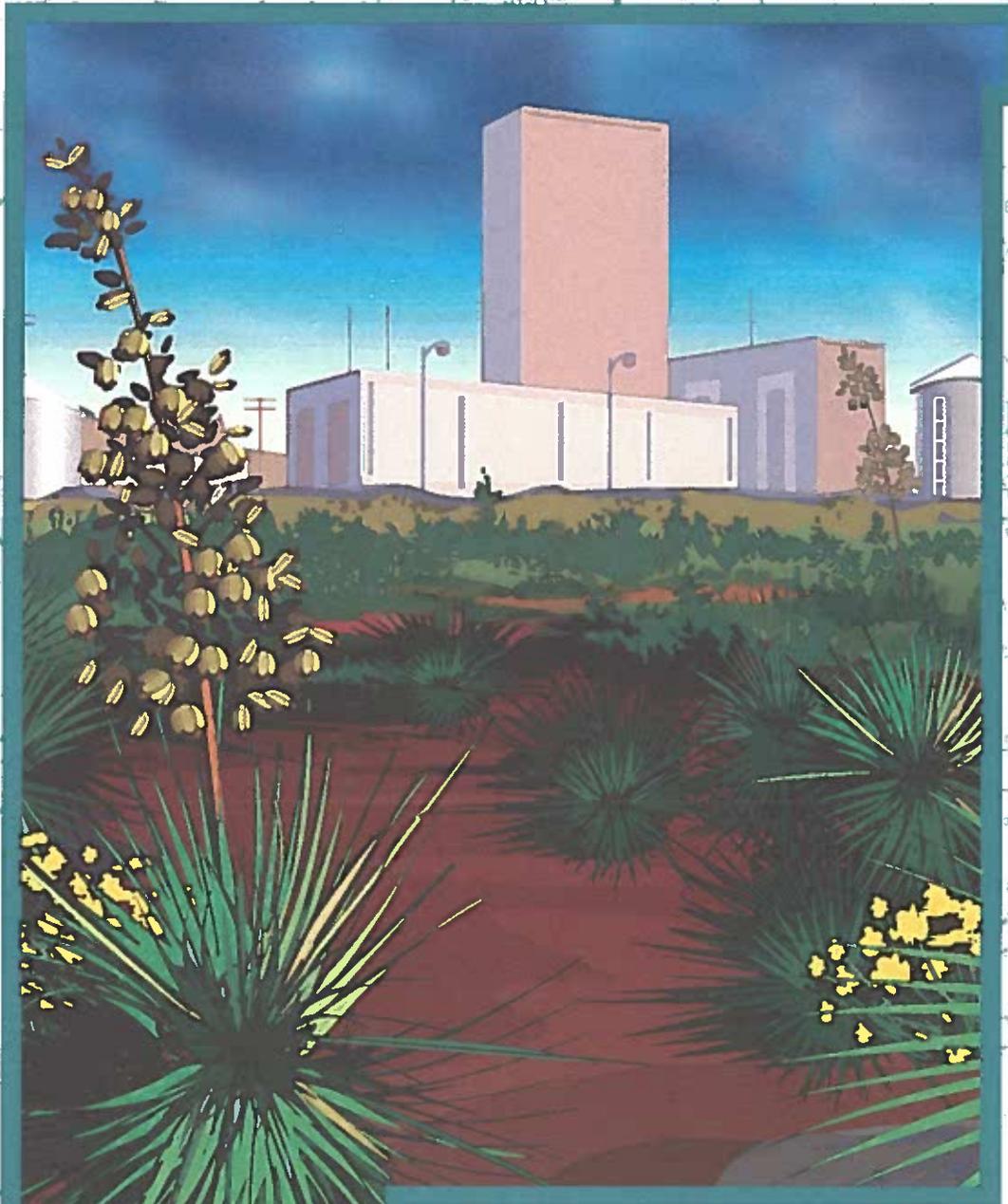
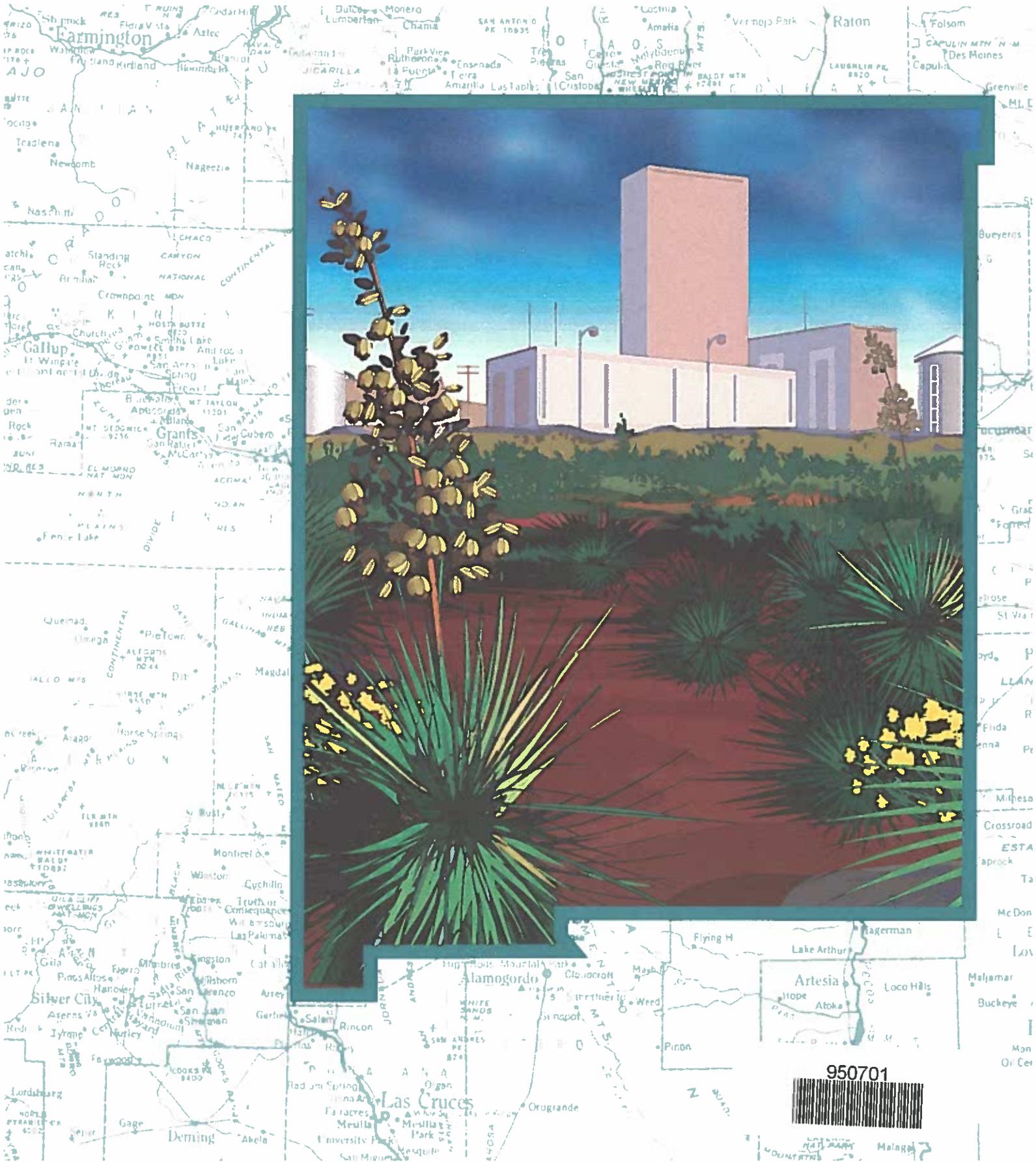
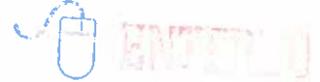




