CAPACITY ASSURANCE PLAN
FOR THE
STATE OF NEW JERSEY

Volume 1 of 4
Chapter 1, Chapter 2 and Chapter 3

Submitted to the USEPA
October 17, 1989

TABLE OF CONTENTS

VOLUME 1

VOLUME 3

Chapter 1

Introduction and Overview of the Capacity Assurance Process

1. Introduction and Overview of the Capacity Assurance Process

1.1 The Provision of CERCLA 104(c)(9)

The New Jersey Department of Environmental Protection (NJDEP) has developed this Capacity Assurance Plan, or CAP, in order to comply with the requirements of Section 104(c)(9) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). The language of this statutory provision is as follows.

"Siting---Effective 3 years after enactment of the Superfund Amendments and Reauthorization Act of 1986, the President shall not provide any remedial actions pursuant to this section unless the State in which the release occurs first enters into a contract or cooperative agreement with the President providing assurances deemed adequate by the President that the State will assure the availability of hazardous waste treatment or disposal facilities which---

(a) have adequate capacity for the destruction, treatment, or secure disposition of all hazardous wastes that are reasonably expected to be generated within the State during the 20-year period following the date of such contract or cooperative agreement and to be disposed of, treated, or destroyed,

(b) are within the state or outside the state in accordance with an interstate agreement or regional agreement or authority,

(c) are acceptable to the President, and

(d) are in compliance with the requirements of Subtitle C of the Solid Waste Disposal Act."

When enacting Section 104(c)(9) of CERCLA, Congress was concerned that certain states, because of political pressures and public opposition, were not able to create and to permit sufficient facilities within their borders to treat and securely dispose of (or manage) the amounts of wastes produced in those states. Congress believed that some states were not moving aggressively to create facilities needed to manage hazardous wastes and that this inaction could lead to the creation of additional Superfund sites, even though some wastes might be managed at facilities in other states. (S.Rep.No.11, 99th Cong., 1st Sess., at 22, 23, 1985). Congress therefore required, as a condition for EPA taking or providing funding for CERCLA remedial actions, that states provide assurances that capacity to manage the wastes generated within their borders would exist and would be available for 20 years from the date that such actions occurred.

1.2 The New Jersey Hazardous Waste Facilities Siting Act

At the time of the enactment of CERCLA 104(c)(9) (October 17, 1986), the State of New Jersey already had a statutory provision in place which addressed the siting of new facilities. The Major Hazardous

Waste Facilities Siting Act, N.J.S.A. 13:1E-49, et. al. (the Act), was signed into law on September 10, 1981. The Act became the first law in New Jersey providing for the development of needed hazardous waste treatment, storage, and disposal facilities. The Act provides a mechanism to site and construct major commercial hazardous waste facilities which employs the following phases: planning, siting, licensing and regulating.

The Act also establishes a governing body--the Hazardous Waste Facilities Siting Commission to execute the state's responsibility under the Act. The Siting Commission is responsible for planning for the proper management of all hazardous wastes generated in New Jersey. Through the preparation of the Major Hazardous Waste Facilities Siting Plan (1985), and the Plan Update (to be released November, 1989), the Siting Commission has developed an agenda for the number and types of facilities required to properly manage New Jersey's hazardous waste. In New Jersey, the Capacity Assurance Plan (CAP) will also provide this agenda. The activities of the Commission are described more fully in Chapter 6.

1.3 USEPA Guidance to State Officials on the Assurance of Hazardous Waste Capacity (OSWER Directive Number 9010.00, December, 1988)

In response to the enactment of Section 104(c)(9) of CERCLA, the USEPA entered into a contract with the National Governor's Association (NGA) to develop guidance regarding what would constitute an acceptable assurance to USEPA. The NGA based its approach for developing this guidance upon the preliminary areas of concern identified by USEPA. These areas were: generation and capacity projections; waste minimization; interstate shipments; and institutional arrangements for meeting long-term facility needs. The NGA convened four workgroups comprised of representatives from the USEPA and the states to work on each specific area of interest. New Jersey was fortunate to be represented on three of the four workgroups.

In June of 1988, the NGA published its first draft of its suggested Guidance Document. Shortly afterwards, in late August, 1988, the USEPA presented its first draft of the Guidance Document. This document generally incorporated the provisions of the NGA document with the most notable area of exception being demonstration of interstate agreement. Finally, on December 31, 1988, the USEPA issued its final guidance to State officials on the Assurance of Hazardous Waste Capacity (OSWER Directive Number 9010.00). This left the states only 10 months to actually fulfill the complex requirements delineated in the Guidance Document.

The Guidance Document reflects USEPA's current understanding of the statutory requirements and describes how USEPA suggests that states implement these requirements. In addition, the Guidance Document provides suggested language for the contracts and cooperative agreements to be signed by the states, instructions regarding the preparation of state Capacity Assurance Plan that can form a basis for the assurances, and a model for the interstate agreements or regional agreements required when addressing needed out-of-state capacity.

1.4 New Jersey's Approach to Capacity Assurance

In order to manage the data which is necessary to analyze New Jersey's hazardous waste management system for the CAP, and in order to provide consistent and reliable updates to the CAP (CAP reporting is biennial), the State of New Jersey opted to utilize a software planning system. Because the intent of the CAP is so similar to that of the HWFSC's Siting Plan and, because the bulk of our efforts have been based primarily upon the work accomplished by the HWFSC in developing their Siting Plan, the State of New Jersey has opted to expand the New Jersey Facility Planning Software System so that it will be able to generate the information required by the USEPA Guidance Document.

The following chapters constitute the data, projections and analysis required by the Guidance Document. The State of New Jersey fully believes that, based upon this plan, this state is in compliance with the requirements of the Guidance Document and Section 104(c)(9) of CERCLA.

SAT/abl

Chapter 2

Executive Summary

2. Executive Summary

2.1 Objective

The USEPA guidance for Capacity Assurance planning requires each state to demonstrate an understanding of its hazardous waste generation and management capacity in the baseyear and to make projections for 20 years based on that generation; to describe its waste minimization program and to document any projected waste reduction; to describe its hazardous waste facility siting efforts; and to develop interstate or regional agreements, if necessary. Interstate or regional agreements are necessary if a shortfall of capacity exists in any management category during the 20 year projection span. A synopsis of the results of each of these efforts follows:

Because commercial facilities are the only facilities which may accept waste for treatment or disposal from off-site (from other facilities not under the same ownership), this summary will be limited in scope to commercial facilities. On-site facilities, which only treat or dispose of wastes generated on site, and captive facilities which only treat or dispose of intra-company wastes are discussed in the following chapters. It is also important to note that on-site and captive facilities will not reduce the demand for commercial facilities because, by law, they cannot accept off-site wastes, regardless of whether or not they have excess capacity. Conversely, if an on-site facility ceases its waste management practices, yet still generates waste, this could result in an increase in commercial facility demand.

2.2 Reporting the Status of Generation, Imports, Exports and Management Capacity - Baseyear, 1987 (Chapter 3)

Each state is required by the Guidance Document to complete a series of tables which describe the current status of generation, imports, exports, and management capacity in this state (Chapter 3). New Jersey's tables were produced by the New Jersey Facilities Software Planning System and are based primarily upon 1987 manifest data, 1987 TSD Annual Reports, New Jersey's Waste Minimization Report data, USEPA's 1986 Treatment, Storage, Disposal and Recycling (TSDR) Survey (non-confidential version), New Jersey's Permit Application Tracking System (PATS), and telephone interviews with the facilities.

From Tables 3-2 and 3-3 several observations can be made: New Jersey imported slightly more federal Resource Conservation and Recovery Act (RCRA) wastes than were exported in 1987 (226,022 tons vs 205,811 tons); aqueous treatment is the predominant management method for imported waste followed by solvents recovery and incineration; and land disposal is the predominant management method for exported wastes, followed by energy recovery.

Table 3-5(b) depicts the utilization of commercial hazardous waste capacity by federal hazardous (RCRA), other hazardous (state regulated) and non-hazardous wastes. In 1987, nearly all of New Jersey's commercial incineration and energy recovery capacity was utilized. Because New Jersey currently does not, and did not in 1987, have any commercial land disposal facilities, all wastes amenable to land disposal (with the exception of landfillables generated at facilities which had on-site landfills) were exported.

2.3 New Jersey's Pollution Prevention Activities

Each state is required by the Guidance Document to supply information regarding it's Waste Minimization (or Pollution Prevention) Program. Additionally, states that analyze and project that waste minimization will reduce generation, and thus will assist in assuring the availability of adequate management capacity for generated wastes, should supply documentation on ongoing and planned waste minimization efforts. These states should describe the overall strategy of their programs, and how they have accounted for waste minimization in their waste generation projections. Detailed information on New Jersey's pollution prevention program may be found in Chapter 4.

The State of New Jersey has incorporated the effects of waste minimization into its projections. New Jersey is one of very few states which collects information on the waste minimization and source reduction activities of its generators and has collected data since 1985. This data has provided historical trends which have been used to project future potential waste minimization.

The results of New Jersey's analysis shows that it is reasonable to show that projected generation of hazardous waste will be affected by waste minimization. However, it is also important to note that other factors, such as economic factors, and regulatory changes may expand the regulated universe of wastes and this may continue to affect future generation of certain waste streams as a growth factor. After all factors are considered, the projection analyses show that for many waste streams, the rate of increase is decreasing.

The State of New Jersey would also like to stress, in this document, that it is not possible to reduce waste generation to zero for all waste streams. This is primarily due to technological limitations, future regulatory amendments and cleanups of contaminated sites. The concept of percentage waste reduction "goals" are very misleading. If a state or a program sets a goal of five percent reduction, it does not mean that generation will be reduced five percent per year until the waste generated is zero. The scenario of a decrease in the amount of increase appears to be more accurate at this time. However, this state will be reevaluating the effects of waste minimization, as more data becomes available for future CAP submittals.

2.4 Projecting Hazardous Waste Generation and the Demand for Management Capacity

The Guidance Document requires that states should project waste generation within their borders in 1989, 1995 and 2009 based upon economic factors and the anticipated effects of regulatory changes. After future generation of wastes are projected based upon the aforementioned factors, the projected quantities are reduced in accordance with the waste minimization factors developed in Chapter 4.

To forecast changes in hazardous waste generation based upon economic growth or decline, the following sources were used: 7 years of manifest data (1981-1987); 5 year growth projections (US Industrial Outlook) and; 20 year economic projections (NJ Department of Labor). From these sources, economic projection factors have been developed for waste streams based upon two and three digit Standard Industrial Classification Codes (SIC) which classify the generator. A description of the specific factors and how they are applied can be found in Chapter 5.

