegee University		Chlordane	9A
Xavier University	Mercury	31A	
	Zinc	46A, 46B	
	Manganese	30A, 30B	
Great Lakes Human Health Effects Research Program.	Michigan State University	Zinc	46A
		DDT/DDE	19D, 19E
	New York State Health Department ...	Lead	29C
		Mercury	31D
		PCBs	36D, 36E, 36J*
		Selenium	38D
		DDT/DDE	19E
	State University of New York at Albany.	Lead	29C
		Mercury	31D
		PCBs	36D, 36E, 36J*
	State University of New York at Buffalo.	PCBs	36E
		DDT/DDE	19D, 19E
	State University of New York at Oswego.	Lead	29C
		Mercury	31D
		PCBs	36D, 36E, 36J*
DDT/DDE		19D, 19E	
University of Illinois at Chicago	Lead	29C	
	Mercury	31D	
	PCBs	36D, 36E, 36J*	
		DDT/DDE	19D, 19E

TABLE 2.—GROUPS WHICH ARE ADDRESSING/HAVE ADDRESSED ATSDR'S SUBSTANCE-SPECIFIC PRIORITY DATA NEEDS (PDNS)—Continued

Program	Firm, institution, agency, or consortium	Substance	PDN ID
Environmental Protection Agency TSCA/FIFRA.	University of Illinois at Urbana-Champaign.	Lead	29C
		Mercury	31D
		PCBs	36D, 36E, 36J*
		DDT/DDE	19D, 19E
	University of Wisconsin-Milwaukee	Lead	29C
		Mercury	31D
		PCBs	36D, 36E, 36J*
		DDT/DDE	19D, 19E
	Wisconsin Department of Health and Social Services—5 State Consortium.	Lead	29C
		Mercury	31D
		PCBs	36A, 36D, 36E, 36J*
		Selenium	38D
		Arsenic	2D
		Cadmium	7B
		Chromium	13E
		DDT/DDE	19D, 19E
		Lead	29C
		Mercury	31D
	EPA/ATSDR Test Rule	Nickel	34F
		PAHs	37F
PCBs		36D, 36E, 36J*	
Benzene		4A, 4B, 4C	
Metals Testing Task Force (TASARC)		Chloroethane	11A, 11B
		Cyanide (hydrogen cyanide and sodium cyanide)	14A, 14B
		Methylene chloride	33A
		Tetrachloroethylene	40C, 40E
		Toluene	41C
		Trichloroethylene	43B, 43E
	Arsenic	2A, 2B, 2C	
	Beryllium	6A, 6B, 6C, 6E	
	Chromium	13A, 13B, 13C, 13D	
	Manganese	30A, 30B, 30E	
National Toxicology Program	Mercury	31C	
	Nickel	34B, 34C, 34D, 34E	
	Selenium	38A, 38B	
	Carbon tetrachloride	8B	
	1,1-dichloroethene	18A, 18B	
	Di-n-butyl phthalate	21A	
	Disulfoton	22A	
	Heptachlor	26B	

* Not priority data needs.

Editorial Note: FR Doc. 05-23361 was originally published at page 71506 in the issue of Tuesday, November 29, 2005. The corrected document is republished in its entirety, due to printing errors.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[60Day-06-0556]

Proposed Data Collections Submitted for Public Comment and Recommendations

In compliance with the requirement of Section 3506(c)(2)(A) of the Paperwork Reduction Act of 1995 for opportunity for public comment on proposed data collection projects, the Centers for Disease Control and Prevention (CDC) will publish periodic

summaries of proposed projects. To request more information on the proposed projects or to obtain a copy of the data collection plans and instruments, call 404-639-4766 or send comments to Seleda Perryman, CDC Assistant Reports Clearance Officer, 1600 Clifton Road, MS-D74, Atlanta, GA 30333 or send an e-mail to omb@cdc.gov.

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c)