# EPA and the WIPP



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# EPA and the WIPP

A Commitment to Protect

A Commitment to Communicate and Consult

**H**ow will the United States dispose of its nuclear weapons waste? Steps are now being taken to determine whether the Waste Isolation Pilot Plant (WIPP) will become the nation's first underground disposal site for transuranic nuclear waste generated by the defense industry.

For many years, the question of how to safely dispose of nuclear waste has been debated. A disposal approach has been difficult to agree on because nuclear waste remains radioactive and potentially harmful to humans and the environment for thousands of years. Responsible management of this waste requires a long-term approach that limits and controls public exposure to it. The Department of Energy (DOE) is now investigating the possibility of deep geologic disposal of nuclear waste at the WIPP in New Mexico.

In 1992, Congress passed the WIPP Land Withdrawal Act (the Act), which gave the U.S. Environmental Protection Agency (EPA) substantial responsibility for regulating many of DOE's activities at the WIPP. Under the terms of the Act, DOE may not dispose of any waste at the WIPP unless EPA's radioactive waste disposal regulations and hazardous waste disposal requirements have been satisfied. The Agency's goal is to protect the environment at and around the WIPP site and the public health of present and future generations.

In carrying out its responsibilities, EPA is conferring with scientific advisory groups, DOE, other federal agencies, state and local authorities, citizen groups, and environmental organizations. The Agency is committed to conducting its activities in an open manner and consulting with the public early and frequently throughout the WIPP implementation process.

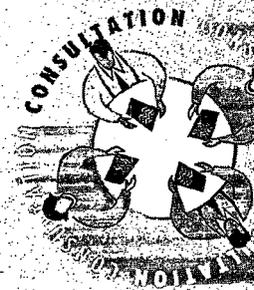


## EPA's IMPLEMENTATION PRINCIPLES

EPA will strive to develop a regulatory program designed to protect present and future generations from the risks posed by potential disposal of waste at the WIPP.



EPA will base its decisions on the best available scientific and technical data while recognizing that uncertainties about the performance of the WIPP will always exist.



EPA recognizes the important roles played by the state and local governments, citizen and environmental groups, industry, and other federal agencies. The Agency commits to conducting an open public process that includes interaction with these groups and other interested parties.



EPA will establish and meet commitments to implement the WIPP legislation effectively, consistent with its legal authority.

## WIPP—A Potential Disposal Site for Transuranic Waste and Transuranic Mixed Waste

The WIPP is being studied as a potential repository for the disposal of transuranic waste and transuranic mixed waste. Transuranic waste is a type of nuclear waste that is generated during the manufacture of nuclear weapons. Much of the waste destined for disposal at the WIPP is in the form of transuranic mixed waste, which is a combination of transuranic waste and hazardous chemical or metal components. The waste targeted for disposal at the WIPP has been produced since 1970 and is currently being stored above ground or just below the surface at various DOE sites across the country.

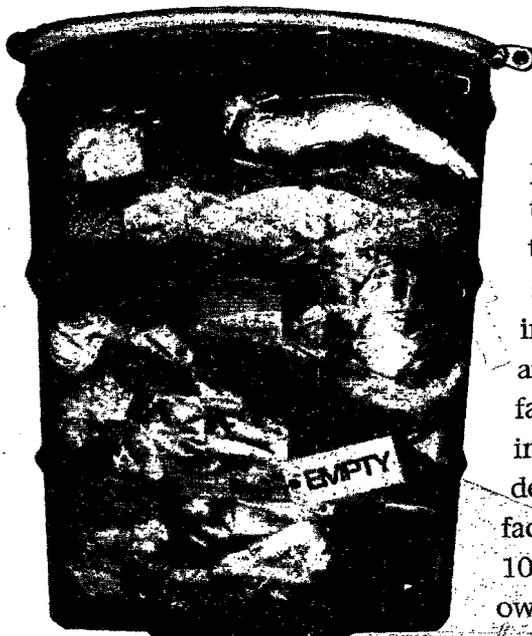
There are two types of transuranic waste—"contact-handled" and "remote-handled." Contact-handled waste emits radioactive particles which are dangerous if inhaled or ingested. Workers can handle the canisters that hold the waste but must wear protective gear to avoid inhaling or ingesting the material. Much of the contact-handled waste consists of laboratory clothing, equipment, and sludges that have become contaminated with radioactive material during routine operations at defense facilities. Remote-handled waste emits higher levels of penetrating radiation

and, therefore, must be handled by remotely-operated machines. Only a small portion of the volume of wastes potentially destined for disposal at the WIPP is remote-handled waste. However, this amount would constitute a significant percentage of the total radioactivity of the disposed materials.