The State of New Jersey also projected the effects of regulatory developments upon future generation. The following regulations were considered: land disposal restrictions, smelting, Toxicity Characteristic Leaching Procedure (TCLP), industrial effluent regulations, mining, petroleum, wood preserving and NJ's Environmental Cleanup Responsibility Act (ECRA). Because each of these regulations impact generation and demand differently in different years because of varying effective dates, it is not meaningful to give an estimated yearly change in generation due to regulatory factors.

Of all of the factors that were studied, however, the land disposal restrictions had the most dramatic impact. Because the land disposal restrictions shift waste streams from land disposal to other treatment technologies, specifically incineration, an increase in future demand for treatment technologies was observed.

While one would expect these restrictions to dramatically reduce the quantities of waste destined for land disposal, New Jersey's analysis did not show this to be entirely true. This is due, in part, to the fact that the land disposal restrictions require that many wastes which are still subject to land disposal, be stabilized before placement in the facility. Stabilizer adds 1.5 times to the original volume of waste destined for land disposal. A more detailed discussion of these and other effects are discussed in Chapter 5.

Overall, the results of New Jersey's analysis, after the effects of waste minimization, project that this state will have significant shortfalls for metals recovery, incineration and land disposal in one or more of the projection years. The State of New Jersey, as part of this process, plans to reduce these shortfalls through a combination of efforts: facility siting, regional agreements and interregional agreements. These efforts are summarized in the following section.

2.5 Documenting State Plans for Increasing In-State Capacity and Interstate and Regional Agreement

Chapter 5 of the CAP summarizes the projected need for hazardous waste management capacity over the next 20 years, after taking into account all projection factors (including waste minimization).The Guidance Document requires states that show a shortfall of management capacity for the projection years to describe their procedures for facility siting, permitting and expansion in this chapter (Chapter 6). These states should commit to creating and permitting specific quantities and types of additional capacity through either new or expanded facilities in the state; or states may be able to obtain agreement with other states to manage these additional waste quantities.

The State of New Jersey has dealt with this requirement through a combination of efforts. First, as stated in the Introduction and discussed further in Chapter 6, New Jersey has a Siting Law and a Siting Commission to implement its requirements. Based on the assessments of future need for hazardous waste capacity, the Commission in its 1985 Plan, determined that the State of New Jersey needed additional incinerator and land disposal facilities. (It is interesting to note that the CAP process has reaffirmed that conclusion.) Since that determination was made, the Commission has been actively searching for potential sites in New Jersey, which would meet this state's stringent siting criteria, to be used as potential facility sites. As of the writing of this document, two potential sites have been designated as potential sites for a 40,000 ton per year incinerator. Additionally, an expansion of an existing wastewater treatment facility adding an incinerator will provide the State of New Jersey with an additional 17,500 tons of commercial incinerator capacity. These potential facilities (57,500 tons) have been added into the available capacity in 1995.

The State of New Jersey is also participating in a regional approach to capacity assurance planning. This effort is described more fully in Appendix 4, however, the basic tenets of this effort is as follows: Existing capacity within the northeast region is "set aside" for use by only the northeast states. This sort of approach is beneficial to all participating states because it does not require each state to attempt to develop in-state capacity to meet all of the states' demand. The northeast region has evaluated the commercial capacity supply and associated commercial capacity demand for the 20 year projection span. All facilities in the northeast which are existing, potential facilities which have been formally sited, and facilities which are planned, have been included in the projected regional capacity supply. It is important to note here that the State of New York had been participating in the regional approach until September 29, 1989. Under that scenario, the region had only a short-term (1989) incineration capacity shortfall. However, after New York withdrew from the region, long-term sludge treatment and land disposal shortfalls resulted in addition to the short-term incineration shortfall.

With only three weeks remaining until the statutory deadline for the CAP submittals, the remaining 13 states have contacted all of the regions in the nation to attempt to alleviate our shortfalls through interregional agreement and; agreed to form a regional land disposal task force which will attempt to develop an equitable distribution of land disposal capacity in the future. A more detailed account of the efforts of the region is described in Chapter 5 and Appendix 4.

Chapter 3

Reporting the Status of Generation, Imports, Exports, and Management Capacity

3. Reporting the Status of Generation, Imports, Exports, and Management Capacity

3.1 Overview

The purpose of this chapter is to demonstrate New Jersey's understanding of its hazardous waste generation, treatment and disposal system. The key data, from which further analysis and projections have been developed, are: the type and quantity of hazardous waste generated within the state from continual industrial processes, as well as one-time events such as, for example, CERCLA, ECRA and RCRA cleanups; the type and quantity of hazardous waste received from other states and; the facilities available within the state to treat, destroy, or securely dispose of hazardous waste and other wastes which utilize such capacity.

3.2 Reportable Waste Streams

In general, wastes which are represented in this chapter include wastes generated from Superfund and other corrective action authorities and treatment, storage, disposal and recycling in regulated units. Exempt process waste streams which are not represented include those resulting from: on-site New Jersey Pollutant Discharge Elimination System (NJPDES) processes; on-site treatment and discharge to publicly owned treatment works (POTW's) with and without treatment; and on-site recycling. Additional information regarding data availability and New Jersey's efforts to obtain information on the exempt process waste streams may be found in Appendix I.

3.3 Data Sources

The primary database used in the development of New Jersey's CAP is NJDEP's hazardous waste manifest database. Since 1978, New Jersey has required that all generators (unless exempted by N.J.A.C. 7:26-8) accompany their waste with a multi-part hazardous waste manifest which is used to track hazardous waste from the point of generation to ultimate disposal. Information included in the manifest are: type of waste, quantity, means of transport and treatment, and the names and EPA identification numbers of the generator, the transporter and the recipient of the waste. The data obtained from the manifest system was converted to the SARA waste codes by the New Jersey Facility Planning Software System. Other sources of information for the CAP include TSD and generator Annual Reports to describe on-site wastes and to confirm manifest data, 1987 waste minimization reports to confirm on-site data and to identify on-site recycling (see Appendix I), USEPA's TSDR survey data to assist in the development of a capacity database and interviews with facility and NJDEP personnel.

Manifested quantities reflect the amount of hazardous waste that generators sent off-site for treatment, storage or disposal and indicate New Jersey generators' current demand for commercial facilities. These figures do not represent waste generated and managed on-site at non-commercial, company-owned facilities. This data was obtained from the generator and TSD annual reports. The database was converted to the common units of tons by means of the following multipliers:

Gallons:	8.34/2000
Cubic Yards:	1684/2000
Liters:	2.203/2000
Kilograms:	2.204/2000
Pounds:	1 /2000

3.4 Methodology

In the preparation of this CAP, it was necessary to convert from the handling codes and RCRA and State waste codes (used on manifests, annual reports, and New Jersey's Waste Minimization reports) to the SARA waste management categories and the SARA waste types described in the Guidance Document. This section will describe the basic methodologies for these conversions.

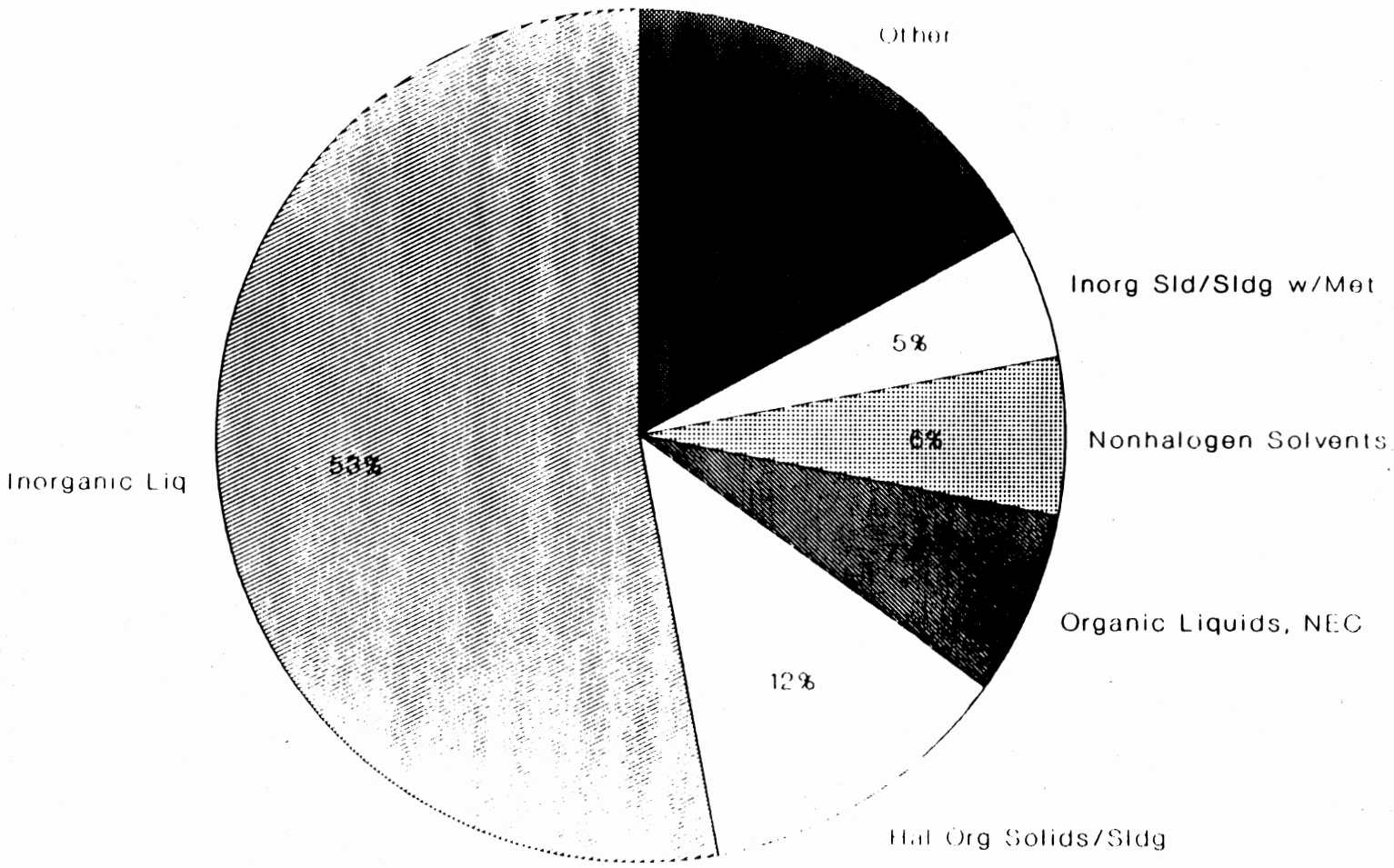
First, SARA waste management codes were assigned to all records in the 1987 manifest file and to records of waste treated on-site in the 1987 TSD Annual Report. In some instances, management category assignments could be based solely upon the receiving facility in cases where a facility had a single type of treatment process. More frequently, assignments were made with the use of additional information, such as the handling codes. Once a particular combination of data (e.g., generator X, TSDY, handling method Z) is assigned a management category, the same category was assigned whenever identical sets of data occurred in the database.