### OVERVIEW OF THE WIPP PROJECT

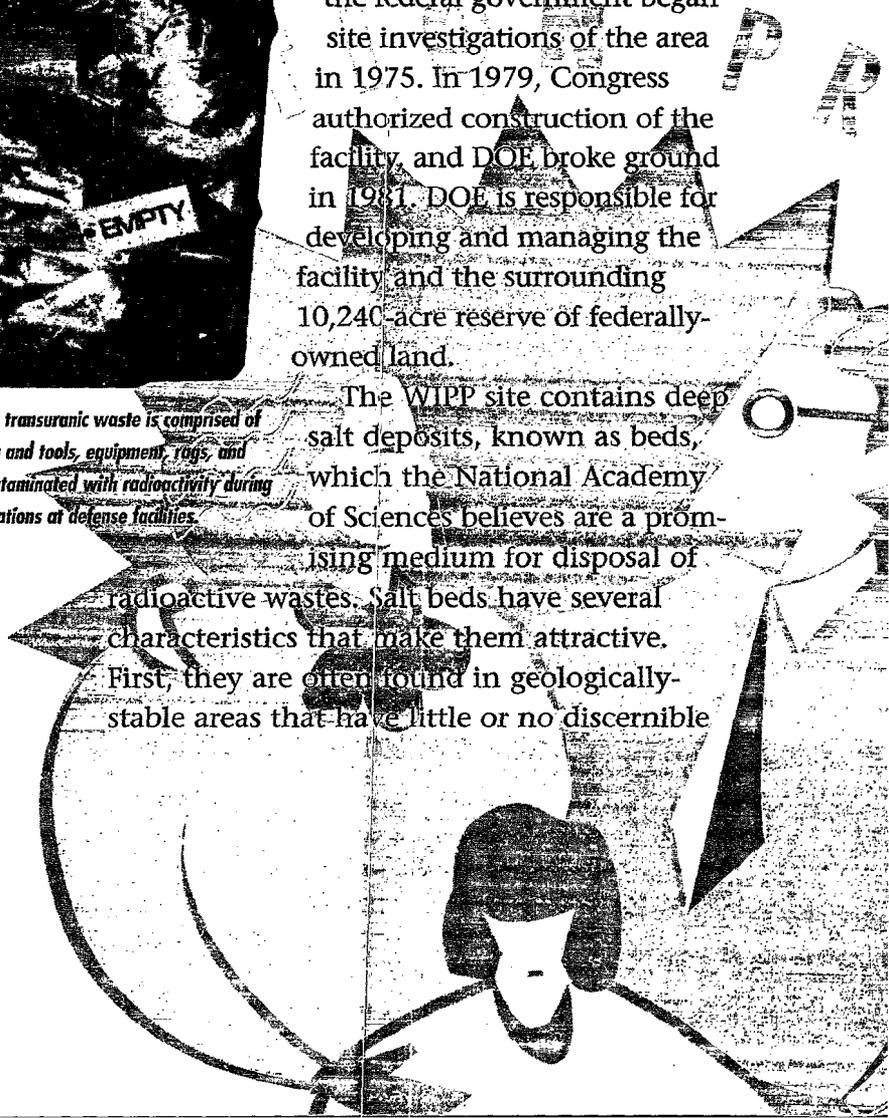
Located near Carlsbad, New Mexico, the WIPP is the nation's first facility to research deep geological disposal of transuranic waste. At the invitation of local officials, the federal government began site investigations of the area in 1975. In 1979, Congress authorized construction of the facility, and DOE broke ground in 1981. DOE is responsible for developing and managing the facility and the surrounding 10,240-acre reserve of federally-owned land.

The WIPP site contains deep salt deposits, known as beds, which the National Academy of Sciences believes are a promising medium for disposal of radioactive wastes. Salt beds have several characteristics that make them attractive. First, they are often found in geologically-stable areas that have little or no discernible



*Most of the nation's transuranic waste is comprised of laboratory clothing and tools, equipment, rags, and sludges that were contaminated with radioactivity during routine operations at defense facilities.*

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earthquake activity. Second, they usually lack underground water sources. And third, they are relatively easy to mine and are capable of creeping to seal any cracks that might develop in the surrounding earth.

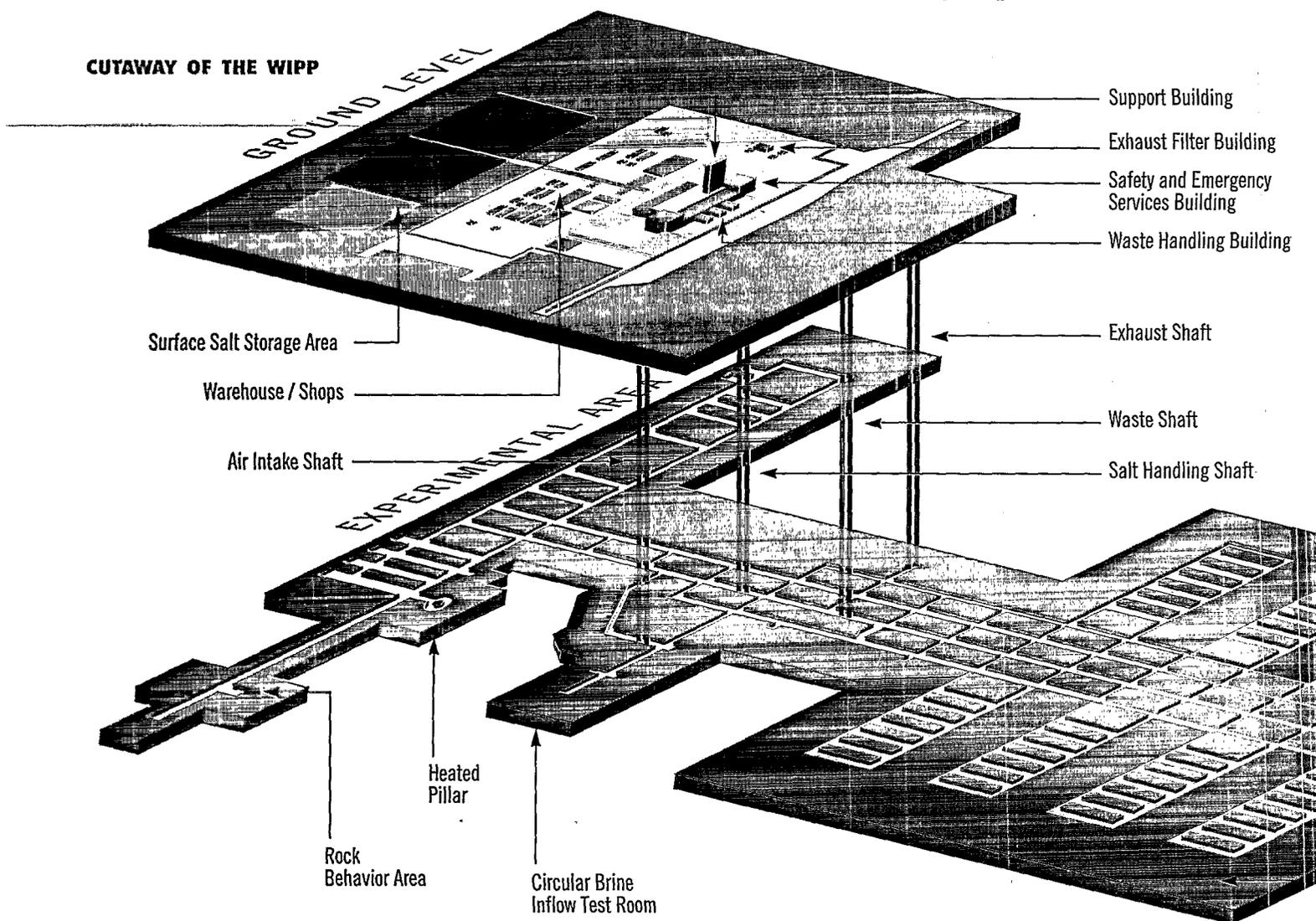
The disposal facility is designed to hold approximately 850,000 drums of transuranic or transuranic mixed waste. Approximately 97 percent of the transuranic waste would be contact-handled waste, which would be placed in rooms carved out of the salt rock. According to DOE's current plans, the remaining remote-handled transuranic waste would be packaged in carbon steel cylinders that would be placed in holes drilled in disposal room walls. The holes would then be plugged and the rooms and shafts sealed.

### WIPP: THREE POSSIBLE PHASES

There are three possible phases of activity in the WIPP project. In the current and first phase, the Pre-Disposal Phase, DOE is engaging in activities to learn about the long-term performance of the WIPP. During this phase, DOE is conducting field studies, laboratory tests, and computer modeling to gain a clearer idea of the WIPP's capability to isolate waste. EPA has commented on DOE's Experimental Program Plan for data collection.

Once these activities are completed, DOE must demonstrate that the WIPP will comply with EPA's regulations relating to radioactive waste disposal and hazardous waste disposal. To demonstrate compliance with hazardous waste rules, DOE may choose to either treat the waste according to specific standards or

CUTAWAY OF THE WIPP



submit detailed documentation showing that the hazardous components of the transuranic mixed waste will not migrate from the WIPP site for as long as the waste remains hazardous. If EPA approves both demonstrations and if other requirements of the Act are met, the second phase, called the **Disposal Phase**, will begin: DOE will start disposal of transuranic and transuranic mixed waste at the WIPP. Eventually, if requirements continue to be met, the third and final phase, or **Decommissioning Phase**, will begin: DOE will close the WIPP, backfilling and permanently sealing the facility.

### EPA'S ROLE AT THE WIPP

The WIPP Land Withdrawal Act made EPA responsible for regulating many of DOE's activities concerning the WIPP. The Act makes it

clear that no waste can be brought to the WIPP, even for experimental purposes, unless EPA determines that a variety of public health and environmental protection requirements have been satisfied.

EPA is committed to developing and maintaining an open communication and consultation process while it fulfills these WIPP regulatory responsibilities. The Agency is now working to inform the public about EPA's responsibilities, soliciting comments on all proposed regulations and conferring with scientific, environmental, and civic organizations, as well as federal, state, and local government agencies.

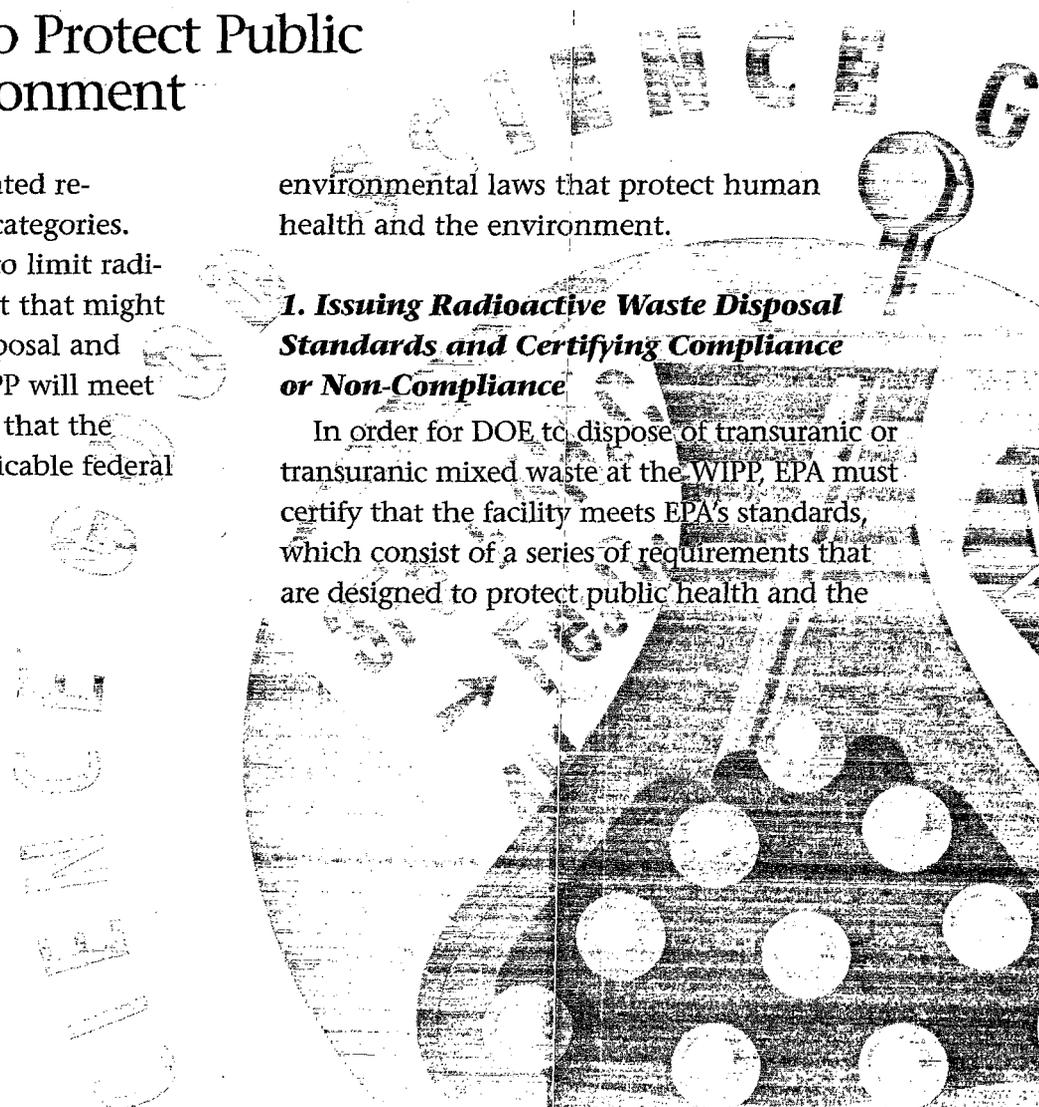
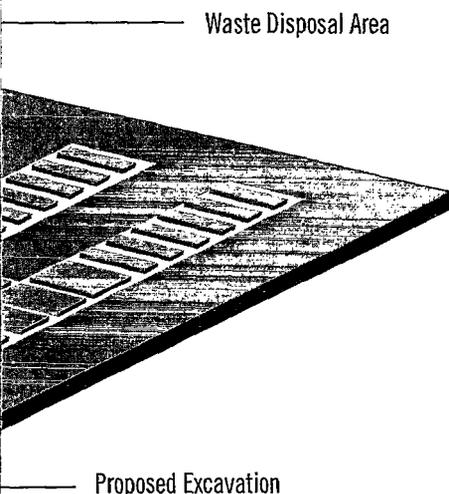
## EPA's Commitment to Protect Public Health and the Environment

Under the Act, EPA's WIPP-related responsibilities fall into two basic categories. **First**, EPA must issue standards to limit radiation releases to the environment that might result from radioactive waste disposal and then determine whether the WIPP will meet them. **Second**, EPA must ensure that the facility complies with other applicable federal

environmental laws that protect human health and the environment.