Next, SARA waste type codes were assigned to all records with assigned SARA management codes. Similarly, some RCRA or state waste codes could be translated directed into SARA waste types (e.g. K062 = inorganic liquid with metals). However, in other cases, especially when characteristic RCRA waste codes (D001, D002, etc.) were encountered, additional information, such as handling method or generator identity, was required to make a waste type assignment. Again, SARA waste types were assigned automatically whenever identical sets of data occurred in the database.

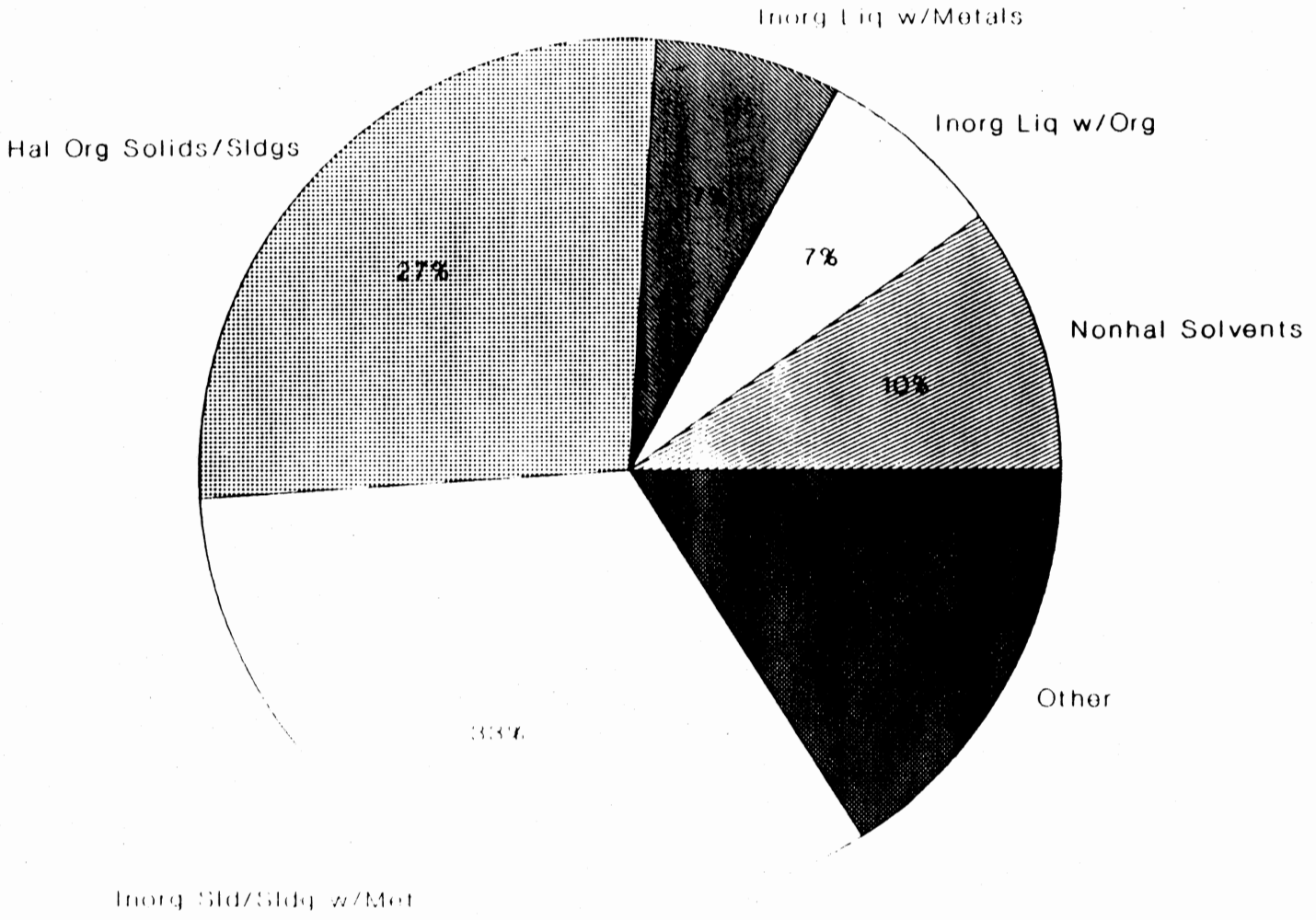
3.5 Summary of In-State Generation by Waste Type in Baseyear: Table 3-1

Table 3-1 summarizes total in-state generation of one-time and recurrent streams of federal hazardous waste. Figures 3-1 and 3-2 graphically depict this relationship. Recurrent wastes include both

% OF RECURRENT GENERATION IN 1987
FIGURE 3.1



% OF ONE TIME GENERATION IN 1987
FIGURE 3.2



primary and secondary streams attributable to on-going industrial activity. One-time wastes include those that result from isolated events such as equipment cleaning or decommissioning, site cleanup, or disposal of off-specification products. However, as previously stated, the State of New Jersey did not have access to enough information to include quantities of wastes from exempt process waste streams in this table as was required by the Guidance Document. Additionally this table does not include 52 million tons of aqueous wastes treated on-site under the New Jersey Pollutant Discharge Elimination System (NJPDES) because these wastes do not utilized RCRA Subtitle C, hazardous waste capacity.

In the preparation of Table 3-1, recurrent versus one-time distinctions were made by analyzing four years of data, by reviewing the NJDEP's, Division of Hazardous Waste Management's (DHWM)Site Status Reports, through discussions with NJDEP personnel, identification of wastes manifested under the NJDEP identification number, and waste from sites which were identified as being solely cleanups. Finally, waste shipments which were more than three standard deviations greater than the mean shipment size were considered to be one time wastes.

The Guidance Document requires that states only include the generation of federal RCRA wastes in Table 3-1. This does not include the entire universe of regulated hazardous wastes in the state because New Jersey also has defined its own hazardous wastes (the X-series and C-series). New Jersey regulated wastes account for 22% to 31% of New Jersey manifested wastes. This table also does not include other non-hazardous wastes which utilize hazardous waste capacity. For instance, many generators which are concerned about the potential impacts of disposing their wastes choose to dispose of their wastes in Subtitle C facilities, which have stringent environmental controls. Therefore, although other wastes actually utilize hazardous waste capacity, they are not represented in this table. These wastes are evaluated in Table 3-5 to the extent that they have utilized hazardous waste capacity.

3.6 Imports and Exports of Manifested Wastes To and From New Jersey

Tables 3-2 and 3-3 illustrate the quantities of federal RCRA hazardous wastes which were either manifested to or from the State of New Jersey in 1987. Additionally, these tables further assign these import and export quantities to the SARA Management Categories defined in Appendix III. The Guidance Document requires that the data contained in Tables 3-2 and 3-3 reasonably match the corresponding data in Tables 3-2 and 3-3 of other states' plans. New Jersey has spent a considerable amount of time ensuring that our data agrees reasonably with other states. Appendix II summarizes these efforts.

It is not however, possible to obtain exact matches with other states on the import/export flows described in Tables 3-2 and 3-3. There are many contributing reasons for potential discrepancies. Some of the significant reasons are as follows.

- o New Jersey opted to base their CAP on manifest data whereas other states may have used annual or biennial report data.
- o In accordance with the Guidance Document, New Jersey has not included state and other wastes, however, some state have opted to include their state regulated wastes.
- o Because New Jersey regulates small quantity generators (SQG) more stringently than the federal government (e.g. a NJ SQG generates less than 100 kg per month, whereas a federally defined SQG generates less than 1000 kg per month), New Jersey's database usually contains data which is not contained in other states' database.
- o The State of New Jersey has removed rejected shipments and transshipments from these tables.

As depicted in Tables 3-2 and 3-3, New Jersey was a net importer of federal hazardous wastes in 1987 with approximately 226,022 tons of hazardous waste being imported and 205,811 tons being exported. When one considers federal and state hazardous waste, the State of New Jersey becomes a net exporter, with 397,663 tons exported from New Jersey and 307,436 tons imported from out of state.

As can be seen from Table 3-2, a significant portion of the federal hazardous wastes which are manifested from the State of New Jersey to out-of-state facilities are destined for landfills. Thirty-four percent of all federal hazardous wastes which were exported in 1987 were destined for landfills (see figure 3-3). The four states which accepted the bulk of these wastes were Indiana, Michigan, New York and Ohio.

This scenario is expected to change dramatically over the 20-year projection period. Such changes will be attributable primarily to the land disposal restrictions and the fact that many landfills which existed in 1987 have either reached or are about to reach design capacity. Both of these issues will be discussed in Chapter 5.

The largest receiving states for federal hazardous wastes generated in New Jersey are Pennsylvania, Ohio, New York, Indiana and Michigan, respectively. Of these states, the only which does not have hazardous waste landfill capacity is Pennsylvania. As depicted in Table 3-2, the bulk of the hazardous waste which is sent to Pennsylvania is managed by an energy recovery facility, Keystone Portland Cement. The following discussion of receiving facilities is based on the amounts of federal RCRA and state and other wastes which were exported in 1987. Thus the amounts discussed will be greater than those presented in Table 3-2.

Keystone Portland Cement, located just north of Bethlehem. Pennsylvania, is the single largest out-of-state hazardous waste receiving facility. In 1987, its receipts exceeded those of Waste Conversion, Inc., another Pennsylvania facility which had previously been the largest. It received 33,693 tons of New Jersey generated hazardous wastes in 1987. This facility burns hazardous combustible materials as auxiliary fuels for its two cement kilns at its cement production facilities. Other predominant receiving facilities are described below.

Waste Conversion, Inc., is primarily an aqueous treatment facility but also does some oil recovery and stabilization and solidification. It accepts a wide range of wastes which are mostly in liquid or sludge form. In 1987 Waste Conversion accepted 32,835 tons of New Jersey waste at its facilities which are located in Larsdale, 30 miles north of Philadelphia.

Wayne Disposal, #2, in Belleville, Michigan, is a landfill facility which received 29,587 tons in 1987.

Fondessy Enterprises, Inc. remains the fourth largest out-of-state receiving facility. It is a landfill located in Oregon, Ohio. Processes include stabilization, land treatment and landfill. Fondessy accepted 22,968 tons of New Jersey wastes in 1987.

SCA Chemical Services, Inc. of New York operates a secure landfill and aqueous treatment facility in Model City. This facility accepted 18,874 tons of New Jersey wastes in 1987. Its capabilities include a wide range of aqueous treatment processes.