### 1. Issuing Radioactive Waste Disposal Standards and Certifying Compliance or Non-Compliance

In order for DOE to dispose of transuranic or transuranic mixed waste at the WIPP, EPA must certify that the facility meets EPA's standards, which consist of a series of requirements that are designed to protect public health and the



environment from the potential hazards of radioactive waste disposal. The Agency issued the following requirements in 1985 and amended them in December of 1993.

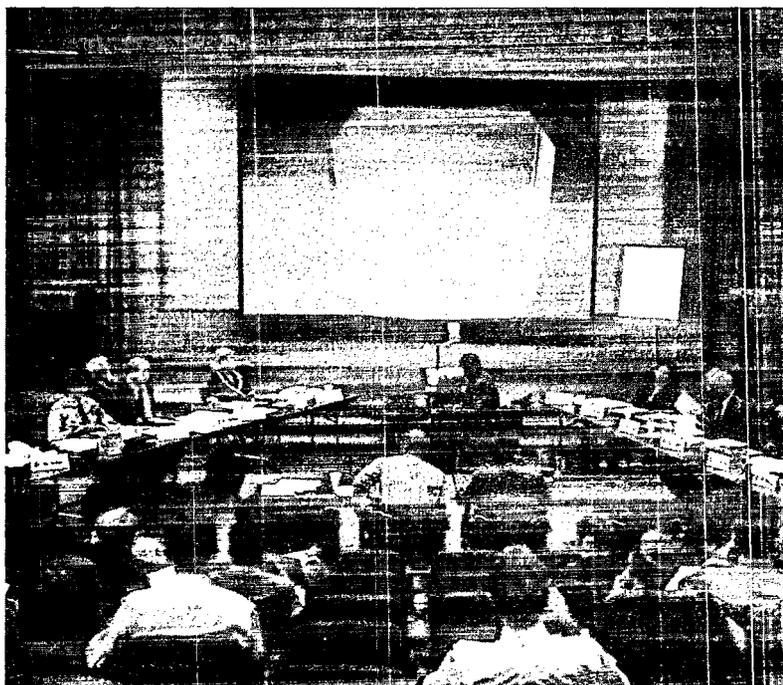
EPA's **Containment Requirements** dictate that waste disposal systems be designed to minimize all releases of radionuclides for 10,000 years. The facility must also meet **Assurance Requirements**, which require wastes to be disposed of in a cautious manner that reduces the likelihood of any radiation being released from the facility. The Assurance Requirements, for example, require "markers" to be placed around the WIPP to discourage people from disturbing the site. The **Individual Protection Requirements** require that the WIPP be designed to limit the amount of radiation to which an individual can be exposed. The **Ground-Water Protection Requirements** establish rules to protect current and potential underground sources of drinking water from radiation contamination.

In order for DOE to dispose of waste at the WIPP, it must apply to EPA for certification of the WIPP's compliance with these radioactive waste disposal standards. EPA will develop **compliance criteria**, which elaborate on what constitutes compliance with the radioactive waste disposal standards. After receiving DOE's certification application, EPA has up to three years to decide whether the WIPP will or will not comply with the disposal standards. If the Agency finds that DOE's application does not satisfy the criteria for compliance certification, DOE will be required to begin the process of "decommissioning," or closing, the facility. Even if EPA permits disposal to begin, the WIPP will be subject to ongoing Agency oversight. DOE is required to demonstrate the WIPP's continuing compliance with the disposal standards every five years until the WIPP is closed.

## 2. Compliance with Other Environmental Laws

Much of the waste designated for disposal at the WIPP is transuranic mixed waste, which contains hazardous waste components as well as radioactive components. Consequently, disposal at the WIPP will not begin unless DOE also demonstrates to EPA that the requirements of the Resource Conservation and Recovery Act (RCRA), under which EPA regulates hazardous waste, will be met.

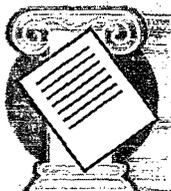
Under RCRA, hazardous waste cannot be disposed of unless it is treated or EPA determines that the hazardous materials in the waste will not migrate from the disposal unit for as long as the wastes remain hazardous. Therefore, before placing transuranic mixed waste in the WIPP, DOE must either treat it to specified EPA standards or submit to EPA a "No-Migration" petition that explicitly



*As it fulfills its regulatory requirements, EPA will regularly consult with the WIPP Review Subcommittee of the National Advisory Council for Environmental Policy and Technology (NACEPT). This Subcommittee was created to advise the Administrator of EPA on policy and technical matters relating to the WIPP. Subcommittee members are independent experts from academic institutions, state government agencies, environmental groups, industry, and nonprofit organizations. WIPP Review Subcommittee meetings are open to the public.*

# REGULATORY MILESTONES

EPA must make the following determinations in order for WIPP to become a permanent disposal site for transuranic and transuranic mixed waste.



### Radioactive Waste Disposal Standards

EPA published final radioactive waste disposal standards in December, 1993.



### Compliance Criteria

EPA must publish final criteria for certifying whether the WIPP will comply with the radioactive waste disposal standards. The Agency plans to publish proposed criteria in the Summer of 1994 and the final criteria by the Summer of 1995.



### Biennial Environmental Compliance Determination

Beginning October 30, 1994, and every two years thereafter, DOE must provide documentation to EPA demonstrating the WIPP's compliance with all applicable federal environmental laws. EPA must make a formal compliance determination within six months.



### No-Migration Determination

DOE will have to treat mixed waste going to the WIPP according to specified EPA standards. Alternatively, DOE must submit, and EPA must approve, a "No-Migration" Petition for the WIPP Disposal Phase. DOE will also have to obtain appropriate hazardous waste disposal permits from New Mexico authorities.



### Compliance Certification

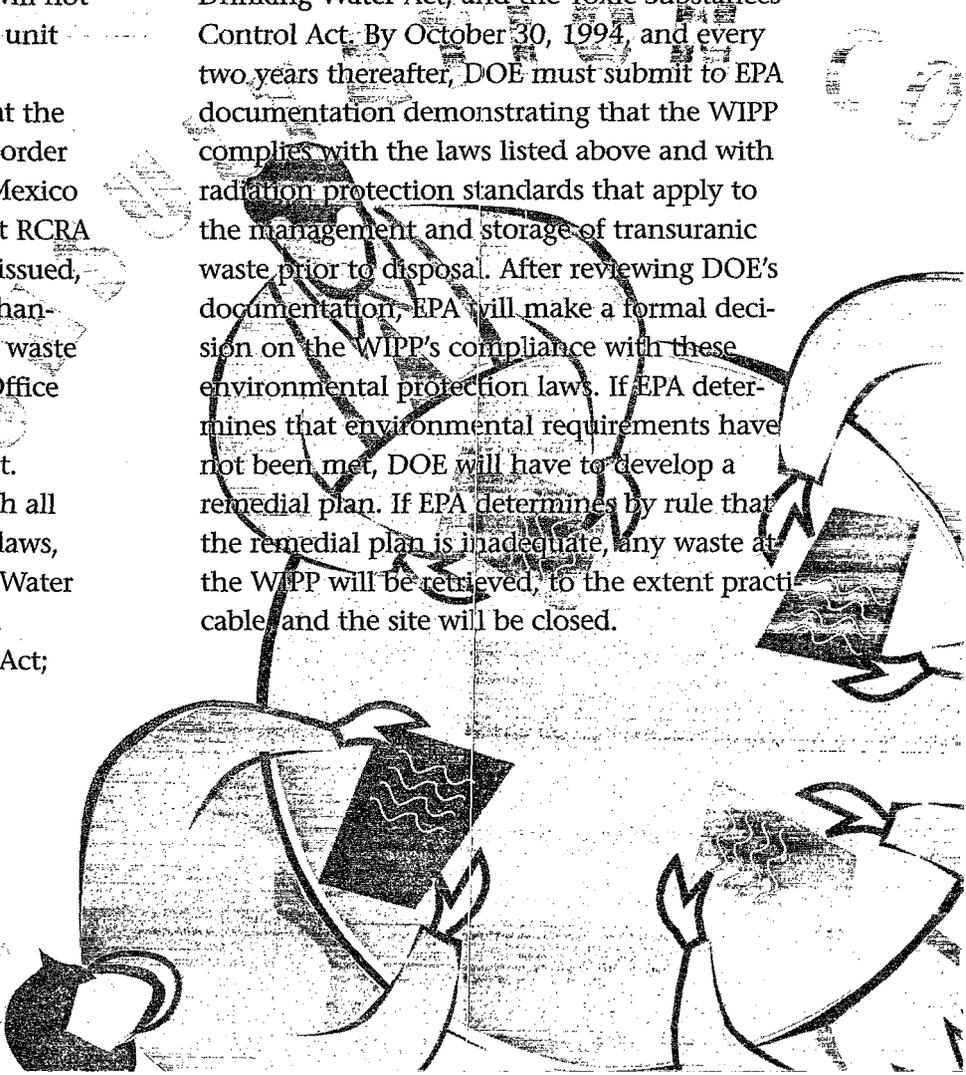
EPA must certify whether or not the WIPP facility will meet hazardous waste and radioactive waste disposal standards.

demonstrates that hazardous materials will not migrate from the repository beyond the unit boundary.

Disposal of transuranic mixed waste at the WIPP requires state approval as well. In order for disposal to begin, the State of New Mexico and U.S. EPA Region 6 must issue a joint RCRA hazardous waste permit. This permit, if issued, would set specific conditions on DOE's handling and disposal of transuranic mixed waste at the WIPP. Staff from EPA's Region 6 Office will provide technical assistance to New Mexico officials in processing the permit.

The WIPP must also fully comply with all other applicable federal environmental laws, including: the Clean Air Act; the Clean Water Act; the Comprehensive Environmental Response, Compensation, and Liability Act; additional provisions of RCRA; the Safe

Drinking Water Act; and the Toxic Substances Control Act. By October 30, 1994, and every two years thereafter, DOE must submit to EPA documentation demonstrating that the WIPP complies with the laws listed above and with radiation protection standards that apply to the management and storage of transuranic waste prior to disposal. After reviewing DOE's documentation, EPA will make a formal decision on the WIPP's compliance with these environmental protection laws. If EPA determines that environmental requirements have not been met, DOE will have to develop a remedial plan. If EPA determines by rule that the remedial plan is inadequate, any waste at the WIPP will be retrieved, to the extent practicable, and the site will be closed.



# EPA's Commitment to Open Communication and Consultation

EPA is committed to conducting its WIPP activities in an open and informative manner. The Agency believes that open dialogue and public participation in both technical and nontechnical matters will improve the regulatory process and lead to sound public policy decisions.

To implement this philosophy, EPA has held and will continue to hold public meetings and hearings to obtain comments on all of its proposed regulations relating to the WIPP. Most of the future meetings and hearings will be held in New Mexico to encourage input from those closest to the WIPP. The Agency will also ensure that technical meetings between itself and DOE are open to the public. Finally, EPA will continue to communicate with other federal agencies, state and local governments, environmental and citizen groups, and other interested parties on important WIPP issues.

## CONSULTATION

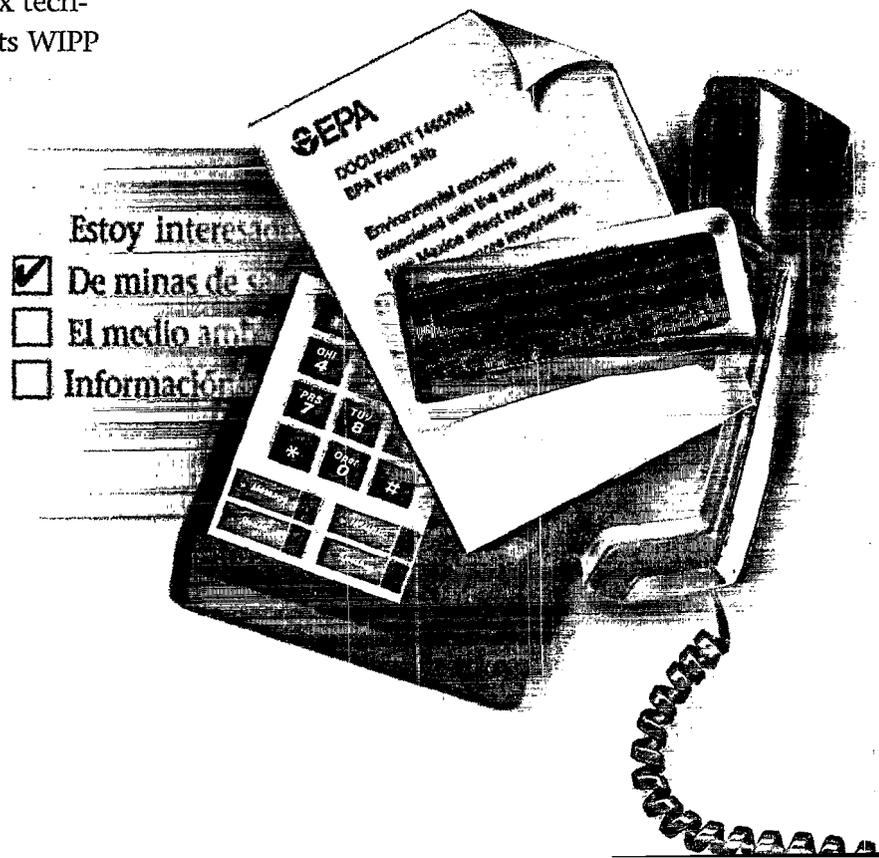
Recognizing the difficult and complex technical and policy issues associated with its WIPP implementation responsibilities, EPA established the WIPP Review Subcommittee under the National Advisory Council for Environmental Policy and Technology (NACEPT). The Subcommittee provides independent advice on EPA's activities and issues associated with implementation of the WIPP Land Withdrawal Act. Members of

the Subcommittee are independent experts from academic institutions, state government, environmental organizations, and consulting groups. Subcommittee meetings are open to the public and provide opportunities for early discussion of important WIPP issues.