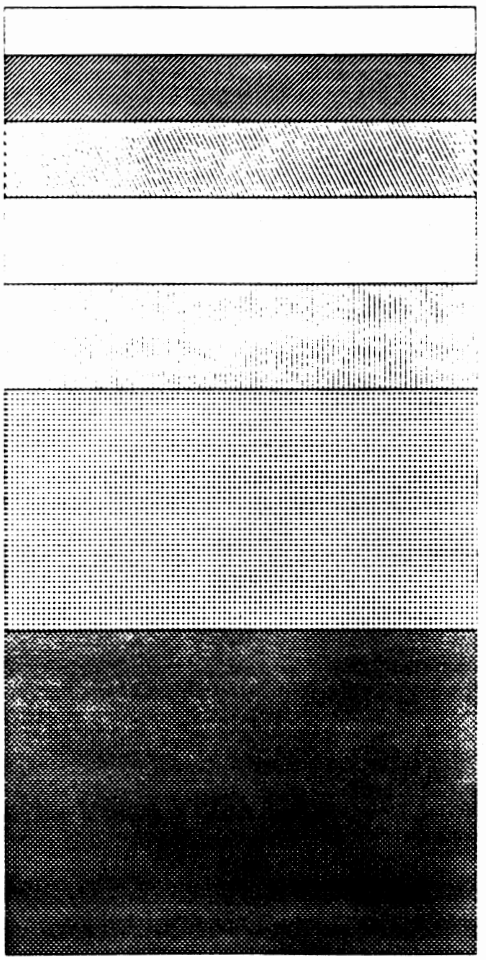
Chemical Waste Management of Indiana was ranked sixth in receipts of New Jersey wastes. On-site processes include landfill and storage. In 1987 it received 13,922 tons of New Jersey waste at its operations in Fort Wayne.

New Jersey Zinc of Palmerton, Pennsylvania, received 13,187 tons of New Jersey waste in 1987. The majority of the wastes it accepts are K061 (emission control dust or sludge from the electric furnace production of steel).

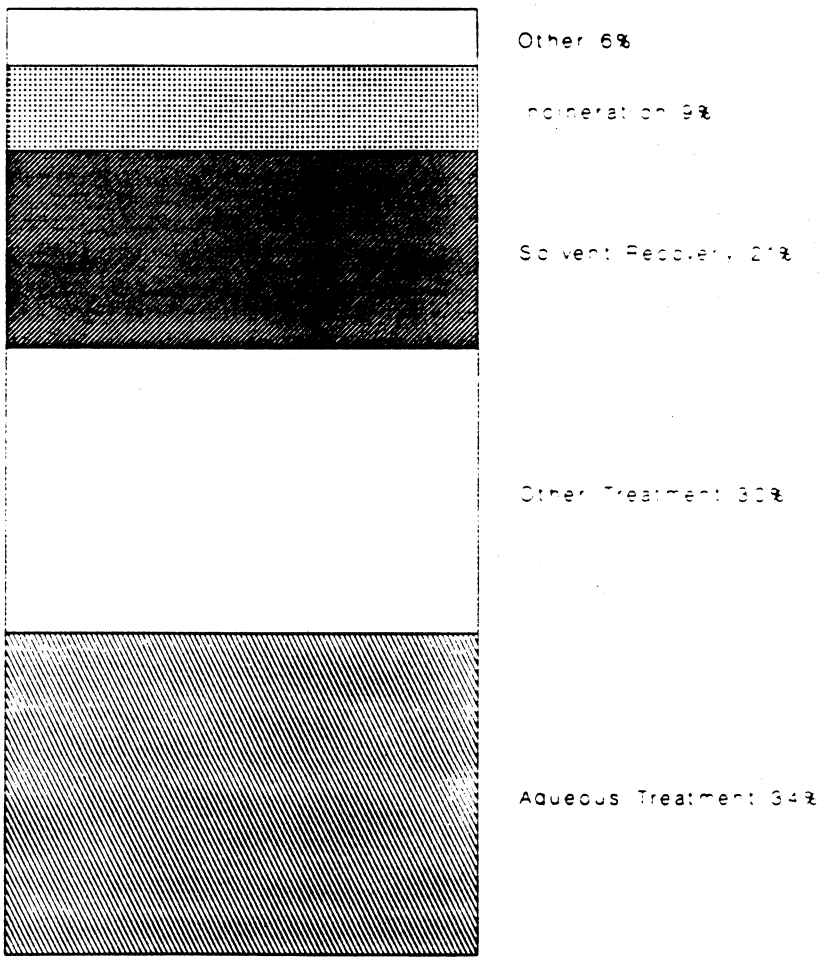
Chem-Clear Inc. operates aqueous treatment facilities located in Chester, Pennsylvania and Baltimore, Maryland. Chem-Clear also does a small amount of oil recovery and accepts bulk or containerized liquids or solids. In 1987 the Baltimore facility treated 1,333 tons and the Chester facility treated 11,836 tons of New Jersey wastes.

Table 3-3 shows the manifested waste received by New Jersey's 28 operating commercial facilities (see Section 3.10 of this chapter). Approximately 40 percent (12 of 28) of these facilities received more imported wastes than New Jersey wastes in 1987. This is a slightly higher ratio than during the period from 1981-1983. Some of these

% OF RCRA WASTES EXPORTED IN 1987
FIGURE 3.3



% OF RCRA WASTES IMPORTED IN 1987
FIGURE 3.4



facilities are very small, receiving less than 500 tons of wastes annually. But most, 9 of 12, receive greater than 1,000 tons per year. These larger importer companies are: Chem Waste Management, C.P. Chemical, C.R. Warner, E.I. DuPont, Flowen Oil, Petroleum Recycling, Rollins, Safety Kleen and Solvents Recovery Systems.

As shown in Table 3-3, the vast majority of hazardous wastes which are manifested to New Jersey go to DuPont, Deepwater for aqueous treatment (see figure 3-4). The second largest management category for imported wastes is other treatment. This category encompasses several New Jersey facilities which perform operations such as neutralization, settling/clarification, etc. The third most predominant method for hazardous wastes manifested to New Jersey is solvent recovery. The large solvent facilities (Marisol, Solvent Recovery Service, Safety Kleen) received large amounts of wastes from generators in other states. New York and Pennsylvania are the primary sources of these solvents in spite of the fact that New York has excess solvent recovery capacity and there were solvent recovery facilities in Connecticut and Maryland in 1987.

The next highest management method for imported hazardous wastes is incineration. Rollins imported more waste from out-of-state generators than from New Jersey generators. This can be attributed to the fact that Rollins' service is not duplicated elsewhere in the Northeast.

3.7 Waste Managed In-State by Waste Type and SARA Management Category

Tables 3-4, 3-4(a), 3-4(b), and 3-4(c) provide the linkage between waste types and SARA management categories. The data contained in these tables include not only New Jersey generated federal RCRA wastes, but also imported federal RCRA wastes.

Table 3-4 shows that, when commercial, captive and on-site facilities are considered, the bulk of the wastes managed by New Jersey facilities are managed under the SARA category "other treatment". This large number (521,139 tons) can be attributed primarily to neutralization processes at on-site facilities.

The second largest New Jersey management method is aqueous treatment (134,370 tons). This quantity can be attributed almost exclusively to the aqueous treatment processes at the commercial DuPont, Chambers Works facility (105,545 tons).

The third largest management method in New Jersey is landfill (87,117 tons). This is attributed almost entirely to the on-site landfill at the DuPont Chambers Works facility. It is important to note that this landfill is primarily on-site, so, wastes disposed of in this landfill are generally residuals from other on-site processes at the Chambers Works plant.

Finally, the fourth largest management method is solvents recovery. This is attributable to the commercial solvents recovery facilities in the state.

One would expect that Table 3-4 would relate to the preceding tables as follows:

Table 3-4 = (Table (3-1) - (Table 3-2) + (Table 3-3)
or

All Federal RCRA waste managed in-state	= (Total in-state generation of federal RCRA wastes)	- (Exports of federal RCRA waste)	+ (Imports of federal RCRA waste)	

This does not hold true however, because, as stated above, Tables 3-2 and 3-3 do not include transshipments or rejected shipments whereas Table 3-1 does. Therefore, when Tables 3-1, 3-2 and 3-3 are combined there is a difference of 66,307 tons which is primarily due to transshipped wastes (32,440 tons) and waste exported to storage facilities (603 tons). The remaining wastes which will make the equation true (30,264 tons) were identified as wastes which were sent to NJ commercial facilities that were stored rather than treated, or exports to foreign countries (see Appendix II).

3.8 Commercial Facilities Operating in New Jersey

The facilities operating in New Jersey collectively offer a wide range of treatment options. Nevertheless, almost all of the facilities are either just storage/transfer operations or offer only a specialized service appropriate for a narrow range of waste types. For CAP planning purposes, storage and transfer facilities may not be used to assure capacity since these facilities only offer temporary management of wastes and not final disposition. Therefore, it is important to note that storage and transfer facility capacities are not analyzed in the tables.

Fourteen facilities currently operate resource recovery facilities - ten of which are oil recovery/fuel blending facilities, four facilities are involved in solvent recovery, and one facility recovers metals. Three facilities treat aqueous wastes, three facilities only transfer or rebatch wastes, and one incinerates wastes. At present, no commercial land disposal facilities are in operation in New Jersey.

Table 3-5 presents an estimate of the capacity, in terms of tons per year, of the facilities in operation in New Jersey. Most of the information on commercial capacities reflects capacities quoted by facility personnel, confirmed, where possible, with data in NJ DEP files. The following hierarchy of sources was used to describe New Jersey's capacity: ERM Survey data, TSDR non-confidential data, Annual Report data, NJDEP's PETS database, and manifest data to confirm the analysis.

3.9 Treatment Residuals

A survey was conducted by the consultant of all the commercial facilities in operation in the State of New Jersey. The facilities were asked several questions about residual wastes left after the treatment. The facilities were asked to report on what types of residuals they produced (aqueous, organic liquid, other liquid, organic solid/sludge, inorganic solid/sludge) and to estimate the quantities of residuals as a percent of treated waste and the percent of residuals that are non-hazardous. Flowen Oil Company, for instance, produces both aqueous and organic solid/sludge residuals as a result of treatment. The residuals account for 0.25% of the total treated waste. Of that 0.25%, 30% are non-hazardous. There was difficulty in obtaining consistent information from various personnel who were interviewed at the facilities (see Table 3-D-1).

To provide another estimate for comparison, the quantities of waste which were manifested from treatment facilities and which had been identified as treatment residuals were divided by the quantities of waste received by the facilities during that year and a percentage derived. There are two major difficulties in making this estimate: wastes or treatment residuals can be held over from one year to the next and result in skewed figures and secondly, distinguishing between residuals and transshipments is routinely difficult.

3.10 Planned Changes in Capacity

Table 3-D-2 represents the planned changes in capacity as projected by the surveyed facilities. The facilities were asked what changes in capacity were planned for the next 3 years, 5 years, and 20 years for the storage, treatment, and disposal capacity. Most of the planned increases are projected to take place in the next three years. The facilities were also asked for projected closure dates if applicable. One facility, Spectraserv, Inc., estimated that it would close within one year.

3.11 Description of New Jersey Commercial Facilities

Advanced Environmental Technology Corporation (AETC)
Goldmine Road
Flanders, New Jersey 07836

AETC specializes in transfer and storage of a wide range of chemicals in small quantities such as laboratory chemicals or small quantity production chemicals. The types of wastes accepted include all D, F, K, U and P RCRA code wastes as well as waste oils with X721 through X728 New Jersey waste codes. Much of AETC's work consists of consulting on hazardous waste handling procedures with the remainder being containerized and removing waste to authorized treatment facilities.

ESTIMATED RESIDUALS FROM COMMERCIAL FACILITIES
TABLE 3-D.1

Company	Residuals as % of Treated Waste (1)	Residuals as % of Treated Waste (2)
B&L Oil Corp	.05 to 2.50	2
C.P. Chemical	2	8
C.R. Warner	1.4	2
Casie-Resultz	50	11
Chem Waste Mgmt	5	3
Cycle Chem	15	8
Dupont, Deepwater	0.14	0.50
Flowen Oil Co	0.25	0.80
L&L Oil Services	2	0.90
Lionetti Oil	-	2
Marisol, Inc	30	82
Petroleum Recycling	25 to 50	-
PITTCo	2 to 30	13
Rollins	8	10
Safety Kleen	1	86
SRSNJ/Safety Kleen	10	66
Spectraserv, Inc	38	28
Standard Tank	4.8	-

(1) Estimate was made by the facility
(2) Estimate is a rough estimate from the Manifest data

In the past, the company had handled approximately 500 drums (55 gallon drums or smaller) per week but has increased its throughput capacity to 2,300 per week. The facility plans to quadruple its storage capacity within the next three years.

Atlas Associates, Inc.
109 Fifth Avenue
Paterson, New Jersey 07524

Atlas Associates, Inc. is a storage and transfer facility which handles containerized wastes (55 gallon drums or smaller). The types of wastes that the facility receives include all D, F, K, U, P, X725, X726, and X850 Lab Packs. Storage capacity at the facility is 33,000 gallons. There are no planned changes in the near future.

B&L Corporation
472 Frelinghuysen Avenue
Newark, New Jersey 07114

B&L produces an industrial grade fuel oil from waste lubricating, fuel and hydraulic oils with waste codes X721 through X727. The company processes from 10,000 to 14,000 gallons per day of waste oils, with 14,000 gallons per day being the maximum design capacity.

Processes include sedimentation, heat treatment and addition of caustic as a cleaning and precipitating agent. The treatment processes generate 20,000 gallons per year of oil sludges and 80,000 gallons per year of aqueous liquids both of which are manifested off-site. Total tank storage volume at the facility is 200,300 gallons which is expected to increase of 42,000 gallons within the next three years.

The sludges generated by the treatment processes are solidified with coal dust, drummed and manifested to an out-of-state landfill.

Casie-Rezultz
(formerly Rezultz, Inc.)
North Mill Road
Vineland, New Jersey 08360

Casie-Rezultz is a storage and transfer facility of spill response, automobile, fuel and transformer waste oils which include X721 through X727 waste code material. The total storage capacity at the facility is 202,000 gallons which includes waste oil tanks, process water tanks and one separator tank.

Treatment includes heating and gravity separation to yield an oily material which is blended and subsequently sold. Water that accumulates during the gravity separation process is shipped to in-state and out-of-state facilities for treatment. Sludges that accumulate during gravity separation are solidified by adding fly ash or coal dust and transported out-of-state to approved landfills.

PLANNED CHANGES IN CAPACITY OF COMM. FACILITIES
TABLE 3-D.2

Company	Planned Changes in Storage Capacity 2 yr	8 yr	20 yr	Planned Changes in Trtment Capacity 2 yr	8 yr	20 yr
AETC	300%					
B&L Oil	21%			16%		
Chem Waste	15%					
Flowen Oil Co		100%				200%
Safety Kleen, Clayton	30%			30%		

The facility plans to install a filtration system which will enhance water removal from the waste oils. The facility has applied for a NJPDES permit to discharge the water that will be generated during the filtration process.

Chemical Waste Management
(formerly Earthline Company, Division of SCA Services)
100 Lister Avenue
Newark, New Jersey 07105

This facility operates an integrated hazardous waste treatment facility which accepts a wide range of waste material including oil spill cleanup waste, waste fuel and lubricating oils, cyanide wastes, heavy metals wastes, organic aqueous wastes, unchlorinated and chlorinated solvents, acids and alkalis. Storage capacity at the facility is 769,500 gallons which is by tank and drums. The reprocessing consists of sedimentation, neutralization, oxidation and reduction and dewatering. The facility processes an average of 13,000 gallons per day of waste material and is capable of treating up to 30,000 gallons per day. The treatment processes generate 190 tons per month of organic sludges which are manifested to a landfill in Pennsylvania. The facility plans to increase its storage capacity to 885,000 gallons within three years.

C.P. Chemicals, Inc.
Arbor Street
Sewaren, New Jersey 07077

C.P. Chemicals is a manufacturer of inorganic metallic salts which are used primarily by the plating industry. The facility recycles spent plating wastes which include spent cupric chloride, solutions, spent sulfacts, copper sludges, spent nickel sulfamates and nickel sludge. Storage capacity is 22,000 gallons as containerized wastes and 64,000 as bulk waste.

Reprocessing consists of chemical treatment, filtration and metals recovery. The treatment capacity is 32,000 gallons per week which generates approximately 640 gallons per week of inorganic sludges which are manifested off-site.

C.R. Warner, Inc.
East Lake Road, PO Box 134
Woodstown, New Jersey 08098

C.R. Warner, Inc. is a reprocessor of all types of waste oils including lubrication, fuel, quench and metal working oils with waste codes X721 through X727.

The storage capacity at the facility is 250,000 gallons which is entirely in tanks. Reprocessing includes heat treatment and filtration with a throughput of 13,700 gallons per day. Treatment residuals include wastewater and organic sludges of which 70,000 gallons per year and 495 gallons per year respectively are generated. The wastewater is shipped to a treatment facility in Pennsylvania and the sludges are drummed and shipped to a sludge treatment facility also located in Pennsylvania.

Cycle Chemical Company
(formerly Perk Chemical Company, Inc.)
217 South First Street
Elizabeth, New Jersey 07206

Cycle Chemical Company is a storage and transfer facility as well as a chlorinated solvent reclamation facility. The facility accepts oil, emulsions, chlorinated solvents, non-chlorinated solvents, acid and alkali solution. Storage consists of both bulk and containerized materials with a storage capacity of 249,500 gallons.

Chlorinated solvent reclamation is achieved by distillation which recovers perchlorethylene, trichloethane, trichloethylene, and methylene chloride. Treatment capacity is 3,000 gallons per day. Treatment residuals are distillation bottoms of organic sludge of which 450 gallons per day are generated. Still bottoms are shipped to a treatment facility in New York.

Detrex Chemical Industries, Inc., Gold Shield Division
835 Industrial Highway, Unit No. 1
Cinnaminson, New Jersey 08077

Detrex is a storage and transfer facility of chlorinated solvents and fluorocarbons. The solvents are transferred to Detrex's North Carolina Facility for solvent reclamation. Storage in drums is 16,500 gallons and storage in tanks is 5,500 gallons totalling 24,000 gallons storage capacity.

E.I. duPont de Nemours and Company
Chambers Works
Carneys Point Township
Deepwater, New Jersey 08023

DuPont operates a 35,000,000 gallons per day wastewater treatment plant at its Chambers Works in Deepwater and utilizes a small percentage of this capacity to treat aqueous hazardous waste on a commercial basis. The treatment processes include neutralization flocculation, sedimentation and activated sludge treatment system using suspended activation carbon with a final clarification step. The wastewater treatment plant treats 545,000 tons of liquid hazardous waste that it

accepts on a commercial basis. Primary settled solids are filter pressed and placed in a secure landfill on-site. Solids from the activated sludge system are incinerated in a multiple hearth incinerator with heat recovery. A new incinerator is proposed as well as expansion to the existing landfill which accepts dewatered primary sludge and incinerator ash. The activated carbon regenerated from the incineration process is recovered from the ash. The facility accepts bulk liquid shipments only.

Flowen Oil, Inc.
1800 Carmen Street
Camden, New Jersey 08105

Flowen Oil reprocesses and blends an average of 8,000 gallons per day of waste lubricating oils to produce a commercial-grade fuel oil used in industrial boilers. The maximum treatment capacity is 16,000 gallons per day. The facility separates non-recoverable impurities by the following processes: sedimentation, heating, pH adjustment, chemical treatment by surface active demulsifier addition, filtration and contrifugation. The final product is tested to ensure sufficient quality for use as a boiler fuel.

The facility's storage capacity is 400,000 gallons which is expected to double within five years. Impurities consist mostly of solids and water, and amount to approximately 0.25 percent of the accepted waste oils. These residuals are solidified, place in roll-off containers, and transported to out-of-state landfills.

L&L Oil Service
740 Lloyd Road
Aberdeen, New Jersey 07747

L&L is a transfer and storage facility handling waste fuel oils, lubricating oils and hydraulic oils, with waste codes X721 through X728. The storage capacity is 100,000 gallons. The facility heats the oil to vaporize some water and lower the viscosity to increase ease of handling. Some gravity settling occurs when the heated oil is stored in tanks awaiting transfer to a large oil recovery facility. L&L has the capacity to treat 3,000 gallons per day and is currently operating at that rate. Sludges generated by the treatment processes are aqueous in nature and amount to 60 gallons per day. These sludges are shipped to Flowen Oil, Inc. for treatment.

Lionetti Waste Oil Service, Inc.
RD#1, Box 5A
Old Bridge, New Jersey 08857

This facility accepts only waste automobile lubricating which is collected from service stations and automobile agencies. The facility accepts an average of 9,000,000 gallons of oil per year. Besides storage and transfer, the facility treats waste oils by settling, heating and blending. Lionetti has the potential capacity to handle 3,000 gallons per day of waste oil.

Marisol, Inc.
125 Factory Lane
Middlesex, New Jersey 08846

Marisol is a solvent recovery facility with a small fuel blending operation. The facility receives chlorinated and non-chlorinated solvents, flammable and non-flammable liquids, paints, pigment residues, oil and emulsion. The total amount of these substances received is approximately 5,000,000 gallons per year. Storage is in both tanks and drums totalling 1.3 million gallons. The solvent reclamation operation includes three pot stills, one with a fractioning column. The treatment process throughput is 24,000 gallons per day which is the maximum design capacity. Most of Marisol's business consists of refining a high grade waste solvent to a quality which is adequate for thinning or cleaning purposes. The fuel blending operation consists of mixing solvent distillation bottoms with waste oils which are shipped to cement kilns to be used as fuel.