## PUBLIC OUTREACH

In the Summer of 1993, EPA representatives met with New Mexico residents and government officials to identify the key issues that concern them, the types of information they want from EPA, and the best ways to communicate with different sectors of the New Mexico public. The feedback provided by this group of citizens forms the basis for EPA's WIPP communications and consultation plan.

To help citizens stay abreast of EPA's many WIPP-related activities, EPA is providing the following information products and services.



- Files (known as "dockets") of information are available for review at three separate locations in New Mexico, as well as at EPA headquarters in Washington, D.C. These dockets contain the information used by EPA in carrying out its WIPP rulemaking responsibilities.

- A toll-free phone number with a recorded message (in English and Spanish) provides the latest information on upcoming public meetings, publications, and other WIPP-related activities. Callers can also leave questions for EPA staff.

- A variety of WIPP publications are available from EPA. Among these are:

**Fact Sheets** (printed in English and Spanish), describing EPA's WIPP oversight role, the radioactive waste disposal standards, the NACEPT WIPP Subcommittee, and the No-Migration Determination. Additional fact sheets will be developed to describe other key elements of EPA's WIPP program.

**EPA WIPP Update**, published as needed, to let the public know about new developments relating to the WIPP.

**EPA WIPP Bulletin**, a semiannual publication featuring in-depth articles on EPA's WIPP program.

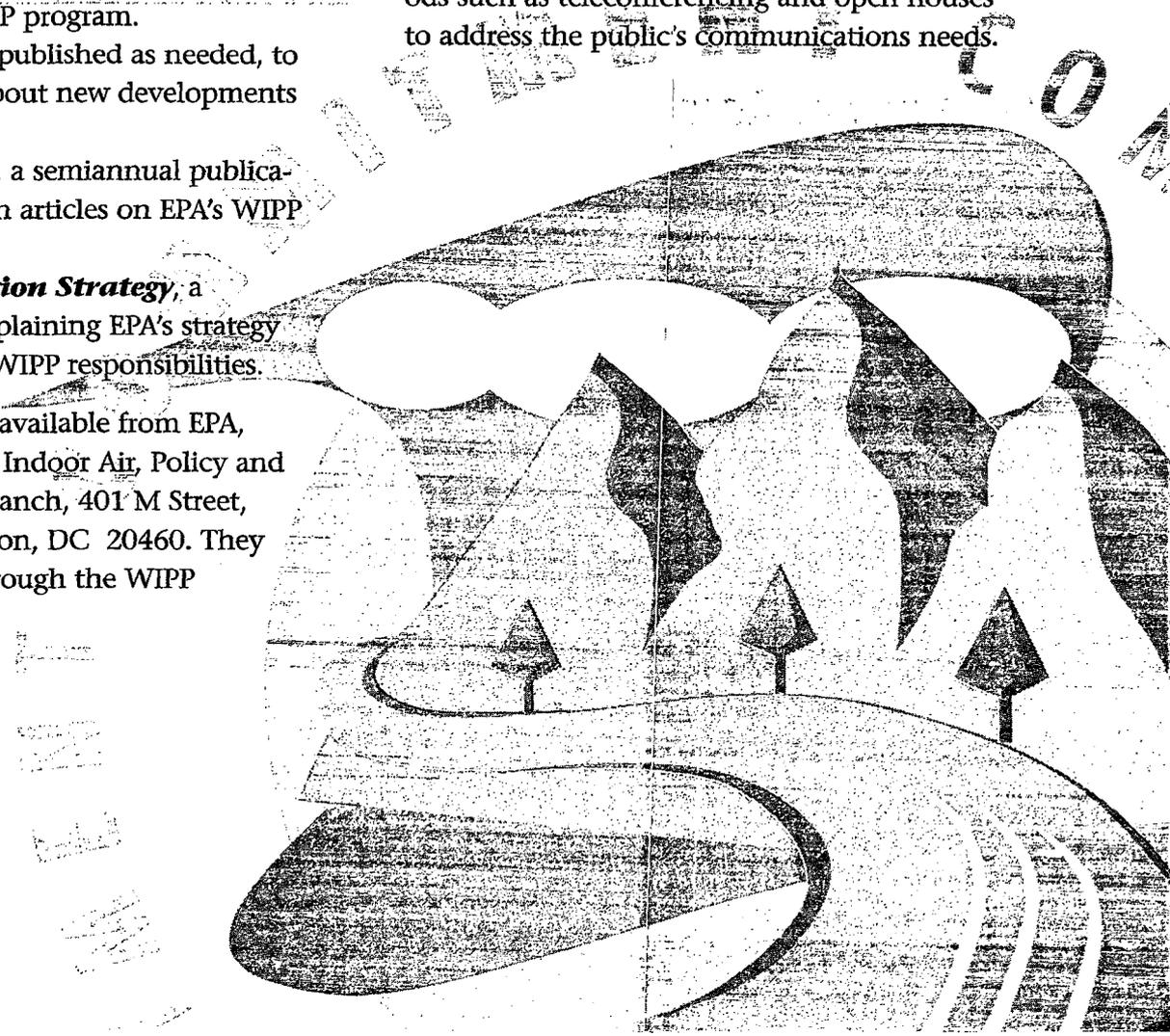
**WIPP Implementation Strategy**, a detailed document explaining EPA's strategy for implementing its WIPP responsibilities.

These documents are available from EPA, Office of Radiation and Indoor Air, Policy and Emergency Response Branch, 401 M Street, S.W., (6602J), Washington, DC 20460. They may also be ordered through the WIPP Information Line.

- EPA's electronic bulletin board, the Technology Transfer Network (TTN), provides on-line information regarding the WIPP. TTN can be accessed, using telecommunications software and a modem, at (919) 541-5742. For assistance in accessing the network, call the Help Desk at (919) 541-5384 between 1 p.m. and 5 p.m. EST.

- A WIPP mailing list has been established to systematically provide interested parties with copies of EPA's public information documents and other materials. Additions to the mailing list may be made by calling the WIPP Information Line or writing to EPA's Policy and Emergency Response Branch.

As EPA's WIPP program proceeds, the Agency plans to assess the effectiveness of its communications program in meeting the needs of the public and make changes as necessary. The Agency will also be exploring methods such as teleconferencing and open houses to address the public's communications needs.



As EPA implements its regulatory responsibilities relating to the WIPP, there will be numerous opportunities for public input into EPA's decisions. To help the public take advantage of these opportunities, EPA will follow procedures outlined in the Administrative Procedures Act.

Specifically, EPA will announce a proposed rule through a "Notice of Proposed Rulemaking" (NPRM), which will appear in the *Federal Register*, a government publication. Issuance of the proposed rule will also be announced on the WIPP Information Line. The Agency will then accept written comments on the proposed rule from the public. In addition, EPA will hold public hearings in New Mexico so that interested parties can provide testimony on the proposed rule. EPA will consider all comments and testimony before developing final regulations.

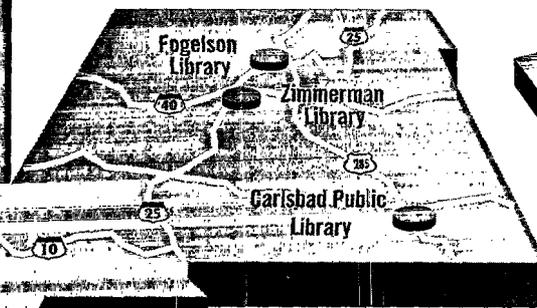
The public is also invited to attend and provide input at meetings of the NACEPT WIPP Review Subcommittee. These meetings will often address regulatory issues. EPA will announce upcoming meetings in the *Federal Register* and on the WIPP Information Line.

## EPA's Pivotal Role

EPA has a new and pivotal role in determining whether transuranic waste and transuranic mixed waste will be disposed of at the Waste Isolation Pilot Plant. Agency approval is necessary in order for disposal activities to begin and continue at the WIPP. EPA welcomes the challenges and opportunities posed by its new responsibilities. To meet these challenges, the Agency is committed to communicating and consulting with all interested parties and to using the best available scientific and technical data in making its decisions.

New Mexico

Washington, DC



Regulatory dockets can be viewed at the following sites.

**Carlsbad Public Library**  
101 S. Halagueno  
Carlsbad, NM 88220  
(505) 885-6776

**Fogelson Library**  
College of Santa Fe  
1600 St. Michaels Drive  
Santa Fe, NM 87505  
(505) 473-6576

**Government Publications Department**  
Zimmerman Library  
University of New Mexico  
Albuquerque, NM 87131  
(505) 277-5441

**U.S. EPA**  
Waterside Mall  
Room M1500  
401 M Street, S.W.  
Washington, DC 20460  
(202) 260-7548

The dockets are referenced as follows:

**Radioactive Waste:**  
Docket No. R-89-01 Radioactive Waste Disposal Standards  
(40 CFR Part 191)

**WIPP:**  
Docket No. A-92-56 Compliance Criteria  
(40 CFR Part 194)  
Docket No. A-93-02 Compliance Certification and Determination

## FOR MORE INFORMATION

### Contact the following EPA organizations for more information on:

#### *Radiation Protection Standards, The Experimental Program Plan, Compliance Criteria, Preliminary Compliance Assessments*

U.S. Environmental Protection Agency  
Office of Radiation and Indoor Air  
Radioactive Waste Management Branch  
401 M Street, S.W. (6602)  
Washington, DC 20460  
(202) 233-9205

#### *Resource Conservation and Recovery Act (RCRA)*

U.S. Environmental Protection Agency  
Office of Solid Waste  
401 M Street, S.W. (5303W)  
Washington, DC 20460  
(703) 308-8766

#### *Compliance with Other Environmental Laws*

U.S. Environmental Protection Agency  
Region 6  
Technical Section, Air Enforcement Branch  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733  
(214) 655-7223

#### *EPA Communications Plan, Informational Materials, the WIPP Information Line and the WIPP Mailing List*

U. S. Environmental Protection Agency  
Office of Radiation and Indoor Air  
Policy and Emergency Response Branch  
401 M Street, S.W. (6602)  
Washington, DC 20460  
(202) 233-9360

### Other agencies with key oversight responsibilities at the WIPP include:

**Department of Energy (DOE)** - DOE is responsible for the development and day-to-day management of the WIPP facility.

Department of Energy  
Carlsbad Area Office  
P. O. Box 3090  
Carlsbad, NM 88221  
(505) 234-7313

#### **Occupational Safety and Health**

**Administration (OSHA)** - OSHA is responsible for reviewing DOE's training programs for fire fighters, medics, and others who would respond to an emergency along the waste transportation routes to the WIPP.

Department of Labor  
Occupational Safety and Health Administration  
Directorate of Policy  
Room N3647  
200 Constitution Avenue, N.W.  
Washington, DC 20210  
(202) 501-6653

**Department of Transportation (DOT)** - The DOT is responsible for working with individual states to establish the surface routes that will be used to transport waste to the WIPP.

Department of Transportation  
Federal Highway Commission  
Office of Motor Carriers  
555 Zang Street, Room 190  
Lakewood, CO 80228  
(303) 969-6744

#### **Mine Safety and Health Administration**

(MSHA) - The MSHA is charged with guaranteeing the safety and health of miners. The Act requires MSHA to conduct inspections at least four times per year to determine whether mined rooms are stable and safe. The inspection reports are available to the public.

Department of Labor  
Mine Safety and Health Administration  
Administrator for Metal and Nonmetal  
Room 728  
4015 Wilson Boulevard  
Arlington, VA 22203  
(703) 235-1565

**Bureau of Mines (BOM)** - BOM is responsible for mine safety. Under the Act, BOM must annually evaluate the structural stability of the WIPP site.

Bureau of Mines  
Branch of Health and Safety Technology  
810 Seventh Street, N.W.  
Washington, DC 20241  
(202) 501-9331 or 9650

**Nuclear Regulatory Commission (NRC)** - The NRC implements EPA's and its own standards for protecting the public from radiation. It also regulates the transportation of nuclear waste.

Nuclear Regulatory Commission  
Storage and Transport Systems Branch  
1 White Flint North (6H3)  
11555 Rockville Pike  
Rockville, MD 20852  
(301) 504-3595

#### **New Mexico Environment Department**

(NMED) - The NMED is responsible for issuing and enforcing RCRA permits relating to the disposal of transuranic mixed waste.

New Mexico Environment Department  
Hazardous & Radioactive Materials Bureau  
1190 St. Francis Drive  
P. O. Box 26110  
Santa Fe, NM 87502  
(505) 827-4358