Noble Oil Company
Route 206 and Cramer Road
Vincentown, New Jersey 08088

This facility is a transfer and storage facility for waste fuel oils, lubrication oils and hydraulic oils. Noble handles approximately 10,000 gallons per day of waste oil.

Olin Hunt
(formerly Phillip A. Hunt Chemical Company)
3 Sperry Road
Fairfield, New Jersey 07006

This facility is permitted for storage and transfer only. The types of materials it accepts include spent ammoniacal and ferric chloride etchant liquors for Phillip A. Hunt Chemical Corp. customers. The company collects 140,000 gallons per year of this material from its customers in drums only. The permitted storage capacity is 96,055 gallon drums.

Petroleum Recycling, Inc.
(formerly Oil Recovery Co., Inc.)
Cenco Boulevard, PO Box 345
Clayton, New Jersey 08312

Petroleum Recycling treats waste oils, oil spill cleanup wastes, and oil tank clean outs with waste codes X721 through X728. The storage of waste material is in tanks with a total storage capacity of 1.4 million gallons. Processing at the facility includes heating, screening, gravity separation, filtering, chemical flocculation and fuel blending of many types of waste oils. The facility can treat an average of 6.2 million gallons per year of waste oil. The maximum

design treatment capacity, however, is 12.4 million gallons per year. The treatment residuals are aqueous liquids and organic sludges which amount to 25%-50% of the throughput. Waste water is shipped off-site for treatment by appropriate facilities. Tank bottoms are stabilized by fly ash addition and shipped to a landfill in Pennsylvania and light end are shipped to a kiln for use as a fuel.

The facility is proposing to increase its capacity of storage and treatment but this is dependent upon the outcome of the RCRA Part B permit.

Pricketts Industrial Tank Cleaning Corporation (PITCO)
735 North Hurffville Road
Deptford, New Jersey 08096

PITCO operates a tank cleaning service which removes oil residue from fuel oil tanks. The firm washes out tanks and returns the washout to its facility in tank trucks. The facility has eight tanks of various capacities in which water is allowed to settle. The total storage capacity of these tanks is 35,000 gallons. The oils are then treated by heating, sedimentation and blended to produce a final product. The treatment capacity of the plant is 400,000 gallons per year.

The residuals generated by the processes are aqueous liquids and organic sludges. The quantity of residuals generated is from 2-33% depending upon the type of wastes being treated. Sludges are shipped to Petroleum Recycling in Pennsylvania for treatment and wastewater is transported to another facility in Pennsylvania for treatment.

Rollins Environmental Services, Inc.
PO Box 221
Bridgeport, New Jersey 08014

Rollins is an incineration facility which has been operating at Bridgeport since 1969. Waste materials accepted include organic acids, alcohols, ketones, esters, chlorinated and fluorinated hydrocarbons, combustible organic and combustible aqueous solution, cyanide solutions and combustible fiber pak, cardboard or plastic containers. Approximately 37,000 tons of this material was accepted by the facility in 1987 of which 40% is used in kilns and 60% is burned in a liquid injection incinerator. A sizeable portion of the wastes received by Rollins is non-hazardous.

The solids generated by the biological treatment of their sanitary wastewater process as well as the solids not amenable to biological treatment are incinerated in a rotary kiln. The exhaust stream is treated by a scrubber which generates 20 tons per week of sludge while the incinerator itself generates 40 tons per week of kiln ash. These materials are manifested off-site to approved landfills in South Carolina and Ohio.

S&W Waste, Inc.
115 Jacobus Avenue
South Kearny, New Jersey 07032

S&W is a storage, transfer, recontainerization and sludge solidification facility. It accepts drummed wastes and containerized sludge. The plant handles approximately 30,000 tons of waste per year. The storage capacity of the facility is 247,000 gallons. The majority of the operation involves mixing liquid waste with absorbents to render them acceptable for landfilling and combustion in incinerators. The stabilized sludges are sent out-of-state to several different incinerators and landfills.

Safety-Kleen Corporation
Box 215, Almo Industrial Park
Clayton, New Jersey 08312

Safety-Kleen's primary services is a parts-washing machine rental service. Maintenance shops rent the parts washers from Safety-Kleen and the company replaces the solvent periodically. Spent solvent is then collected and returned to Safety-Kleen for recovery. Storage capacity at the facility is 60,174 gallons in drums and 914,600 gallons in tanks. Solvent reclamation is achieved by distillation which recovers methylene chloride, dichlorobenzene and mineral spirits. The distillation stills processes an average of 8,000 gallons per day of material. Residuals from the still bottoms are organic sludges and aqueous wastes which amount to 1% of the treatment throughput. Organic sludges are sent to facilities in Kentucky and Missouri to be processed for fuel and aqueous wastes are sent to a treatment facility in Ohio.

The facility is planning to increase its storage and treatment capacity by 30-40% within three years.

Safety-Kleen Corporation
32 Tompkins Parkway
Newark, New Jersey 07114

The Safety-Kleen Corp. Newark facility is a storage and transfer terminal of containerized solvents. The facility operates as a warehouse and distribution center for cleaning solvents used in their parts-washing machines that are rented to maintenance shops. Waste solvents are stored here prior to shipment to the Clayton facility for recycling. Storage capacity is 18,700 gallons. There are no changes planned for operations at the facility.

Safety-Kleen Corporation
515 East Main Street
Bound Brook, New Jersey 08805

The Safety-Kleen Corp. Bound Brook facility is a storage and transfer terminal of containerized solvents. The facility operates as a warehouse and distribution center for cleaning solvents used in their

parts-washing machines that are rented to maintenance shops. Waste solvents are stored here prior to shipment to the Clayton facility for recycling. Storage capacity is 16,500 gallons. The facility is expected to close within two years.

Safety-Kleen Corporation
4 Red Lion Road
Vincentown, New Jersey 08088

The Safety-Kleen Corp. Vincentown facility is a storage and transfer terminal of containerized solvents. The facility operates as a warehouse and distribution center for cleaning solvents used in their parts-washing machines that are rented to maintenance shops. Waste solvents are stored here prior to shipment to the Clayton facility for recycling. Storage capacity is 24,000 gallons. The facility is expected to close within two years.

SRSNJ/Safety-Kleen
(formerly Solvents Recovery Service of New Jersey)
1200 Sylvan Street
Linden, New Jersey 07036

SRS accepts 44,000 tons per year of oil, emulsions, solvents, paints and organic sludges. Storage of these wastes is in both tanks and drums with a total storage capacity of 2.5 million gallons.

SRS recovers usable solvent products from waste solvents in three ways: 1) distillation of a waste solvent back to its original specifications for reuse by the waste generator (batch tolling), 2) restoration of a waste solvent to a usable quality, but not to its original generator, and 3) blending spent solvents of satisfactory quality with still bottoms to produce a commercial grade fuel, often used in cement kilns or incinerators. The equipment used in this processing includes distillation columns, fractionation towers, batch stills, thin film evaporators and drying equipment for water removal.

The residuals generated from the treatment processes are organic sludges which amount to 10% of the treatment throughput. The sludges are used as a fuel source by kilns and blast furnaces at several locations out-of-state.

Standard Tank Cleaning
184 Hobart Avenue
Bayonne, New Jersey 07002

This facility cleans waste oil and oil sludges from tanks and barges, mostly from barges delivering oil the nearby Exxon Refining. Approximately 1.5 million gallons per year of cleanout material is generated by the cleaning operations which is hauled to the facility. Storage of the tank cleanout material is in tanks with a storage

capacity of one million gallons. The waste oil is treated by API separators which yield recovered oil from top float material and organic solids from sedimentation within the separators. The residuals generated from API separation amount to 300 tons per year which are disposed of in a landfill in Pennsylvania.

Spectraserv, Inc.
(formerly Modern Transportation, Inc.)
75 Jacobus Avenue
Kearny, New Jersey 07032

Spectraserv accepts 520 tons per year of metal-bearing acidic and alkaline wastewaters. Storage capacity is 247,000 gallons in tanks.

Treatment of the wastewaters is by pH adjustment, precipitation and sedimentation. The sludges are dewatered with a plate/frame filter press which produces inorganic dewatered sludges which amount to 38% of the treatment throughput. The wastewater generated from the processes is discharged into a municipal wastewater collection system.

Pure Stream, Inc.
PO Box 1246
Blackwood, NJ 08012

Pure Stream specializes in the storage and treatment of waste oils. The types of waste accepted include: X721, X722, X724, X725 and X726.

TABLE 3-1
SUMMARY OF IN-STATE GENERATION BY WASTE TYPE IN BASEYEAR (1987)
(Tons/Year)

Waste type	Recurrent Generation	One-time Generation	Total Generation
1. Contaminated Soil	101	1	102
2. Halogenated Solvents	6,532	700	7,232
3. Nonhalogenated Solvents	48,197	4,650	52,847
4. Halogenated Organic Liquids	4,262	12	4,274
5. Nonhalogenated Organic Liquids	57	21	78
6. Organic Liquids, NEC	58,450	1,599	60,049
7. Mixed Organic/Inorganic Liquids	3,589	1,065	4,654
8. Inorganic Liquids with Organics	15,050	3,286	18,336
9. Inorganic Liquids with Metals	81,196	3,509	84,705
10. Inorganic Liquids, NEC	436,709	1,599	438,308
11. Halogenated Organic Sludges/Solids	104,557	12,982	117,539
12. Nonhalogenated Organic Sludges/Solids	301	925	1,226
13. Organic Sludges/Solids, NEC	6,050	1,018	7,068
14. Mixed Organic/Inorganic Sludges/Solids	518	44	562
15. Inorganic Sludges/Solids with Metals	38,098	15,757	53,855
16. Inorganic Sludges & Solids, NEC	7,876	463	8,339
17. Other Wastes	5,652	8	5,660
Total	817,195	47,639	864,834

TABLE 3-2
SUMMARY OF WASTE QUANTITIES EXPORTED IN BASE YEAR (1987)
BY SARA MANAGEMENT CATEGORY AND IMPORTING STATE
(Tons/Year)

IMPORTING STATE	METALS RECOVERY	SOLVENTS RECOVERY	OTHER RECOVERY	INCINERATION	ENERGY RECOVERY	AQUEOUS TREATMENT	OTHER TREATMENT	SLUDGE TREATMENT	STABILI ZATION	LAND TREATMENT	LANDFILL	DEEP WELL INJECTION	OTHER DISPOSAL	STORAGE	TOTAL
AL	0	893	0	3	0	0	1	0	26	0	2,092	0	0	0	3,015
AR	0	0	0	631	0	0	70	0	23	0	0	0	0	0	724
CA	0	0	0	0	0	23	0	0	0	0	0	0	0	0	23
CO	0	0	0	0	0	0	41	0	0	0	0	0	0	0	41
CT	33	4	0	0	678	1,347	69	0	64	0	0	0	0	56	2,251
DE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FL	0	0	0	1	0	0	18	0	0	0	0	0	0	0	19
ID	0	0	0	0	0	0	0	0	0	0	17	0	0	0	17
IL	0	539	0	454	0	208	0	0	0	0	0	0	0	0	1,201
IN	0	0	0	2	1,345	0	263	0	0	0	17,320	0	0	0	18,930
KS	0	0	0	0	0	00	0	0	0	0	0	0	0	0	0
KY	0	1,341	0	95	0	0	0	0	0	0	0	0	0	0	1,436
LA	0	0	0	1,120	10,170	113	1,261	0	0	0	0	0	0	0	12,664
MA	0	69	0	0	0	0	0	0	0	0	0	0	0	0	69
MD	0	3,648	80	45	893	18	1,213	0	0	0	0	0	0	144	6,041
ME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MI	0	114	0	0	0	8	690	0	696	0	15,086	0	0	0	16,596
MN	0	0	0	144	0	0	0	0	0	0	0	0	0	0	144
MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MS	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
NC	0	617	0	1,583	23	2	1	0	0	0	0	0	0	0	2,226
NY	73	1,052	0	7	3,878	442	1,184	0	92	0	14,865	0	0	157	21,750
OH	1,559	3,366	46	2,076	309	289	982	53	979	0	20,817	0	0	230	30,706
OK	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
PA	13,920	5,137	271	998	34,166	7,149	3,460	2,398	5,717	0	0	0	178	0	73,392
RI	40	0	306	0	0	222	10	0	0	0	0	0	0	0	578
SC	0	520	0	2,070	160	159	23	0	2,197	0	0	0	0	29	5,158
SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TN	0	0	0	0	0	0	6	0	42	0	0	0	0	0	48
TX	0	0	0	2	0	0	295	0	0	0	0	0	0	0	297
VA	0	159	0	6,618	0	0	1,661	0	0	0	0	0	0	0	8,438
WI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WV	0	0	0	7	0	15	21	0	0	0	0	0	0	1	44
TOTAL	15,625	17,459	703	15,854	51,622	9,995	11,272	2,451	9,838	0	70,199	0	178	617	205,811

TABLE 3-1
SUMMARY OF WASTE QUANTITIES IMPORTED IN BASE YEAR (1987)
BY SARA MANAGEMENT CATEGORY AND EXPORTING STATE
(Tons/Year)

EXPORTING STATE	METALS RECOVERY	SOLVENTS RECOVERY	OTHER RECOVERY	INCINERATION	ENERGY RECOVERY	AQUEOUS TREATMENT	OTHER TREATMENT	SLUDGE TREATMENT	STABILI ZATION	LAND TREATMENT	LANDFILL	DEEP WELL INJECTION	OTHER DISPOSAL	TOTAL
AL	0	0	0	37	0	47	386	0	0	0	0	0	0	470
AR	0	0	0	20	0	0	0	0	0	0	0	0	0	20
AZ	0	0	0	0	0	83	0	0	0	0	0	0	0	83
CA	0	1,341	0	104	0	291	63	0	0	0	0	0	0	1,799
CT	521	3,411	0	4,338	27	9,420	2,114	0	1	0	0	0	0	19,832
DC	0	0	0	0	0	0	22	0	0	0	0	0	0	22
DE	0	2,433	0	959	38	2,009	571	0	2	0	0	0	0	6,012
FL	131	0	0	0	0	322	16	0	0	0	0	0	0	469
GA	1	0	0	84	0	249	1,738	0	0	0	0	0	0	2,072
IA	1	0	0	1	0	22	0	0	0	0	0	0	0	24
IL	20	0	0	1	0	713	66	0	0	0	0	0	0	800
IN	49	0	0	0	0	209	0	0	0	0	0	0	0	258
KY	0	0	0	0	0	161	43	0	0	0	0	0	0	204
LA	0	0	0	33	0	0	0	0	0	0	0	0	0	33
MA	411	6,197	0	1,578	0	6,518	5,012	0	102	0	0	0	0	19,818
MD	5	3,926	0	727	0	5,394	7,964	0	355	0	0	0	0	18,370
ME	93	736	0	383	0	162	116	0	0	0	0	0	0	1,471
MI	789	0	0	288	0	1,742	39	0	0	0	0	0	0	2,858
MN	102	0	0	0	0	6	120	0	0	0	0	0	0	228
MO	7	0	0	0	0	0	0	0	0	0	0	0	0	7
NC	0	348	0	1,151	0	2,153	719	0	9	0	0	0	0	4,378
NH	108	28	0	77	0	1,152	3,027	0	0	0	0	0	0	4,387
NY	1,000	11,565	0	3,460	2,940	8,141	4,284	0	3,645	0	0	0	0	35,035
OH	21	552	0	81	0	1,276	858	0	204	0	0	0	0	2,992
PA	64	10,193	0	5,853	124	30,674	35,839	2	1,107	0	0	0	0	83,856
RI	14	227	0	282	0	103	161	0	0	0	0	0	0	787
SC	31	135	0	295	0	890	109	0	0	0	0	0	0	1,460
TN	0	0	0	0	0	529	3,488	0	0	0	0	0	0	4,017
TX	0	0	0	232	0	564	12	0	0	0	0	0	0	808
UT	0	0	0	0	0	0	2	0	0	0	0	0	0	2
VA	0	4,038	0	217	42	519	889	0	2	0	0	0	0 0	5,707
VT	0	1,283	0	1	0	143	584	0	0	0	0	0	0	2,011
WI	108	0	0	0	0	31	1	0	0	0	0	0	0	140
WV	0	0	0	919	0	4,319	574	0	0	0	0	0	0	5,812
TOTAL	3,474	48,409	0	20,881	3,171	77,842	68,816	2	5,427	0	0	0	0	228,022

TABLE 3-4
BASEYEAR (1987) WASTE MANAGED IN STATE BY WASTE TYPE
AND SARA MANAGEMENT CATEGORIES AT ALL FACILITIES

WASTES TYPES	METALS RECOVERY	SOLVENTS RECOVERY	OTHER RECOVERY	INCINERATION	ENERGY RECOVERY	AQUEOUS TREATMENT	OTHER TREATMENT	SLUDGE TREATMENT	STABILI ZATION	LAND TREATMENT	LANDFILL	DEEP WELL INJECTION	OTHER DISPOSAL	TOTAL
1. Contaminated Soils	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2. Halogenated Solvents	0	5,868	0	3,081	0	2,080	23	0	220	0	0	0	1	11,233
3. Nonhalogenated Solvents	0	16,390	0	7,054	108	7,661	626	0	1,585	0	0	0	0	35,424
4. Halogenated Organic Liquids	0	231	0	4,081	0	31	44	0	0	0	0	0	0	4,387
5. Nonhalogenated Organic Liquids	0	12	0	285	0	23	1	0	3	0	0	0	0	304
6. Organic Liquids, NEC	3	51,898	17	19,660	1,578	12	978	0	28	0	0	0	0	74,174
7. Mixed Organic/Inorganic Liquids	0	201	0	1,467	0	13,331	291	0	29	0	0	0	60	15,379
8. Inorganic Liquids with Organics	0	0	0	0	4,333	21,365	37	0	0	0	0	0	0	25,735
9. Inorganic Liquids with Metals	939	4	0	37	47	61,278	48,956	0	777	0	0	0	0	112,050
10. Inorganic Liquids, NEC	137	0	0	0	0	3,190	466,160	0	20	0	0	0	32,625	502,132
11. Halogenated Organic Sludges&Solids	0	1,243	0	864	0	2,918	6	35	386	0	87,077	0	0	92,529
12. Nonhalogenated Sludges & Solids	0	31	0	32	0	0	0	12	902	0	0	0	0	977
13. Organic Sludges&Solids, NEC	0	0	0	9	0	340	9	31	7,670	12	2	0	1	8,074
14. Mixed Organic/Inorganic Sludges&Solids	0	0	0	775	0	46	1	251	0	0	0	0	0	1,073
15. Inorganic Sludges&Solids with Metals	404	303	0	416	0	16,355	12	1,735	1,062	296	38	0	9	20,630
16. Inorganic Sludges&Solids, NEC	2,188	0	0	892	0	1,976	1,239	2	315	36	0	0	22	6,670
17. Other Wastes, NEC	0	182	0	151	0	3,784	2,742	0	0	0	0	0	601	7,460
TOTAL	3,671	76,363	17	38,745	6,064	134,370 0	521,139	2,066	12,997	344	87,117	0	33,319	916,212

TABLE 3 4A
BASEYEAR (1987) WASTE MANAGED IN STATE BY WASTE TYPE
AND SARA MANAGEMENT CATEGORIES AT CAPTIVE FACILITIES

WASTES TYPES	METALS RECOVERY	SOLVENTS RECOVERY	OTHER RECOVERY	INCINERATION	ENERGY RECOVERY	AQUEOUS TREATMENT	OTHER TREATMENT	SLUDGE TREATMENT	STABILI ZATION	LAND TREATMENT	LANDFILL	DEEP WELL INJECTION	OTHER DISPOSAL	TOTAL
1. Contaminated Soils	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Halogenated Solvents	0	882	0	14	0	0	0	0	0	0	0	0	0	896
3. Nonhalogenated Solvents	0	20	0	0	0	0	0	0	0	0	0	0	0	20
4. Halogenated Organic Liquids	0	0	0	10	0	0	0	0	0	0	0	0	0	10
5. Nonhalogenated Organic Liquids	0	0	0	7	0	0	0	0	0	0	0	0	0	7
6. Organic Liquids, NEC	0	0	0	72	653	12	26	0	0	0	0	0	0	763
7. Mixed Organic/Inorganic Liquids	0	0	0	0	0	2	0	0	0	0	0	0	0	2
8. Inorganic Liquids with Organics	0	0	0	0	0	2866	0	0	0	0	0	0	0	2866
9. Inorganic Liquids with Metals	27	0	0	0	0	8	152	0	0	0	0	0	0	187
10. Inorganic Liquids, NEC	3	0	0	0	0	57	1165	0	0	0	0	0	0	1225
11. Halogenated Organic Sludges&Solids	0	0	0	0	0	0	1	0	0	0	0	0	0	1
12. Nonhalogenated Sludges & Solids	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13. Organic Sludges&Solids, NEC	0	0	0	0	0	0	9	0	0	0	0	0	0	9
14. Mixed Organic/Inorganic Sludges&Solids	0	0	0	70	0	0	0	0	0	0	0	0	0	70
15. Inorganic Sludges&Solids with Metals	19	0	0	30	0	23	3	0	0	0	0	0	0	75
16. Inorganic Sludges&Solids, NEC	3	0	0	58	0	18	892	0	0	0	0	0	0	971
17. Other Wastes, NEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	52	902	0	261	653	2986	2248	0	0	0	0	0	0	7102

TABLE 3-4B
BASE YEAR (1987) WASTE MANAGED IN STATE BY WASTE TYPE
AND SARA MANAGEMENT CATEGORIES AT COMMERCIAL FACILITIES

WASTES TYPES	METALS RECOVERY	SOLVENTS RECOVERY	OTHER RECOVERY	INCINERATION	ENERGY RECOVERY	AQUEOUS TREATMENT	OTHER TREATMENT	SLUDGE TREATMENT	STABILI ZATION	LAND TREATMENT	LANDFILL	DEEP WELL INJECTION	OTHER DISPOSAL	TOTAL
1. Contaminated Soil	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2. Halogenated Solvents	0	4,980	0	2,800	0	2,060	23	0	220	0	0	0	0	10,083
3. Nonhalogenated Solvents	0	18,371	0	6,975	42	7,661	30	0	1,585	0	0	0	0	34,664
4. Halogenated Organic Liquids	0	231	0	120	0	31	44	0	0	0	0	0	0	426
5. Nonhalogenated Organic Liquids	0	12	0	253	0	23	1	0	3	0	0	0	0	292
6. Organic Liquids, NEC	3	51,898	17	17,118	473	0	108	0	28	0	0	0	0	69,645
7. Mixed Organic/Inorganic Liquids	0	201	0	1,466	0	13,329	291	0	29	0	0	0	0	15,316
8. Inorganic Liquids with Organics	0	0	0	0	4,333	18,499	37	0	0	0	0	0	0	22,869
9. Inorganic Liquids with Metals	912	4	0	37	47	39,521	59	0	777	0	0	0	0	41,357
10. Inorganic Liquids, NEC	133	0	0	0	0	3,128	76,028	0	20	0	0	0	25	79,334
11. Halogenated Organic Sludges&Solids	0	1,243	0	864	0	2,918	5	0	386	0	0	0	0	5,416
12. Nonhalogenated Organic Sludges&Solids	0	31	0	32	0	0	0	0	902	0	0	0	0	965
13. Organic Sludges&Solids, NEC	0	0	0	9	0	0	0	0	7,670	0	0	0	0	7,679
14. Mixed Organic/Inorganic Sludges&Solids	0	0	0	612	0	46	1	0	0	0	0	0	0	659
15. Inorganic Sludges&Solids with Metals	385	303	0	386	0	13,863	9	0	1,062	0	0	0	0	16,008
16. Inorganic Sludges&Solids, NEC	2,185	0	0	834	0	1,956	347	2	315	0	0	0	0	5,641
17. Other Wastes, NEC	0	102	0	151	0	2,608	33	0	0	0	0	0	0	2,874
TOTAL	3,618	77,486	17	31,858	4,895	106,545	77,016	2	12,997	0	0	0	25	313,239

TABLE 3.4C
BASEYEAR (1987) WASTE MANAGED IN STATE BY WASTE TYPE
AND SARA MANAGEMENT CATEGORIES AT ON SITE FACILITIES

WASTES TYPES	METALS RECOVERY	SOLVENTS RECOVERY	OTHER RECOVERY	INCINERATION	ENERGY RECOVERY	AQUEOUS TREATMENT	OTHER TREATMENT	SLUDGE TREATMENT	STABILI ZATION	LAND TREATMENT	LANDFILL	DEEP WELL INJECTION	OTHER DISPOSAL	TOTAL
1. Contaminated Soil	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Halogenated Solvents	0	7	0	246	0	0	0	0	0	0	0	0	1	254
3. Nonhalogenated Solvents	0	0	0	78	64	0	598	0	0	0	0	0	0	740
4. Halogenated Organic Liquids	0	0	0	3,930	0	0	0	0	0	0	0	0	0	3,930
5. Nonhalogenated Organic Liquids	0	0	0	5	0	0	0	0	0	0	0	0	0	5
6. Organic Liquids, NEC	0	0	0	2,469	452	0	844	0	0	0	0	0	0	3,765
7. Mixed Organic/Inorganic Liquids	0	0	0	0	0	0	0	0	0	0	0	0	80	80
8. Inorganic Liquids with Organics	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Inorganic Liquids with Metals	0	0	0	0	0	21,749	48,756	0	0	0	0	0	0	70,505
10. Inorganic Liquids, NEC	0	0	0	0	0	5	388,987	0	0	0	0	0	32,600	421,572
11. Halogenated Organic Sludges&Solids	0	0	0	0	0	0	0	35	0	0	87,077	0	0	87,112
12. Nonhalogenated Organic Sludges&Solids	0	0	0	0	0	0	0	12	0	0	0	0	0	12
13. Organic Sludges&Solids, NEC	0	0	0	0	0	340	0	31	0	12	2	0	1	386
14. Mixed Organic/Inorganic Sludges&Solids	0	0	0	93	0	0	0	251	0	0	0	0	0	344
15. Inorganic Sludges&Solids with Metals	0	0	0	0	0	2,469	0	1,735	0	296	36	0	9	4,547
16. Inorganic Sludges&Solids, NEC	0	0	0	0	0	0	0	0	0	36	0	0	22	58
17. Other Wastes, NEC	0	0	0	0	0	1,276	2,709	0	0	0	0	0	601	4,586
TOTAL	0	7	0	6,821	516	25,839	441,874	2,064	0	344	87,117	0	33,294	597,876

TABLE 3-5

COMPARISION OF MAXIMUM WASTE MANAGEMENT CAPACITY WITH UTILIZED CAPACITY FOR ALL TSD FACILITIES
[Tons/Year, Landfill (Tons)]

SARA MANAGEMENT CATEGORY	Baseyear 1987 Maximum Capacity	Baseyear (1987) Management Demand				Remaining Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous	Total	
1. Metals recovery	5,753	3,671	2	7	3,680	2,073
2. Solvents recovery	4,795,604	78,364	174	86	78,624	4,716,980
3. Other recovery	76,180	17	28,584	29	28,630	47,550
4.&5. Incineration	78,946	38,745	2,250	3,026	44,021	34,925
6. Energy recovery	138,422	6,064	77,969	442	84,475	53,947
7.&8. Aqueous treatment	428,276	134,371	6,315	23,966	164,652	263,624
9. Other treatment	14,247,331	521,264	3,176	8,388	532,828	13,714,503
10. Sludge treatment	27,107,056	2,065	2	71	2,138	27,104,918
11. Stabilization	91,177	12,998	16,321	2,366	31,685	59,492
12. Land treatment	3,980	345	16	0	361	3,619
13. Landfill	78,040	87,117	27	0	87,144	-9,104
14. Deepwell injection	0	0	0	0	0	0
15. Other disposal	39,783	33,320	54	3,728	37,102	2,681
Totals	47,090,548	918,341	134,890	42,109	1,095,340	45,995,208

*Negative Quantities Reflect Inadequate Capacity Information

TABLE 3-5A

COMPARISON OF MAXIMUM WASTE MANAGEMENT CAPACITY WITH UTILIZED CAPACITY FOR CAPTIVE FACILITIES
[Tons/Year, Landfill (Tons)]

SARA MANAGEMENT CATEGORY	Baseyear (1987) Maximum Capacity	Baseyear (1987) Management Demand				Remaining* Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous	Total	
1. Metals recovery	601	52	0	0	53	548
2. Solvents recovery	902	902	0	0	902	0
3. Other recovery	29	0	28	0	28	1
4. & 5. Incineration	305	262	2	3	267	38
6. Energy recovery	2,075	653	0	0	653	1,422
7.&8. Aqueous treatment	2,673	2,986	137	2	2,971	-298
9. Other treatment	9,175,317	2,248	29	0	2,299	9,173,018
10. Sludge treatment	76	0	0	0	0	76
11. Stabilization	5,698	0	5,698	0	5,698	0
12. Land treatment	0	0	0	0	0	0
13. Landfill	0	0	0	0	0	0
14. Deepwell injection	0	0	0	0	0	0
15. Other disposal	63	0	0	63	63	0
Totals	9,187,739	7,103	5,894	68	12,934	9,174,805

*Negative Quantities Reflect Inadequate Capacity Information

TABLE 3-5B

COMPARISION OF MAXIMUM WASTE MANAGEMENT CAPACITY WITH UTILIZED CAPACITY FOR COMMERCIAL FACILITIES
[Tons/Year, Landfill (Tons)]

SARA MANAGEMENT CATEGORY	Baseyear (1987) Maximum Capacity	Baseyear (1987) Management Demand				Remaining* Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous	Total	
1. Metals recovery	5,152	3,619	2	7	3,628	1,524
2. Solvents recovery	108,381	77,455	174	86	77,594	30,666
3. Other recovery	76,126	17	28,519	29	28,545	47,561
4. &5. Incineration	40,000	31,661	2,176	3,022	36,859	3,141
6. Energy recovery	120,037	4,895	77,969	442	83,306	36,731
7.&8. Aqueous treatment	413,949	105,545	6,178	23,911	135,634	278,315
9. Other treatment	237,972	77,143	834	6,538	84,515	154,433
10. Sludge treatment	23	2	0	0	2	21
11. Stabilization	85,479	12,998	10,623	2,366	25,987	59,492
12. Land treatment	0	0	0	0	10,296	93,830
13. Landfill	0	0	0	0	639	-639
14. Deepwell injection	0	0	0	0	25	-25
15. Other disposal	0	25	0	0	58	-58
Totals	1,087,119	313,360	126,475	36,401	487,088	704,992

*Negative Quantities Reflect Inadequate Capacity Information

TABLE 3-5C

COMPARISON OF MAXIMUM WASTE MANAGEMENT CAPACITY WITH UTILIZED CAPACITY FOR ON-SITE FACILITIES

[Tons/Year, Landfill (Tons)]

SARA MANAGEMENT CATEGORY	1987 Maximum Capacity	1987 Management Demand				Remaining Capacity
		Federal Hazardous	Other Hazardous	Nonhazardous	Total	
1 . Metals recovery	0	0	0	0	0	0
2 . Solvents recovery	4,686,321	7	0	0	7	4,686,314
3 . Other recovery	25	0	0	0	0	25
4 & 5 . Incineration	38,641	6,822	71	1	6,894	31,747
6 . Energy recovery	16,310	516	0	0	516	15,794
7 & 8 . Aqueous treatment	11,654	25,840	0	53	25,893	-14,239
9 . Other treatment	4,834,042	441,874	2,313	1,850	446,037	4,388,005
10 . Sludge treatment	27,106,957	2,063	2	71	2,136	27,104,821
11 . Stabilization	0	0	0	0	0	0
12 . Land treatment	3,980	345	16	0	361	3,619
13 . Landfill	91,000	87,117	27	0	87,144	3,856
14 . Deepwell injection	0	0	0	0	0	0
15 . Other disposal	39,720	33,295	54	3,665	37,014	2,706
Totals	36,828,650	597,879	2,483	5,640	606,002	36,222,648